

Halachic Issues in the Determination of Death and in Organ Transplantation

Including an Evaluation of the Neurological "Brain Death" Standard

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A Study by the Vaad Halacha of the Rabbinical Council of America of the Halachic and Medical Issues Relating to Organ Transplantation from both Live & Cadaver Donors, and the Determination of Death in Halacha. This Study is Designed to Assist Members of the RCA in the Process of Psak Halacha and is itself not Intended as a Formal Ruling.

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Section I: Introduction¹

In early 2006, the leadership of the Rabbinical Council of America commissioned its Vaad Halacha to investigate the issues pertaining to organ transplantation and to provide clarity and direction for its members. It was felt that much confusion existed regarding these issues, with rabbis themselves often not sure where to turn. Additionally, other leading organizations in the Orthodox community had turned to us for guidance. The need to revisit these issues existed as well, because in the years since many of the earlier rulings were issued, new medical information has been gained and new medical realities have come about. It should be noted that this need is not unique to the Jewish community, as can be seen from the President's Council on Bioethics, which, in December 2008, issued a white paper titled "Controversies in the Determination of Death." While it offered no changed recommendations, the paper openly acknowledged many changed understandings of both the brain and body of a "brain dead" person, so much so that it felt compelled to offer a fundamentally new rationale for the continued use of the "brain death" criteria, as the authors felt that the previously widely accepted rationale was based on mistaken information. In that same spirit, it should be stated at the outset that it is also possible that at some future point, parts of this study may need to be revisited, as the science of medicine advances.

As the President's Council notes in the above mentioned paper:

In the late twentieth century, as a response to certain advances in critical care medicine, a new standard for determining death became accepted in both the medical and legal communities in the United States and many other parts of the world. Until then, the prevailing standard was the traditional cardiopulmonary standard: the

¹ While the Vaad Halacha did not formally create a medical advisory panel, many physicians and researchers have been consulted, some quite extensively and others for shorter or more technical information. We thank them all for their significant efforts and generous allocations of their time. Much of the medical information quoted in this document has been learned from these sources and is acknowledged as such. This group includes: Drs. Abraham S. Abraham, Sana Bloch, Shalom Buchbinder, Brenda Breuer, Deborah Fishkind, Jacob Fleishman, Mordechai Halperin, John K. Houten, Ari Joffe, Marshall Keilson, Frank S. Lieberman, Dominick Purpura, Edward Reichman, Daniel Rosenbaum, Meg Rosenblatt, Michael Rubin, David Serur, Robert Schulman, Ron Shapiro, Noam Stadlan, Thomas E. Starzl, Avraham Steinberg, Richard Weiss, Leon Zacharowicz and Lionel Zuckier. If there are others whose names have been inadvertently omitted, we apologize for this omission. It should be noted that there were others who were consulted but did not wish to have their names mentioned.

We also wish to thank the large number of Talmidei Chachamim, both in America and Israel, who have generously given of their time; most of them are quoted by name in the text or in footnotes. There are a few individuals who have devoted significantly of their time and energies to the preparation of this document, some in terms of reading and commenting on the text, others for their advice and guidance during this process of more than three years in duration. These individuals are: Professor Abraham S. Abraham, MD, Rav Emanuel Feldman, Rav Basil Herring, Rav David Shabtai, MD and Leon Zacharowicz, MD. Special thanks are given to Rav Arie Folger for his work in organizing and editing both the Halachic and medical portions of this document.

The research and writing of this document was greatly aided by the support and encouragement received from each of the three presidents of the RCA during whose tenure this work took place. Special thanks are given to Rav Polakoff, Rav Hochberg and Rav Kletenik.

irreversible loss of heart and lung functions signals the death of a human being. The new standard, which took its place alongside the traditional one, is based on the irreversible loss of all brain-dependent functions. In most human deaths, the loss of these neurological functions is accompanied by the traditional, familiar markers of death: the patient stops breathing, his or her heart stops beating, and the body starts to decay. In relatively rare cases, however, the irreversible loss of brain-dependent functions occurs while the body, with technological assistance, continues to circulate blood and to show other signs of life. In such cases, there is controversy and confusion about whether death has actually occurred. (Controversies, pg. 1)

As the neurological standard came to partly supplant the long established traditional cardiopulmonary standard, the burden of proof is on the new, neurological standard. Indeed, this paper is not being one sided, in including a halachic evaluation of the neurological “whole brain failure” standard for the determination of death; it merely recognizes that, as a *שידור*, the neurological standard must stand up to close scrutiny. This paper analyzes forty years of accumulated halachic opinion and the concurrent progress in medical knowledge, to ask whether a determination of death based upon the neurological “brain death” standard is warranted beyond reasonable doubt.

The advent of organ transplantation has created lifesaving possibilities for many thousands; at the same time it has made the question of the determination of death all the more pressing. It has also given rise to additional moral, ethical, and sometimes legal questions, which previous generations never considered.

Ethicists, both secular and religious, have been called upon to address these weighty questions. While all are dealing with the same issues, perspectives and resolutions may in some cases be quite different. The answers to some of these ethical dilemmas are easily culled from our sacred sources, while in other cases the answers have been far less obvious or clear. In some cases this has resulted in significant divergence of opinion within the rabbinic community.

This study considered both live donor transplants and cadaver transplants. While both are clearly designed to save the lives of the recipients, the issues involved are quite different. In the case of live donor transplants, the primary issue is at which point the donation becomes a mitzvah, or even an obligation, and not just an acceptable option. One would be hard-pressed to find that any of the procedures currently performed would not actually be permitted according to Halacha.

In the realm of cadaver donations, the issues are far more difficult. It has been a given in the medical community that the “dead donor” rule is the standard to be used, meaning that only a donor deemed dead is an acceptable source of organs. In the case of corneal transplants this is easy, as corneas are usable as long as they are taken within 24 hours of death. While not commonly done, kidneys can also be used for transplant for a brief period after a natural cardiac death has taken place. However, most organs cannot currently be used for transplant if they come from what has historically been recognized as a cadaver.

Starting in 1968, with the publication of the Harvard Criteria, and reaching full legal recognition with the 1981 Uniform Determination of Death Act, “brain death” has become the legally accepted criterion for organ transplant. While the “official opinion” of the medical community is

to consider “brain death” as death, there are those in the medical world who do not necessarily consider “brain death” as death, but still consider it legally and morally appropriate to take organs from certain comatose patients incapable of recovery to benefit one with the possibility of long term life. Nevertheless, this is not hotly contested in the medical community, since on a practical level almost all agree that the organs may be taken following “brain death.”

Strikingly, it is sometimes those in the medical community who do not truly believe that “brain death” is death that make even more radical suggestions, namely, that certain severely brain damaged patients or anencephalic babies may be used as donors, even though all agree that they are alive. Recently this last idea has found new expression in what is euphemistically called “non-heart beating donors”, whereby brain damaged but not “brain dead” patients are intentionally removed from life support in order to cause them cardiac arrest, thus putting them into the dead donor category. While such a patient would, by the time his or her organs are harvested, assumedly be dead, this result is only brought about through what may very well be an act of bloodshed. However, even the underlying assumption of this procedure may not be valid, as a heart stopped under such circumstances is intended for transplant and can still be restarted; accordingly, to declare such a patient as dead is highly questionable.

While “non-heart beating donors,” PVS patients and the anencephalic babies are all viewed by Halacha as alive, the status of “brain death” has been a major controversy in Halacha. The question at hand is what the definition of “dead” is: does Halacha continue to utilize only the traditional criteria of cessation of cardiac and respiratory activity, or does it also acknowledge “brain death?” Related, but not identical with this question, is the status of artificial respiration in a patient who has permanently lost the ability to breathe, due to causes other than “brain death.”

While all view the moral and legal questions involved with the determination of death for transplant purposes as serious questions, Halacha brings its own unique perspective. It is clear from the Talmud and Shulhan Aruch that חיי שעה (life that can only continue for a brief period of time) is also considered life worth saving – even at the expense of the desecration of Shabbos – no different than the life of a patient who has many years ahead of him.² Similarly, the Talmud states that the life of one person may not be taken to save the life of another³. Accordingly, if a potential organ donor is alive, even if he has only minutes left, he should not to be considered an acceptable source for organs. It is with this backdrop that all modern halachic authorities have evaluated the questions of “cadaver” donations.

Whatever side of the debate a posek comes out on, it is completely unacceptable to suggest that he does or doesn’t favor saving lives; saving lives is the singular issue at stake in this discussion. The question, however, is the status of the potential donor; is he indeed dead, in which case his organs would indeed be available for transplant, or is he still alive, and to remove his organs, or even to hasten his death, would be an act of bloodshed?

This last idea is most troublesome for much of the non-Torah world – one patient has, at best, hours or days left, with absolutely no “quality of life,” while the other patient can have many healthy productive years if given the transplant. This is indeed a most painful issue, but if indeed

² יומא פה, אר"ח סי' שכ"ט סע' ד'
³ סנהדרין ע"ד.

the potential donor is alive, or even possibly alive, the voice of the Torah speaks loudly and clearly, that his life too is a life and it may not be taken, even for the most noble of reasons.

Despite the importance of saving lives, including through organ transplantation, the question of the determination of the time of death is best analyzed in isolation. Indeed, while neither writing from a halachic perspective, nor addressing it per se, the President's Council report opined correctly (crediting the 1968 Harvard Committee with setting the tone on this issue) that:

The question of whether a human being in the difficult-to-judge state of “brain death” is alive or dead should be answered on its own terms, not with an eye to the practical effects that a new standard for determining death might have. In other words, society must first decide how to understand the condition of ventilator-dependent patients who have suffered the most debilitating kind of brain injury: Are these individuals dead? Can we *know* [emphasis in the orig. - ed.] that they are dead with the requisite amount of certainty to act accordingly? Only after these questions have been answered can the matter of eligibility for organ procurement be addressed.

Related to these questions, but not necessarily dependent on the acceptance of “brain death”, is to what extent halachic criteria and protocol would be followed by the medical community, which is not bound by the considerations of Halacha. What influence or control do rabbis and family members have with a possibly an anxious medical transplant team with potentially different priorities? This is a practical issue with major ramifications. Also involved in this question, is the issue of whether donor cards are to be encouraged or not, an issue that does not simply hinge on the question of how death is to be determined.

Methodology

Clearly, a study such as this must be based on respect for and reliance upon medical knowledge, demonstrated scientific truth and the role of careful clinical measurement and observation. The halachic process has abiding respect for medical and scientific knowledge that reflects scientific research, methodology, and well-established conclusions. Indeed, we at the RCA's Vaad Halacha have, in recent years, followed precisely such an approach when ruling that the use of tobacco and smoking is forbidden, basing our ruling on the preponderance of scientific and medical evidence that conclusively established the life and health-threatening dangers of such activities. Moreover, the Vaad Halacha ruled this way in spite of numerous halachic sources and precedents to the contrary, insofar as we believed that earlier halachic rulings were not (and could not have been) aware of the compelling scientific evidence that has become available in recent years. But such abiding respect for the established findings of science and medicine does not extend to fundamental philosophical and ethical definitions and criteria of life, of death, or to the assignment of priorities in choosing whose life to prolong. For such questions are not by any means in the exclusive domain of science, medicine or technology. While those disciplines need to be consulted in determining clinical and physiological states, or the likelihood of recovery and physical function, other matters are beyond the doctor's purview, including which physical state indicates the presence of life or death. In many cases these are not just scientific determinations, but halachic ones, to be determined for the Jew by a reference to Torah sources and expert rabbinic opinion.

How the halachic tradition makes such determinations is a highly complex matter. It is certainly quite possible that even when all the classical texts are studied and analyzed, expert medical consultation has taken place, and all new scientific insights as well as halachic precedents are brought together, that a single consensus may not be reached. There are times when the halachic process will result in multiple viewpoints, or majority and minority positions, each to be carefully considered in making a halachic determination in any given case.

The Question of Death and Organ Transplantation at the Rabbinical Council of America

It was with great trepidation that the Vaad Halacha approached these sensitive and often controversial questions. It would have been far easier to close our eyes to the issue. Yet, for many reasons we have been compelled to accept this responsibility. In the course of our research there have been those who have told us that we “must” rule one way or the other, and there have been those who have insisted that our conclusions “must” give all opinions equal standing, without accepting, rejecting or favoring one over the other.

Most importantly, it should be known that our inquiry was undertaken with only two preconditions: firstly, to be fully aware of the awesome responsibility that lay before us, and secondly, to be engaged in an unfettered search for the truth. One of the most rewarding aspects of our inquiry has been reaching out to a large selection of scholars and authorities of various opinions, putting their works together, and asking each to account for the strengths and weaknesses of the arguments of the others. Although there were some individuals we wanted to consult, who were not interested or willing to speak with us, the overwhelming majority did, and were most helpful. For most of those who did not speak with us, we were able to find either written or audio material that presented their opinions. For various reasons, there were a few individuals, both rabbis and doctors, who did speak with us but do not want to be quoted by name.

Much of this issue is not new to the RCA, as in August 1991 the majority of the Vaad Halacha (consisting of Rav Sholom Rivkin, Rav Hershel Schachter, Rav Israel Wagner and Rav Mordechai Willig) issued a responsum rejecting both the permanent cessation of spontaneous respiration (in cases where artificial respiration is provided and the heart continues to beat) and “brain death” as criteria for determining death. At that time, two members of the Vaad Halacha favored the “brain death” criteria (Rav Nachum Rabinovitch and Rav Moshe Tendler) and one took no public position (Rav Gedalia Schwartz). This תשובה was issued in response to the Health Care Proxy that stated that “brain death” is a halachically accepted criterion of death; this document which was authored by Rav Tendler had been previously adopted by the Executive Committee of the RCA. In the wake of these two documents, much confusion and even ill-will have surrounded this issue.

It is certainly true that these issues have been dealt with, both orally and in writing, by many of the leading Rabbis of this and the previous generation, so it may well be asked what role there is for the Vaad Halacha of the RCA. There are a number of important answers to this question. For both live donor and cadaver transplants, science continues to learn more and progress; accordingly, these advances must be considered in making halachic determinations. Secondly, significant confusion has arisen regarding the teachings and rulings of a number of the greatest

rabbis and poskim of the previous generation, most notably, Rav Moshe Feinstein, Rav Yosef Dov Soloveitchik, and more recently, Rav Shlomo Zalman Auerbach. We have made great efforts to sort through much of this confusion. Thirdly, a clear and objective reading of the existing rabbinic literature was long overdue. While much has been written, there has been little in the way of scholarly analysis and objective review of that work.

The purpose of this study was not just to make a tally of those who support or oppose organ donation based on “brain death,” but to evaluate each opinion on its own merits. This evaluation included understanding the medical information used in those rulings; answering such questions as: was the information properly understood and applied, and have those medical assumptions changed in the years since the ruling was issued? An additional important question was, whether the opinion in question was an independent ruling of the author, just an affirmation of the rulings (or, in some cases, purported rulings) of other leading poskim, or even simply a loyal student following the teachings of his own rabbi.

Definition of Terms

Before embarking on the body of this paper a few definitions of terms are in order. Those rabbis who support the acceptance of the “brain death” criteria do so for one of three different reasons, each with their own logic and sources. The analysis and sources addressed in this paper relate at times to one and times to another of these three; efforts have been made to maintain clarity at all times, even though it is not always possible to fully separate these three issues.

A) Whole Brain Standard:

This is the criteria of the Uniform Determination of Death Act of 1981 that serves as the legal basis of “brain death” in most states. This act specifies a definition of death based on irreversible cessation of all functions of the entire brain, including the brain stem, the determination of death being in accordance with accepted medical standards.

This criterion does not mean what laymen often assume, namely that the entire brain is fully dead; rather it focuses on the complete loss of brain functions. Accordingly, the presence of residual cellular life in the brain is of little consequence to this approach.

The primary reason that this approach gained wide acceptance in the medical community as indicative of death was the assumption that with the “death of the brain” there is a complete loss of somatic integration, leaving the body of such a person as little more than a group of artificially maintained subsystems. This last assumption has been questioned in recent years.

B) Permanent Cessation of Spontaneous Respiration:

This approach is generally not accepted by the medical community, but has strong backing in some rabbinic circles. It states that a person is deemed alive or dead based on his or her ability to breathe spontaneously. While it does not consider the brain as the official determinant of death, the loss of function of the brain stem, or “brain stem death”, is a confirmation that spontaneous respiration has permanently ceased. On the surface this approach appears the same as “Brain Stem Death”, which is the accepted legal

criterion in the United Kingdom, although there may in fact be both theoretical and practical differences.

C) **Virtual Decapitation:**

This approach views a “dead brain” as if it has been severed from the body. Whether this is just another way to describe what the medical world calls Whole Brain Death, or whether “Virtual Decapitation” is a far more complete process, is itself a matter of considerable debate. According to the Rabbinic literature that appears to accept this approach, it would seem that just as decapitation means the head is entirely absent, so too “virtual decapitation” would mean that the entire brain has died, likely meaning each and every cell. Regardless of which possible application of this concept might be accepted, in general this approach seems to find far more support in classical rabbinic literature than concepts which relate to brain function.

A Note about Terminology

The term “Brain Death” is inappropriate and somewhat of a misnomer. It is a misnomer because when we speak of cardiopulmonary death, we are not asking whether the heart and lungs underwent localized organ death, but whether the individual patient died. So too, regarding the neurological standard that may or may not mark the death of a patient, the question isn't whether the brain died, but whether the patient died.

Furthermore, in the words of the President's Council report (Controversies, pg. 17):

The term “brain death” implies that there is more than one kind of death. This is a serious error, perpetuated by such statements as “the patient became brain dead at 3:00 a.m. on Thursday and died two days later.” Whatever difficulties there might be in knowing whether death has occurred, it must be kept in mind that there is only one real phenomenon of death.

Nonetheless, as the terms “Brain Death” and “Brain Stem Death” are most commonly used, we have adopted it throughout this paper, though for clarity's sake, we have enclosed these terms in quotation marks. For those who accept any of the various definitions of “brain death” this is appropriate as these terms misleadingly imply that there are two different types of death, the death of the brain and the death of the person, whereas to the proponents of these criteria such is not the case, as there is only one moment of death. For those who do not accept these criteria, the quotation marks would indicate this phenomenon neither necessarily concludes the death of the brain, nor necessarily indicates the death of the person.

Sec. II: Medical Introduction

The Clinical Presentation and Pathophysiology of Total Brain Failure⁴

Before we engage the central question—Is a human being diagnosed with total brain failure dead?—we need to recount some of the more salient aspects of the clinical presentation and underlying pathophysiology of total brain failure. We begin with a description of the functions of circulation and respiration. Under the usual circumstances, the presence of these processes in a body is a sure sign of life. Understanding how breathing and circulation operate in normal circumstances will illuminate why this is so—why, that is, these are aptly called “vital functions.”

In patients who are diagnosed with total brain failure and, on this basis, are declared dead, these vital functions are dependent on external support from the ventilator. To defenders of today’s neurological standard, this means that these apparent signs of life are, in fact, artifacts of the technological support—they conceal the fact that death has already occurred. To evaluate this argument, the basic facts of technological support for these vital functions must be made clear. This clarity can only be achieved if the interrelatedness of the three body systems involved in breathing and circulation is understood. The three systems are:

1. The heart and circulatory system.
2. The lungs and respiratory system.
3. The central nervous system and, in particular, the centers involved in breathing.

After describing these vital functions and clarifying the nature of technological support for these functions, we explain why a patient who has lost the ability to breathe is not necessarily dead. In the subsequent section, we turn to the pathophysiology of total brain failure, that is, to the processes that unfold with this condition at the level of brain tissues and cells.

1. The “Vital Functions” in Health and After Brain Injury

The pathophysiological processes that eventually end in the mortal condition we are calling total brain failure engage not only the central nervous system but also the circulatory and respiratory systems of the human body. In this account of these systems and the vital functions that they make possible (and that eventually fail with total brain failure) we begin with respiration.

A. Oxygen In, Carbon Dioxide Out

Under usual circumstances, an adult human being inhales and exhales twelve to twenty times per minute. Each inhalation is effected by a contraction of muscles in the thorax or chest cavity, the most important of which is the diaphragm. These muscles can collectively be termed the “muscles of respiration”.

⁴ This entire subsection, including most footnotes, comprises pgs 21-29 of the President’s Council report entitled *Issues in the Determination of Death* (Public Domain, no copyright, accessible at <http://www.bioethics.gov/reports/death/index.html>), slightly edited for style.

The contraction of these muscles causes the lungs to expand and the body to take in air from the surrounding atmosphere. This air enters through the nose and mouth and travels to the lungs via the respiratory tree. At the terminal end of this tree with its multiple branches are the pulmonary alveoli, which are small spherical air sacs surrounded by tiny blood vessels. The walls of the alveoli are extremely thin, formed to facilitate diffusion of gases between the sacs and the blood vessels.

To inhale is to bring air to these terminal nodes where oxygen from the atmospheric air is able to move into the blood. Oxygen is critical to the ongoing metabolic work of the millions of cells in the body. Without a continuous supply of oxygen, brought into the body through inhalations and transported to the tissues by circulating blood, the body's cells, tissues, and organs would cease to function.

Exhaling is just as critical to the life of a human being or other animal organism. When the cells of the body perform their work—metabolic and otherwise—they produce waste products, notably carbon dioxide (CO₂). This CO₂ is carried away from the cells by the blood that returns to the heart and lungs. In the same act of exchange by diffusion that brings oxygen in at the alveoli, CO₂ diffuses out from blood to the alveolar cavity. From the alveolar cavity, air that is now rich in CO₂ moves back up the respiratory tree and out into the surrounding atmosphere. This expulsion or exhalation of carbon dioxide is brought about, mechanically, by the relaxation of the muscles of respiration and the subsequent shrinking of the cavities of the lungs. Again, it is vital to the organism as a whole that this removal of CO₂ from the body be continually accomplished.

Thus, inhaling and exhaling, -the process of breathing-, facilitate a critical exchange between the organism and the world. To put it in the simplest of terms: the exchange is one of oxygen in and carbon dioxide out, and the purpose of the exchange is to fuel the cellular processes of metabolism with oxygen and to rid the body of the waste products of those processes. The mechanism of the exchange includes the contraction and the relaxation of the muscles of respiration and the diffusion of gases into the blood across the lining of the tiny alveoli.

B. The Role of the Central Nervous System and Ventilator Support

For many years it was not well understood that the Central Nervous System (CNS), comprising the brain and the spinal cord, plays a crucial role in maintaining an organism's vital functions. To understand that role, one might begin by pondering how it is that the muscles of respiration "know" when to contract. Does this contraction happen in an automatic, periodic fashion or does it happen upon receiving some signal from the body's CNS? The answer is this: the contraction of the muscles of respiration is brought about by a signal sent from the respiratory center of the CNS. That center is located at the base of the brainstem,⁵ in a structure known as the medulla

⁵ The functions that depend on the brainstem are central to the basic work of the organism as a whole. In addition to the brainstem's (particularly, the medulla's) involvement in breathing, it is also critical to an organism's conscious life. One part of the brainstem, known as the "reticular activating system," is essential for maintaining a state of wakefulness, which is a prerequisite for any of the activities associated with consciousness. (based on Controversies, pg. 31)

oblongata (The anatomical references in this and the ensuing discussion are illustrated in Illustration 1.)

When sensors in the respiratory center detect a relatively high level of CO_2 in the blood, a signal is sent to the muscles of respiration, spurring them to contract. Each of the twelve to twenty inhalations per minute, then, is the body's response to the accumulation of the waste products of metabolism; for life to continue, the CO_2 must be expelled and new oxygen must be brought in.

Other parts of the CNS can also be involved in signaling the muscles of respiration to contract so that oxygen-rich air will be inhaled. In what is called "conscious breathing," a human being can deliberately control the depth and pace of breathing, during which time other parts of the brain are involved in controlling the muscles of respiration. Changes in the depth and pace of breathing can also be brought about without conscious effort: the rate of breathing will quicken, for example, during physical exercise or in response to a "fight or flight" situation. These changes are directed by changing metabolic needs (current or anticipated) throughout the body's organs and tissues.

For the purposes of our inquiry, the crucial fact about the mechanics of breathing is this: When the brainstem's respiratory centers are incapacitated, the organism will not make or display any respiratory effort. The chest will remain absolutely still and the body's need for oxygen will go unanswered. If the death of the organism is to be prevented, some external "driver" of the breathing process—a mechanical ventilator—must be used.⁶

The mechanical ventilator works by increasing and decreasing the pressure in the lung cavities so that oxygen-rich atmospheric air will travel down and CO_2 -rich air will travel back up the respiratory tree. Gas exchange in the lungs is then possible, although an external substitute for the patient's own respiratory effort cannot manage this exchange (and thus maintain ideal blood-gas levels) as effectively as the body free of injury can. The exchange of gases that the ventilator sustains will be of no benefit to the patient unless the blood is kept moving as well. Incoming oxygen must be transported to the tissues that need it, and accumulating carbon dioxide must be removed to the lungs for expulsion from the body. In other words, the ventilator will help the patient only if another vital organ system is operational, comprising the heart, working as a pump, and the conveying network of arteries, veins, and capillaries.

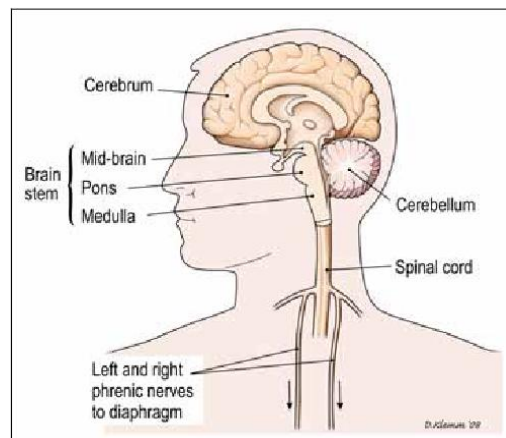


Illustration 1: The Brain and Brainstem, with Major Divisions

⁶ There is another sort of situation in which a ventilator is required to support vital functions: The respiratory center in the brain can be functional while the muscles of respiration are paralyzed. This was the case for polio patients in the mid-20th century who were the first wide-scale recipients of ventilatory treatment in the form of cumbersome iron lung machines (i.e., negative pressure ventilators). Here, one could say, the CNS signal to take action is being sent, but it is falling on "deaf ears." Alternatively, one may say that the drive to breathe is present but the ability to turn that drive into action is absent. For many polio patients, the paralysis subsided when the virus was defeated and, as a result, normal breathing resumed.

C. Circulation of Blood

The action of the circulatory system is analogous to the action of the external respiratory system.⁷ Each system acts to maintain the continuous motion of a fluid substance that fuels the metabolic work of the organism as a whole. The fluid substance is air in respiration and blood in circulation. Furthermore, in both respiration and circulation, the mechanism of action is the periodic contraction of muscle—the heart muscle in circulation, the muscles of respiration in breathing.⁸

There are important differences, however, between the circulatory work of moving blood and the respiratory work of moving air in the body. ... There is no part of the CNS that is absolutely indispensable for heart contractions in the way that the respiratory center in the brainstem is absolutely indispensable for the muscular contractions involved in breathing.

Again, in healthy circumstances, stimuli from the CNS will alter the rate and strength of contractions: the heart rate will change in response to danger, excitement, or other stimuli. But even when there is no stimulus whatsoever from the CNS, the heart can continue to beat. This property of the heart, known as its “inherent rhythmicity,” has been demonstrated dramatically by experiments in which an animal’s heart is taken out of its body and stimulated to begin beating rhythmically again. It is also demonstrated by the heartbeat of an embryo, which begins before the CNS has developed.

D. Ventilator Support and Determination of Death

What, then, does it mean to say that the ventilator “externally supports the vital functions of breathing and circulation?” It means that, in the place of the organism’s effort to breathe, stimulated by the respiratory centers of the CNS, an external device moves the lungs and facilitates the inflow and outflow of needed air. This allows the heart muscle to continue to function, because its cells, like all other cells in the body, need oxygen to stay alive.

2. Total Brain Failure: Pathophysiology⁹

In this part we turn to the question, what events in the brain and body of the patient lead to total brain failure?

A diagnosis of total brain failure involves a judgment that the brainstem and the structures above it have been destroyed and therefore have lost the capacity to function ever again. In most cases,

⁷ The external respiratory system is the part of the respiratory system that engages the organism with the outside world. By contrast, the internal respiratory system functions at the cellular level to assimilate oxygen from the bloodstream and deposit CO₂ back into the bloodstream.

⁸ This description is incomplete insofar as it suggests that the heart is the only active part of the circulatory system. In fact, the vessels of circulation, far from being rigid “plumbing lines” that passively convey blood pumped by the heart, are living tissues that undergo changes (some driven by the CNS) to maintain an appropriate blood pressure. Patients who are receiving ventilatory support often must also be given drugs (e.g., pressors) to help keep the blood pressure in a healthy range.

⁹ This entire subsection, including footnotes, comprises pgs 35-38 of the President's Council report, considerably edited; paragraphs referring to other sections of that paper, as well as non medical and non halachic arguments for the acceptance of the neurological standard were left out.

however, this destruction did not accompany the initial injury to the brain but instead came about through a self-perpetuating cascade of events—events that progressively damaged more and more tissue and finally destroyed the brainstem.

The source of this self-perpetuating cascade of damaging events is the rigidity of the skull, which, after injury, can cause elevated pressure in the cranial vault that holds and usually protects the brain. Consider the three most common injuries leading to total brain failure. These are (1) head trauma (sustained, for example, in an automobile accident or as a result of a gunshot wound), (2) cerebrovascular accident (i.e., “stroke”), and (3) cerebral anoxia (deprivation of oxygen) secondary to cardiac arrest. These three different causes have a common effect: severe damage to the cells comprising the tissues of the brain, that is, to the neurons and the cellular networks that they form. This damage leads, in turn, to edema, the abnormal accumulation of fluid. With little or no space in which to expand, the swelling brain suffers steady increases in intracranial pressure (ICP). Elevated ICP prevents oxygen-laden blood from making its way up and into the cranial cavity and thus deprives brain tissues of essential nutrients. This, in turn, leads to additional damage, which leads to more edema and swelling. Neurologist Alan Shewmon describes the result:

A vicious cycle is established in which decreasing cerebral perfusion and increasing cerebral edema reinforce one another until blood no longer enters the cranial cavity and the brain herniates through the tentorium and foramen magnum.¹⁰

The herniation that Shewmon refers to here can crush the brainstem, leading to the functional losses that are revealed by the examination for “brain death.”

...

When death is declared based on the currently accepted neurological standard, the self-perpetuating cascade of events in the brain following the initial injury is said to have run its full course. “Running its full course,” in this context, means that “total” destruction of the brain has occurred due to infarction or lack of blood supply—hence, “brain death” is also more precisely called “total brain infarction.”

Bedside tests that establish loss of all brainstem reflexes can show that the destructive storm has indeed run its course, because the brainstem is often the last structure to be compromised in this process. Confirmatory tests and, in particular, various sorts of angiography (measurements of cranial blood flow) can be very useful in confirming that the gross infarction that is required for a diagnosis of total brain failure has actually occurred.¹¹

At this point, it is important to take note of some qualifications regarding the word “total” in the context of total brain failure. ... The destructive storm that leads to “total” brain failure can leave certain areas of the brain intact. Again, from the description provided by Shewmon:

It should be mentioned that the self-destruction of the brain is not complete. Islands of sick but not totally necrosed brain tissue sometimes remain, presumably due to

¹⁰ D. A. Shewmon, “Recovery from ‘Brain Death’: A Neurologist’s Apologia,” *Linacre Q* 64, no. 1 (1997): 30-96.

¹¹ Bernat, “Irreversibility as a Prerequisite,” 161-7.

inhomogeneities of intracranial pressure and/or blood supply from extracranial collateral vessels.¹²

... [However,] the physiological facts are not so simple,¹³ [as can be seen in the next subsection].

Continuing Brain and Other Functions after the Onset of “Brain Death”

In some cases, the preserved tissue in a body with total brain failure actually does support certain isolated functions of the brain. Most notably, some patients with total brain failure do not exhibit the condition known as “diabetes insipidus.” This condition develops when a hormone known as ADH (anti-diuretic hormone) is not released by the posterior pituitary¹⁴. The absence of diabetes insipidus suggests that the “dead” brain is continuing to secrete the hormone; thus, at least with regard to this one function, the brain remains functional. It is therefore a fair criticism of the neurological standard, as enshrined in the UDDA, that “all functions of the entire brain, including the brainstem” are not, in fact, always irreversibly lost when the diagnosis is made.¹⁵ (Controversies pg. 38)

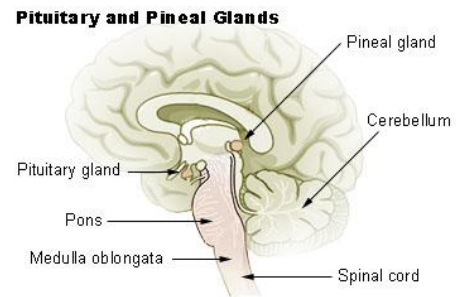


Illustration 2: The Medulla Oblongata is visibly part of the brain stem (Source: National Cancer Institute; free from all copyrights)

The autonomic nervous system, hemodynamic response and stable blood pressure may all be maintained in the “brain dead” patient. Furthermore, in many patients, the hypothalamus continues to function after the diagnosis of “brain death,” serving both neurological and endocrinal functions. While a few have suggested that the hypothalamus be considered external and separate from the brain, standard medical texts¹⁶ clearly indicate that the hypothalamus is indeed a part of the brain.¹⁷

¹² Shewmon, “Neurologist’s Apologia,” 40.

¹³ See, for instance, A. Halevy and B. Brody, “Brain Death: Reconciling Definitions, Criteria, and Tests,” *Ann Intern Med* 119, no. 6 (1993): 519-25.

¹⁴ While the posterior pituitary is generally not considered as part of the brain, this function is significant in any event as the hypothalamic-pituitary system is controlled by the Hypothalamus, clearly within the contours of the brain.

¹⁵ Researchers suspect that function in the posterior pituitary is preserved partly because its (extradural) arterial source is distinct from that which feeds other tissue of the brain. The damage that is due to the rise in intracranial pressure, which leads to total brain failure, can spare these extradural arteries so that a portion of pituitary is preserved. For discussion of this point, see E. F. Wijdicks and J. L. Atkinson, “Pathophysiologic Responses to Brain Death,” in *Brain Death*, ed. E. F. Wijdicks (Philadelphia: Lippincott Williams & Wilkins, 2001).

¹⁶ Textbook of Medical Physiology, Arthur Guyton, 699-705. Functional Human Anatomy, James E. Crouch, 316-322, these were selected as random examples and not because they express a unique point of view, which they do not do.

¹⁷ Also see “Brain Death: Revisiting the Rabbinic Opinions in Light of Current Medical Knowledge” by Joshua Kunin, *Tradition*, Winter 2004. Also see “Death, dying and donation: organ transplantation and the diagnosis of death,” by IH Kerridge et al, *Journal of Medical Ethics* 2002; 28:89-94, “Brain Failure and Brain Death; Introduction,” by David Crippen, *Critical Care*, as well as numerous articles by Dr. Robert Truog of Harvard Medical School, all of which question the diagnosis of “brain death” as death. It should be noted that these medical

In a considerable fraction of cases where physical examination is diagnostic of “brain death” and confirmatory tests are performed, electrical activity of the brain is detected via EEG (indicating cellular activity) or blood flow is noticeable on radionuclide examinations. Indeed, the continued function of the hypothalamus would also indicate that there is some blood flow to the brain.

Concretely, approximately 20% of “brain dead” patients still show brain activity on EEG tests (and this does not include those whose level of brain activity is below the threshold the test is designed to detect).¹⁸ Blood flow to the brain has been found in more than 10% of patients diagnosed with “brain death.”¹⁹

The continued existence of organized activities in the bodies of “brain dead” patients has been an ongoing topic of study in some medical circles. A recent scholarly conference of the President’s Council on Bioethics spoke of a few isolated cases where nutrition and oxygen were provided for a number of years; such patients continued to heal wounds, underwent proportional growth, and in one case went through puberty.²⁰ Recent articles in the *New England Journal of Medicine*²¹ wrote of some of the same phenomenon, as well as the cases that often make the news, namely when a pregnant woman is given life support following “brain death,” enabling the baby to come to term, continuing the pregnancy for weeks and even months.²²

As Dr. Robert D. Truog of Harvard has pointed out,²³ the body of a brain dead person far more closely resembles that of a living person than that of a dead one.

authors (other than Kunin) do not reject organ donation from such patients, but question the standards used to permit the permit the removal of organs, viewing “brain death” as an arbitrary standard.

¹⁸ Clinical Neurophysiology of Infancy, Childhood and Adolescence, GL Holmes, MD, HR Jones Jr., MD and SL Moshe, MD, 2006, chapter 20 “The Diagnosis of Brain Death,” pages 404, 409. This information is also based on communications with Dr. Leon Zacharowicz.

¹⁹ “Radionuclide Studies in the Determination of Brain Death: Criteria, Concepts and Controversies,” Lionel S. Zuckier, MD and Johanna Kolano, *Seminars in Nuclear Medicine*, Vol. 38, No. 4, July 2008. “Evidence-based guideline update: Determining brain death in adults” (Report of the Quality Standards Subcommittee of the American Academy of Neurology), Eelco FM Wijdicks, MD, PhD, Panayiotis N Varelas, MD, PhD, Gary S Gronseth, MD, David M Greer, MD, *Neurology*, 2010;74:1911-1988, this last article reports studies that indicated even higher percentages of patients having cerebral blood flow following clinical diagnosis of brain death.

²⁰ Conference, November 9, 2008, session 5, Response to the Council’s White Paper.

²¹ *New England Journal of Medicine*, August 14, 2008.

²² It should be noted that these authors and speakers do not reject the use of these people as organ donors, but do question the “random” way in which it has been decided to declare them as dead. Some of these authors would seem to prefer to declare patients as dead based on their lack of “personhood” which would then include far more patients in the available pool of donors, including many permanently comatose and PVS patients.

²³ Truog RD, Robinson WM. “Role of brain death and the dead-donor rule in the ethics of organ transplantation,” *Critical Care Medicine* 2003; 31(9): 2391-2396 and “Brain Death-Too Flawed to Endure, Too Ingrained to Abandon” *The Journal of Law, Medicine and Ethics* (2007), (35) 2 273-281.

Other Medical Conditions that Result in Permanent Cessation of Spontaneous Respiration

Supporters of the “brain death” standard often assert the soundness of that standard despite its absence from all early halachic sources by explaining that “brain death” is simply an affirmation of the onset of permanent loss of spontaneous respiration, which in turn, it is claimed, is *the* ultimate standard for the establishment of the onset of death (the second of the three Rabbinic approaches mentioned at the end of Section I, Introduction, subsection “Definition of Terms”). However, besides “brain death,” there are a number of medical conditions, with which the patient may remain quite alive, even conscious, and that may nonetheless cause permanent cessation of spontaneous respiration.

For example, certain accidents, which caused nerve damage affecting the function of the lungs, (such as a partial or complete rupture of the vagus or phrenic nerves, see illustration 3), paralytic polio, and end stage ALS may all bring about the permanent cessation of spontaneous respiration, despite the fact that the patient would remain unquestionably alive in each of these cases.

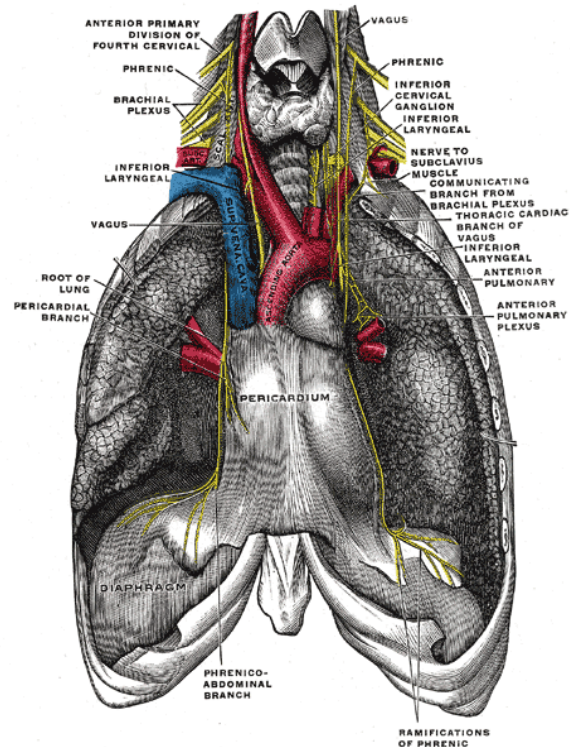


Illustration 3: The Vagus and phrenic nerves in their context (Source: Gray's Anatomy; copyright expired)

The President's Council on Bioethics acknowledged this problem and stated:

... an animal cannot be considered dead simply because it has lost the ability to breathe spontaneously. Even if the animal has lost that capacity, other vital capacities might still be present. For example, patients with spinal cord injuries may be permanently apneic or unable to breathe without ventilatory support and yet retain full or partial possession of their conscious faculties. Just as much as striving to breathe, signs of consciousness are incontrovertible evidence that a living organism, a patient, is alive. (Controversies, pg. 64)

Additional Concerns with the Implementation of the “Brain Stem” Standard

A recent review of fifty leading medical centers revealed a significant and disturbing range of standards and practices regarding the determination of “brain death”²⁴. This was true in terms of

²⁴ *Neurology*, “Variability of brain death determination guidelines in leading US neurologic institutions”, January 22, 2008, 70:284—289, David M Greer, Panayiotis N Verelas, Shamael Haque, Eelco FM Wijidicks, where

preclinical testing, where 11 different minimum temperatures were utilized to determine that a patient was not hypothermic, an absence of shock was required by 71% of these institutions but the definition of shock varied widely, and 24% did not have guidelines for an acceptable blood pressure. In terms of the clinical examinations, while apnea testing was required in almost all of the hospitals, again the standard varied significantly, so much so that in conclusion the authors wrote “Of concern was the variability in the area of apnea testing, an area with the greatest possibility for inaccuracies, indeterminate testing and potentially even danger to the patient” and “A similar variability of brain death determination guidelines in children has been noted as well, including the improper performance of apnea testing and the use of ancillary testing.” Also noted was the “surprisingly low rate of involvement of neurologists or neurosurgeons in the determination.”

An even stronger warning was issued in a recent issue of *The Lancet*²⁵ which concluded

Clinicians do not always follow an established policy or provide appropriate documentation. Surveys or chart reviews showed that doctors sometimes failed to document specifics of clinical examinations, omitted criteria demanded by local policy, or did not exclude pre-existing confounding circumstances. Of particular relevance to this discussion of apnoea testing, Earnest and colleagues surveyed 129 neurologists and noted that 12% did not do apnoea testing during brain-death examinations at all and 65% observed the patient off the ventilator for 3 min or less.

As diagnosis of brain death and the processes and procedures for its confirmation have become more frequent in the intensive-care unit, clinical practice must not be permitted to become careless, abbreviated or casual. The many reported cases of brain death diagnosed inappropriately or incorrectly and the history of rescued patients cautions that commonplace is not a reason for carelessness.

Supporters of the “brain stem” standard maintain that cerebral blood flow tests conclusively show that the patient has been “virtually decapitated.” Both angiography and radionuclide angiography may be utilized to measure cranial blood flow. The former test represents the gold standard for evaluating intracranial blood flow, however it is somewhat invasive, requires transporting the patient to the angiography suite, and potentially exposes the patient’s organs to toxic contrast material (which can have deleterious effects on transplantation). Radionuclide angiography is non-toxic and can potentially be performed at the bedside (if a portable gamma-camera is available); its disadvantage is that posterior fossa circulation is not evaluated. These tests (along with the less established Doppler flow examination of intracranial circulation) are considered by the medical community as appropriate blood flow examinations, but this is not to say that they necessarily have meaning in Halacha. However, such blood flow tests are only performed in a small minority of cases, as the machinery is only found in more sophisticated urban hospitals, it is quite expensive to do such testing and is generally not deemed necessary.²⁶

the lack of consistency both in standards and practice in major American medical centers in the determination of “brain death” is studied.

²⁵ *The Lancet*, “Certification of brain death: take care,” David J Powner, vol. 373, issue 9675, pages 1587-1589, 9 May 2009.

²⁶ These tests are done in approximately 1% of patients diagnosed as “brain dead”. Information provided by Dr. Lionel Zuckier, Department of Radiology, UMDNJ. Regarding the lack of consistency in standards for

In general, confirmatory examinations are often not performed prior to declaring a patient “brain dead.” Which additional tests are performed and what standards are applied before organs are removed also has significant variation. Accordingly, even the proponents of accepting the “brain death” criteria in Halacha would need to ascertain that adequate and appropriate testing had been done.

Certain Poskim, most notably Rav Moshe Feinstein and Rav Shlomo Zalman Auerbach, seem to have expressed a willingness to accept *some kind* of a neurological standard whereby the destruction of the brain would have advanced far beyond what is required for the diagnosis of “brain death.” Rav Moshe Feinstein wrote of a brain that is נרקב לגמרי, which may refer to a brain that has undergone lysis, meaning the breaking down of cell walls and concomitant liquefaction of the brain. Rav Shlomo Zalman Auerbach referred to the total necrosis of the brain.

However, absent an autopsy, there is no foolproof way to ascertain that lysis has, in fact, occurred, and no way to diagnose the actual necrosis of the brain tissue.²⁷ Proponents of the “brain death” standard have tended to assume that necrosis and lysis will have occurred by the time organs are removed for transplants or a patient is removed from machinery. While the fact that it is *hoped* that this process has taken place may give comfort, but this seems to avoid the question of the criteria of “brain death” altogether, as no diagnosis of actual total death of the brain cells will have taken place.

Furthermore, recent research has shown that, despite earlier claims to the contrary, early post mortem research seemed to indicate that in the large majority (94%) of “brain dead” patients significant necrosis had taken place, however, in the period of 12 to 36 hours following “brain death,” which is the time when organs are generally removed for transplant, “total brain necrosis is not observed” in the significant majority of patients.²⁸ So, while this does not affect the theoretical concept of “brain death,” it is most significant for its practical implementation if indeed these are the rulings of these two great Poskim.²⁹

The recent case of Zack Dunlap from Oklahoma,³⁰ while quite unique, casts a giant shadow over this entire discussion. While confidential medical records have not been released to the public at this time, there are only a limited number of possible explanations for this event in which a man was declared brain dead, was being readied for use as an organ donor and subsequently has had a full recovery. If the proper confirmatory tests were performed, they were either administered incorrectly or the results were read incorrectly; a far less likely possibility is that the proper tests were administered and read correctly, still giving incorrect information. Thirdly, there exists the

declaring “brain death” see *Neurology*, “Variability of brain death determination guidelines in leading US neurologic institutions”, January 22, 2008, 70:284-289, David M Greer, Panayiotis N Verelas, Shamael Haque, Eelco FM Wijdicks. More details are provided in footnote #202.

²⁷ *Neurology*, “Neuropathology of brain death in the modern transplant era,” Eelco FM Wijdicks & Eric A Pfeifer, 2008: 70; 1234-1237.

²⁸ Ibid.

²⁹ See studies at <http://www.unifesp.br/dneuro.brd2.htm> and <http://www.neurology.org/cgi/content/abstract/54/2/362>.

³⁰ “Family calls mistaken death of son ‘a miracle’.” Associated Press, 11/21/2007, available at

http://www.tulsaworld.com/news/article.aspx?articleID=071121_1_OKLAH53557; “Pronounced dead, man takes a ‘miraculous’ turn.” MSNBC, March 24, 2008, available at <http://today.msnbc.msn.com/id/2377583/>

very real possibility that the tests used were not the tests generally advocated by neurologists and transplant surgeons. From the limited information that has become public, indications point to this last possibility, namely, that inappropriate testing was done to declare him “brain dead.” Regardless of which scenario or combination of scenarios took place, the fact is that a transplant team was on the verge of removing the organs from a man who today is alive and well.

Sec. III: Analysis of **פדה**. /Yoma 85a

This passage of the **גמרא** is generally considered the most significant source for understanding or establishing the definition of death in the eyes of the Torah. All opinions seem to find support in the words of this **סוגיא**. It is our purpose in these pages to address the various readings that are offered for this passage, to follow through the logical implications of these possibilities, to point out the strengths and weaknesses of each of these possibilities in terms of how they address the textual issues, and to attempt to find how the words of **הו"ל** can apply to our modern medical understandings. However, this paper will conclude that it is highly debatable whether any conclusion regarding the validity of the “brain death” standard for death can be gleaned from it.

In describing a collapsed building and the rescue mission that follows, two opinions are quoted regarding the point at which the rescue mission may (or when it is on Shabbos must) be abandoned. The first opinion says that one should check until the nose (for respiration), the second says until the heart (this is the standard current **גירסא** – text – of the **גמרא** and was the text of **רש"י**; the **רי"ף** and the **רא"ש** do not have the word **לבו**, and their text says **טיבורו**, the navel, instead). The **גמרא** then suggests that perhaps these two opinions would parallel the debate about from where the fetus is formed³¹ (or at which point life is first noticed in the developing fetus), the head or the navel. The **גמרא** finds this less than fully compelling, stating that even **אבא שאול**, who holds that the fetus is formed from the navel, can still hold that for the matter of saving a life one should check the nose, as this is the primary location of life (**עיקר חיותא**), based on the words of the verse **כל אשר נשמת רוח חיים באפיו**. The fact that the **גמרא** suggests that even **אבא שאול** can accept that respiration is a sign to look for to determine death, in no way weakens the other opinion, which looks for cardiac activity to ascertain life, as this point of the **גמרא** is merely suggesting that there need not be a correlation between the formation of life and the determination of its end.

[It should be noted, as pointed out in (**יר"ד ה"ב ס"י קמ"ו**), **אגרות משה**, that these words are not quoted to suggest that the nose is in any way a respiratory organ or responsible for life, rather, it simply states that whenever life does exist it can be detected through an examination of nasal respiration.]

פפא then adds that the above mentioned debate was only stated in cases in which the chest was first uncovered, but if the head was found first, all agree that checking the nose is sufficient, again based on the words **כל אשר נשמת רוח חיים באפיו**.

A cursory glance at this passage could well give the impression that the nose (i.e. respiration) is the singular sign of life. However, **רש"י** (**שם ד"ה הכי גרסינן**) clearly rejects this possibility as he writes:

דמר אמר בלבו יש להבחין אם יש בו חיות שנשמתו דופקת שם , ומר אמר עד חוטמו דזימנין דאין חיותו ניכר בלבו וניכר בחוטמו .

³¹ It should be noted that in a developing embryo the heartbeat begins before the Central Nervous System has developed.

According to רש"י the מחלוקת is not a debate, not even discussion, as to what the key sign of life is, but rather deals with the question – regarding someone on a rescue mission – at what point one may (or on Shabbos, must) cease his efforts. All seem to agree that either the lack of heartbeat or the lack of respiration would indicate death; the only question at hand is whether the seeming absence of detectable heartbeat under the circumstances of the collapsed building would be sufficient to indicate death, as it is possible that the heartbeat is so faint as to avoid detection completely, but there is no such fear when checking the nose for signs of respiration. Accordingly, the use of the words of the פסוק of "כל אשר" by no means teaches that respiration is the determinant of life, but only that if life is present it can be positively detected at the nose, and there is no fear of error.

It would then seem that רב פפא has come to teach that once respiration cannot be detected in the nose it is clear that a heartbeat will not be detected. [It should be noted that in the scenario spoken of in this passage there is every reason to assume that respiration and cardiac activity were either both present or both absent, as prior to the advent of artificial respiration the time gap between these two was negligible and there is no explicit mention in the Talmud that one continues after the other has stopped. Today this may no longer be true due to artificial respiration. The status of artificial respiration in Halacha, of course, is one of the key questions that ultimately must be addressed in dealing with determination of death.]

Consequently, גירסת רש"י the analogy in the גמרא is difficult to understand: what does the question of detecting signs of life in the heart or nose have to do with whether a fetus is first formed at the navel or the head? The גמרא acknowledges this problem and offers an explanation as to why this seeming “mismatch” was used. He writes that since the perception of life (הרגש היוני) cannot be detected at the navel, but only in the heart, perforce the גמרא used heart as the analogous part of the body.³²

Given our medical knowledge, however, a far simpler solution exists: in a developing embryo the heartbeat begins well before the central nervous system or respiration begins to function. Accordingly, the opinion that dictates checking for a heartbeat, does so because this is the first of the vital systems to develop, and just as life with cardiac activity (absent respiratory or central nervous activity) is considered life at its inception, so too is it at its conclusion.³³

As mentioned above, the רי"ף and the רא"ש apparently had another גירסת, which does not say heart (לבו) but rather navel (טיבורו), which also resolves the problem רב יוסף ענגיל raised, as the גמרא would be matching up “nose” (חוטמו) with “head” (ראשו) and “navel” (טיבורו) with “navel” (טיבורו).

While on the surface, the analogy seems sounder according to the latter גירסת, this approach introduces a whole new set of questions. Firstly, when the גמרא says חוטמו it never for a moment meant to suggest that the nose itself was the source or cause of respiration, only a reliable

³² There are those who have suggested that in some cases cardiac activity might be more readily detected below the level of the ribcage, closer to the navel. See Physical Diagnosis, J. Prior, J. Silberstein & J. Stang, 6th edition, 1981, page 273, and בענין מות מוחי וקביעת זמן המות בהלכה הרב יהודה דוד בלייך, אור המזרח תשרי תשמ"ח כרך ל"ו חוברת א' דף 78.

³³ The possible difficulty of this approach is that it is perhaps projecting knowledge into the world of חז"ל, which may not have been available yet.

location to detect it. If so, the connection between “nose” and “head” does not seem to fit since the respiration in fact comes from the lungs.

Secondly, if the goal of the גמרא is for the two discussions to match up exactly, the חוטם is not any better a match with ראש than לב had been with טיבור (as seen in the text used in the other version of the גמרא of רש"י), since both are specific locations on a larger part of the body. [Of course, it may be suggested that this connection between the nose and the head is a perfect fit, as respiration is in fact controlled by the brain. However, to suggest this as a valid interpretation of the גמרא is highly questionable as it would put words in the mouths of חז"ל that cannot be there; this medical understanding was simply not known until recently. Both Rav Moshe Feinstein³⁴ and Rav Shlomo Zalman Auerbach³⁵ rejected this idea precisely because it lacked sources in classical rabbinic literature. Additionally, there is no indication that brain was intended by the mention of head.]

Thirdly, and perhaps most significantly, if according to this alternative text of the גמרא the two possible locations for the determination of death are טיבור (navel) or חוטמו (nostril), what criteria of life and death is that opinion in the גמרא, which argues for the navel as the sign of death, working with? If it literally means navel, we would have no trouble understanding this passage on a metaphysical level (that the cessation of life should be determined at the same location where it first develops in a fetus), but it would be most difficult to understand on a physical level.

Some have suggested that טיבור does not literally refer to the navel, but to the entire abdomen, where the movements of the diaphragm³⁶ would show the presence of respiratory activity. While this reading of the text is certainly reasonable from the medical perspective, it reintroduces the very problem that this גירסא purported to remove, namely that the two statements referring to טיבור in the גמרא turn out not to be analogous, after all, as the word טיבור has now taken on two completely different meanings. In one case טיבור would refer to the navel – the source of life and nourishment for the embryo –, while in the other case it would refer to the abdomen. Accordingly, the analogy between embryonic formation and death would again be unclear.

It is important to note that according to this reading of the גמרא, at no time was the פסוק of כל אשר רוח חיים באפיו used to prove that respiration is the determinant of life; the only lesson it teaches is about where respiration might best be detected, namely the nose. Accordingly, the citation of the פסוק might be understood as an אסמכתא and not a דרשה גמורה. While according to this approach, the גמרא would seem to assume that respiration is the singular determining sign of life; this does not necessarily indicate a preference of respiratory criteria over cardiac criteria for several reasons. Firstly, respiration was clearly easier to check for and secondly, lacking modern life support these two phenomena would essentially cease together. Indeed, the entire purpose of this סוגיא in יומא is to offer practical direction to those involved in a rescue from a collapsed building, and not to address the deeper issue of what actually marks the end of life.

[The purpose of these last five paragraphs is not to dismiss as impossible the idea that this גמרא may support the lack of respiration as the singular sign of life, but to show that even within the

³⁴ אגרות משה י"ד ח"ב ס' קמ"ו

³⁵ נשמת אברהם חי"ד ס' קנ"ז ס"ק ו' and in Nishmat Avraham (English Language Edition) vol. II pg. 308

³⁶ See Section II, “Medical Introduction”; subsection A., “Oxygen In, Carbon Dioxide Out”, for a description of the muscles involved in respiration.

of גירסא, it is neither simple, nor obvious, and certainly not the only, nor necessarily the most compelling explanation. Additionally, even if respiration is the sign to look for, that does not mean it is necessarily the cause of life or death, only one of its indicators.]

This approach is clearly taken by Rav Moshe Feinstein (אגרות משה יו"ד ח"ב סי' קמ"ו) where he writes:

וכוונת הקרא דנשמת רוח חיים באפיו לא על עצם רוח החיים שזה ודאי ליכא בחוטם, אלא הרוח חיים שאנו רואים איכא באפיו אף שלא נראה באברים הגדולים אברי התנועה, וגם אחר שלא ניכר גם בדפיקת הלב ולא ניכר בטבור, שלכן נמצא שלענין פקוח הגל בשבת תלוי רק בחוטם. וליכא שום סתירה מהזוהר שמביא החכ"צ שהלב הוא נותן החיות והכח לכל האברים ומהרמב"ם בספר מורה נבוכים.

In these words he has explicitly stated that respiration is not at all the determinant of life, but since there is no bodily movement and cardiac activity cannot be observed, the פסוק is instructing us to look at the nose for respiration since it is observable. But he is clearly following the approach that the determinant of life is the heart and not respiration both with these words and in the fact that he endeavors to align his words with the מורה נבוכים and חכם צבי.

That in fact the difference between the two versions of the text of יומא פה is substantive, should not be automatically assumed. The מאירי (יומא שם), who does not reveal which text was in his גמרא, writes in his commentary, אע"פ שבדק עד טיבורו או לבו. Similarly the טור (או"ח סי' שכ"ט) writes "it does not matter whether he reached the head first or the legs first," again glossing over the possible differences between "heart" and "navel". This idea was also expressed by Rav Moshe Feinstein (אגרות משה יו"ד ח"ב סי' קמ"ו) who repeatedly grouped "heart" and "navel" together as the very same opinion (וחד תנא סובר עד לבו ועד טיבורו).

The תלמוד ירושלמי also speaks of טיבורו (and not לבו), but in fact may be most unlike the בבלי. After stating the same two opinions that are found in the initial statement of the בבלי (according to the גירסא of the רי"ף & the רא"ש), namely, עד טיבורו אמר עד חוטמו וחורנה אמר עד חוטמו וחרנה אמר עד חוטמו, it then states, מאן דאמר עד חוטמו בהוה קיים, ומאן דאמר עד טיבורו בהוה דהוה רבון. There is no suggestion (unlike in the בבלי) that this relationship may in fact not be correct. It rather simply states the reason for each of the two opinions as a matter of fact.

The קרבן העדה explains that קיים would mean the location of continued existence (life), while רבון would mean the place from which his life is formed; this would then be similar to the idea that the בבלי suggested and immediately questioned. According to this explanation, it is possible that even though the nose (respiration) is the location of "existence", death might only be determined by inspecting the navel; a concept that we do not well understand as it seems to go well beyond the idea of looking for respiration in the abdomen. It might well be making a more metaphysical statement, that even though respiration is the location of continued existence, death can only be determined at the site of life's origins. However, if one would follow the other opinion of the ירושלמי, that the nose – the location of קיים – is to be checked to determine life or the lack thereof, it may perhaps support the idea that respiration, and respiration alone, would be the determining sign of life.

A strikingly different perspective is offered by the author of פני משה, who explains that in fact these two opinions do not argue, but are speaking of two significantly different circumstances:

כלומר ולא פליגי דמ"ד עד חוטמו מיירי בהוא דהוה קיים כלומר שחזק וקשה הוא ונרגש
בבדיקת חוטמו אם יש בו איזה חיות, ומד"א עד טיבורו בהוא דהוה רכין שהוא רך
כשממששין בו ואינו נרגש בחוטמו ובדקין אותו עד טיבורו שאפשר שעוד ירגישו בו חיות

The word קיים indicates that the body is “hard and stiff” (or perhaps “firm and strong”) and respiration, or the lack thereof, can readily be detected at the nose, while the word רכון (the פני משה had a slightly different text of the ירושלמי, with the word רכון instead of רבון) is speaking of a case where the body is soft, and even though life is not detected at the nose, the body (navel area) should be examined for (other) signs of life. The implications of this explanation are possibly most significant. Either it is saying that given certain circumstances life can best (or only) be detected in the abdominal area and not at the nose. Or alternatively, it would seem to significantly downplay the role of respiration in determining life, as it may be saying that there are other factors that may need to be checked for (or that are more readily found in certain difficult cases).

If this is indeed the correct interpretation of the פני משה, then the words of this explanation seem almost the opposite of the above mentioned comments of רש"י (who said that in difficult cases the easiest way to check for life would be to check for respiration in the nostrils), but the larger implications may in fact be quite similar, namely, that factors other than respiration may be critical in the determination of life and death.

Conclusions

I. According to רש"י:

- a) Both heart and respiration are signs of life.
- b) The גמרא does not seem to address a case of heartbeat without respiration or respiration without heartbeat.
- c) The גמרא certainly does not address a case of a beating heart and artificial respiration.
- d) Textual difficulties might exist in understanding the analogy between the determination of death and the beginning of life, although based on today's medical knowledge, this comparison seems quite plausible, as cardiac activity appears in a developing embryo well before either the respiratory system or the central nervous system begin to function.

II. According to the רי"ף & רא"ש of גירסא:

- a) Respiration seems to be the singular sign of life, or at least the only one needed to ascertain death.
- b) Even according to this version of the text that views respiration as the singular sign of life to be looked for, the question still remains as to whether that means that respiration is the definition of life or just a sign that life exists or not. [The practical ramification of this question is whether the lack of (spontaneous) respiration can be contradicted by other signs of life, such as heartbeat. Rav Moshe Feinstein has explained this to mean that respiration is a sure sign of life but it is not the determinant of life (as life is determined by cardiac activity).]
- c) The גמרא does not address cases of heart beat without respiration, and certainly does not address cases of a beating heart with artificial respiration.
- d) Textual difficulties may still remain in understanding the analogy between the determination of death and the beginning of life, if both locations are to be looked at to observe respiration. The analogy is easier to understand on a metaphysical level than on a physical level.

III. According to the ירושלמי:

- a) According to the קרבן העדה, the מחלוקת seems to be about whether death is determined physiologically, or metaphysically, the latter meaning that it might only be determined at the location where life first begins. The more physical understanding suggested does indeed focus on respiration.
- b) According to the פני משה, checking the nose for respiration is only one of the possible ways to ascertain death, but not necessarily the best or clearest way. An abdominal examination might provide more clarity in certain difficult cases. It is unclear whether that abdominal examination ought to indicate respiration or some other sign of life.
- c) It would be most difficult to utilize the ירושלמי as a source saying that respiration alone is the determining measure of life or death. This is true as even if respiration is the criterion spoken of, it by no means would preclude cardiac activity which was essentially simultaneous and harder to detect. Additionally – and unlike the בבלי which does seem to favor one approach – the ירושלמי does not offer conclusions or rulings as to which opinion to follow.

Sec. IV: אהלות א:ו, חולין כא, Ohalos 1:6, Chulin 21a

Decapitation, Virtual Decapitation & “Brain Death”

הותזו ראשיהן אע"פ שמפרכסין טמאים in משנה אהלות which quotes from the חולין כא in סוגיא תוס' כזנב הלטאה שמפרכסת. Inherent in these words is that there exist certain bodily movements, which can sometimes continue after the onset of death, and that such movements are by definition of no significance in the determination of life and death, being spasmodic and not indicative of continuing life.

This passage of the גמרא seems to provide one of the strongest supports for recognizing “brain death” as indicating death. The reasoning being, that if all connections between the brain and the body have ceased, particularly when the brain has fully undergone lysis [meaning the process of disintegration or dissolution of its cells], such a case would be no different than a case of decapitation³⁷. While this passage does not specifically address the case of a beating heart, this approach points out that a beating heart following decapitation would not signify life any more than other bodily movements. Accordingly, it states, that following “brain death” even a beating heart should be of no Halachic significance.

The following quote, from an article coauthored by Rav Moshe Tendler and Dr. Fred Rosner³⁸, traces the origins of this approach:

Based on the position of Rav Moshe Feinstein cited above³⁹, Rabbi M. Tendler, one of the authors of the present essay, has introduced the concept of physiologic decapitation as an acceptable definition of death in Judaism even if cardiac function has not ceased. The thesis is: that absent heartbeat or pulse was not considered a significant factor in ascertaining death in any early religious source⁴⁰. Furthermore, the scientific fact that cellular death does not occur at the same time as the death of the human being is well recognized in the earliest biblical sources. The twitching of a lizard's amputated tail or the death throes of a decapitated man were never considered residual life but simply manifestations of cellular life that continued after death of the entire organism has occurred⁴¹. In the situation of the decapitated state,

³⁷ אגרות משה יו"ד ח"ג סי' קל"ב

³⁸ *Journal of Halacha and Contemporary Society*, No. XVII, Spring 1989, pages 14-31.

³⁹ *Ibid*, pages 22-24. In those sources quoted he focuses on permanent loss of spontaneous respiration as the criterion of death. Also see our chapter on the Rulings of Rav Moshe Feinstein, where additional sources and perspectives are provided indicating, as is acknowledged in Rav Tendler's and Dr. Rosner's article, that there are other (perhaps more compelling) ways to understand the writings and rulings of Rav Feinstein.

⁴⁰ רש"י (יומא פה. ד"ה הכי גרסינן אמר רב פפא מחלוקת) who writes (מלמטה למעלה) דמר אמר בלבו יש להבחין אם יש בו חיות שנשמתו דופקת שם ומר אמר עד חוטמו דזימנין דאין חיות ניכר בלבו וניכר בחוטמו. Similarly, the (שו"ת חיו"ד סי' של"ח) also rules that cessation of heartbeat, along with lack of respiration and bodily movement are all necessary to indicate death.

⁴¹ While in the case of the lizard's tail this does seem to be a correct conclusion, there may be good reason not to extend this concept further as חולין קכא seems to accept the possibility that the determination of death may be significantly more complex than ordinarily assumed, being a process with a finite beginning and end. It is for this reason that for the laws of אבר מן החי an animal could be considered dead, but not yet be subject to the laws of טומאת מודה חזקיה דאינו מטמא כנבילה ואע"פ שמותרת לבני נח דיצאה מכלל חיה ולכלל מתה לא באה, רש"י (שם ד"ה א"ל) as, נבילות

of the brain (a phenomenon that may require further deterioration, beyond “brain death”) into a preexisting halachic category that corresponds to death. Indeed, these two great פוסקים seemed – at least in theory – willing to accept that following complete destruction of the brain, the brain (and the entire head) is effectively absent.

It is our goal in this section to analyze this and the other cases mentioned in חולין כא, to contrast this סוגיא to that of יומא פה, and to clarify, both from a medical and Halachic perspective, if this concept of “physiological decapitation” is indeed as compelling as may appear at first glance.

פירוש המשניות להרמב"ם לאהלות פ"א משנה ו'

Rav Nachum Rabinovitch⁴⁶ found significant support for the concept of “brain death” in the words of the פירוש המשנה להרמב"ם. In these words the רמב"ם writes אמנם יראה זה לקצת מיני בעלי חיים, כאשר לא יהיה הכח המתנועע מתפשט בכלל אברים משורש והתחלה אחת, אבל תהיה מתפרדת בכל הגוף, thus showing that the רמב"ם distinguishes between organized, integrated movement, and random or isolated movements. Rav Rabinovitch writes:

It would seem that the halakhic definition of death is based on two criteria...2) The body can no longer be restored to function as an organism, although individual limbs or organs may still exhibit muscular spasms.

Very specifically addressing the פירוש המשנה להרמב"ם he writes:

Maimonides explains that the organism is no longer considered to be alive ‘when the power of locomotion that is spread throughout the limbs does not originate in one centre, but is independently spread throughout the body.’ It follows that if the restoration of central control is feasible, the commandment to save life applies.

He understands this commentary of the רמב"ם to refer to movement directed by the brain, as opposed to residual spasmodic movements. Based on this explanation he concluded that all bodily activity that is not directed by the brain should be considered as spasmodic and insignificant for the determination of life or death.

While there is little doubt that on a practical level this distinction was valid in prior generations, how it should be applied in light of modern medicine requires clarification as there may well be a large range of scenarios that lay between these two extremes. In his comments on the משנה, the רמב"ם does not mention the brain, instead he uses the language משורש והתחלה אחת (“one source”). Accordingly,⁴⁷ the question would remain as to whether the definition in the פירוש המשניות would exclude any bodily movements or functions not directed by the brain, or is the language of

⁴⁶ Tradition, Spring 1968, “What is the Halacha for Organ Transplants?” vol. 9, no. 4 pages 20-27.

⁴⁷ See Dr. Edward Reichman, “The Halachic Definition of Death in Light of Medical History”, *The Torah U'Madda Journal*, vol. 4, 1993. On page 159 of that article, Dr. Reichman addresses the medical works of the רמב"ם in which on one hand the רמב"ם seems to indicate that the heart is the single main organ that sends power to all other organs, the brain included. He then indicates that with this power the brain then gives sensation and movement to other organs. While Dr. Reichman implies that this medical text of the רמב"ם should lead us to interpret his comments on the משנה to specifically indicate movement directed by the brain (even though his medical texts are not generally used in Halachic analysis), as indicated in the body of our text, such a reading might be out of context and ignore key phrases of that same commentary.

מציאות merely excluding disorganized/spasmodic activities. In other words, in מתפרדת בכל הגוף there seem to be three categories of bodily movement and activity: 1) organized activities directed by the brain, 2) random isolated activities such as the twitching of a severed tail and 3) organized bodily or systemic movements/activities that are not necessarily directed by the brain, but are also neither disorganized nor spasmodic. Clearly the first group of activities does indicate life, while the משנה has directly dismissed the second category as not indicating life; the question at hand is what about the third category, namely organized systems or activities that continue to function absent any instructions from the brain.

According to Rav Hershel Schachter,⁴⁸ it is clear from the words of the רמב"ם that he meant that organized movements or activities that are spread throughout the body are indicative of life, regardless of whether such movements are directed by the brain or not.

There is an additional and perhaps far broader reaching question, which also needs to be addressed regarding the very comparison of the case of the severed lizard's tail to "brain death". The spasmodic movements that the משנה dismisses as signs of life are typically of a short term nature, while the extended life of a "brain dead" patient can often continue for days, weeks, even months and in rare cases, years. This distinction is noted by the תוס' רי"ד (שכתב קלו. ד"ה ומ"ס מת) in explaining the status of a בן ה' about which there is a debate whether he is to be considered as חי or מת. In his explanation of the opinion that considers him as dead⁴⁹ the תוס' רי"ד clearly states that the distinction between the various cases mentioned in חולין כא (in which all movement is considered spasmodic) and that of the בן ה', is that the movement of the בן ה' can continue for an extended time of up to 29 days, which by definition must indicate life.

The explanation of the תוס' רי"ד would preclude the designation of continued bodily functions in "brain dead" patient as being merely spasmodic and of no Halachic significance since they often continue for an extended period of time. In such cases, he says that the extended functioning of the body is ipso facto a sign of life.⁵⁰ This explanation would in no way contradict the status of the lizard's tail, as that case is speaking of short term bodily movements only. This would also seem to eliminate any comparisons to cases of beheadings, where signs of life may continue for some time, as this is also only short term activity.

Finally, the following information, perhaps most significant to Rav Rabinovitch's approach, must be noted. Rav Rabinovitch published his arguments in 1968 when it was generally assumed that all integrative body functions ceased with "brain stem death". [This same assumption is also part of Rav Tendler's article quoted earlier in this section.] This assumption, which was accepted for a number of years, is no longer considered valid, as the President's Council on Bioethics acknowledged in its paper (December 2008), "Controversies in the

⁴⁸ בספר בעקבי הצאן סי' ל"ו אות י"ב

⁴⁹ וז"ל "ומר סבר מת הוא פ' ולא בר חבורה הוא אבל מיהא לא מטמא עד שימות ולא דמי לנטל ירך וחלל שלה ולנשברה פירקת ורוב בשר עמה ולעשאה גיסטרא שהן כנבלה ומטמאין אע"פ שמפרכסין דההוא פירכוס דבן שמנה כיון שיכול לחיות עד כ"ט יום השוב פירכוס ולא מטמא עד שימות." וברור שכוונתו במש"כ בסוף דבריו "השוב פירכוס" היינו שפירכוס זה השוב כחיים ואינו דומה לשאר מקרים של פירכוס.

⁵⁰ While it must be acknowledged that the level of functioning in a בן ה' is clearly far higher than that of a "brain dead" patient and as such the comparison might be questioned, at the same it is also true that a "brain dead" patient is on a far higher level of function than all of the cases from חולין which the תוס' רי"ד used in his comparison. Accordingly, this significant question which is raised by the words of the תוס' רי"ד cannot be dismissed merely based on higher or lower level of function.

Determination of Death” A White Paper by the President’s Council on Bioethics”, which states (pages 60) “But reliance on the concept of ‘integration’ is abandoned and with it the false assumption that the brain is the integrator of vital functions.” Earlier (page 39) the report had noted that this misunderstanding had been a key factor in the acceptance of the “brain death” criteria. “The point deserves emphasis because of the history of the debate about the neurological standard in the United States. In that debate, certain exaggerated claims have been made about the ‘loss of somatic integration’ that occurs in a body with a destroyed brain. A good example of this can be found in a very influential paper published in 1981 by James Bernat, Charles Culver and Bernard Gert.” The paper continues by bluntly stating “The claim that the body of a patient diagnosed with ‘whole brain death’ is a mere ‘group of artificially maintained subsystems’ was repeated often enough to become established in the United States as the standard rationale for equating brain failure with human death: patients with this condition are dead because the systems of the body do not work together in an integrated way.”

If the רמב"ם is only excluding disorganized/spasmodic actions, a “brain dead” patient, aside from continued circulatory activity, continues organized hormonal, digestive and reproductive activities as well,⁵¹ about which it would certainly not be correct to say that they are מתפרדת בכל גוף.⁵²

Thus, this approach that attempted to connect a possible reading of the פירוש המשנה רמב"ם with this medically incorrect information, can only be viewed as historically interesting, but can no longer be part of the Halachic process.

נשברה מפרקת ורוב בשר עמה

The discussion in חולין כא begins by stating that if the neck and most of the flesh surrounding it have been severed, such a person is deemed dead. Unlike the case of Eli HaKohen, the גמרא states that a person would not be considered dead with either of these two injuries, but only if both had taken place. While there is not any specific mention in the גמרא of continuing bodily movements, nevertheless, רש"י⁵³ in his comments on this case writes that this is a sign of death even if there is continued isolated movement. Similarly, the רמב"ם, when defining death in the context of the טומאה imparted by a human corpse, groups all of the cases of this סוגיא together and writes that even though there may be continued movements, they are of no significance following this and all of the other catastrophic injuries mentioned.⁵⁴

Based on these words it would certainly seem that each of these various injuries are indicative of death.

⁵¹ See Section II, “Medical Introduction”, subsection “Continuing Brain and Other Functions after the Onset of Brain Death”.

⁵² However, the most basic interpretation of these words would certainly seem to exclude *isolated* cellular activity in the body as being indicative of life.

⁵³ חולין כא. ד"ה מטמא באוהל

⁵⁴ הל' טומאת מת (פ"א הל' ט"ו) "המת אינו מטמא עד שתצא נפשו אפילו מגוייד או גוסס... נשברה מפרקתו ורוב בשרה עמה או שנקרע כדג מגבו או שהותו ראשו או שנחלק לשני חלקים בבטנו הרי זה מטמא אע"פ שעדיין מפרקף באחד מאיבריו"

However, the רמב"ם when writing⁵⁵ about the כשרות of animals suffering from the very same injuries, labels them as נבילה מחיים (this is also the ruling of the שו"ע⁵⁶). The very significant question that emerges from these words is what does it mean to label an animal מחיים? Does this mean that we consider this animal completely dead and the use of the word מחיים is only to indicate that while it may appear to be alive on account of some movement, it is in fact dead; or is this a unique status in הלכה whereby the animal is in fact alive but not subject to שחיטה (and some how it is not the same as a טריפה where שחיטה is of significance). The resolution of this question could well have significant bearing on our larger issues. For almost all of the cases that the רמב"ם wrote about, it would make good sense to explain that the animal is fully dead. However the case of נקובת הושט בכל שהוא, where the animal is clearly alive (and a man with even a greater injury in that same location is capable of presenting his wife with a גט⁵⁷) does not fit the above explanation. Accordingly, assuming that the words נבילה מחיים which have been used by the רמב"ם have the same meaning throughout this one הלכה, it would seem that the רמב"ם is considering these cases as still alive and not yet dead.

Acknowledging that this is indeed what the words of the רמב"ם and the שו"ע seem to be saying, the ש"ך questioned how this in fact can be so⁵⁸. While a number of אחרונים do offer alternative explanations, it need be noted that their explanations focus on the idea that שחיטה cannot work to permit this animal⁵⁹ or on the distinction between איסור נבילה and טומאת נבילה⁶⁰; while they did not explicitly address the fact that the רמב"ם did group these various injuries together with נקובת הושט בכל שהוא, which is clearly not yet dead, they nonetheless all surely seem to agree that a נבילה מחיים is very much alive.

Based on these difficulties in the רמב"ם, it remains unclear whether the cases mentioned in חולין can serve to support the concept of "brain death", as he may not consider these animals to be dead.

The language of the רמב"ם in the laws⁶¹ of טומאת נבילה where following this injury of נשברה מפרקת ורוב בשר עמה may also have this same ambiguity, as he again writes that the animal has the status of נבילה even though it is still alive.

This ambiguity may possibly even be seen in the language of the גמרא itself, which does not label these people or animals who have suffered the various injuries as dead, rather speaking of their טומאה, which is not necessarily indicative of life or death.⁶² A similar perspective might be

⁵⁵ הל' שחיטה (פ"ג הל' י"ט) "וכן אם נשברה מפרקת ורוב בשר עמה או שנקרעה מגבה כדג או שנפסק רוב הקנה או שניקב הושט בכל שהוא במקום הראוי לשחיטה הרי זו נבילה מחיים ואין השחיטה מועילה בה"

⁵⁶ יו"ד סי' ל"ג סע' ג'

⁵⁷ גיטין ע': "אמר רב יהודה אמר שמואל שחט בו שנים או רוב שנים ורמז ואמר כתבו גט לאשתי הרי אלו יכתבו ויתנו"

⁵⁸ ש"ך (יו"ד סי' ל"ג ס"ק ד')

⁵⁹ נקודות הכסף (שם) כתב "ורצה לומר דאע"פ ששחטה אח"כ הוי נבילה ולא שתטמא מחיים"

⁶⁰ בדגול מרבבה (שם) כתב "אמנם בס"ת ש"יפה כוון לחלק בין איסור נבילה שיש בו מחיים ובין טומאת נבילה שאין בו מחיים עד

שתמות ע"ש ובה מסולק כל השנות העל הרמב"ם." וע"ע בערוך השלחן (שם סע' ח').

⁶¹ הלכות אבות הטומאות (פ"ב הל' א') "חלק בהמה לשנים או שניטלה ירך וחלל שלה הרי זו נבילה ומטמאה במשא ובמגע אע"פ

שהיא עדיין בחיים. וכן אם קרע מגבה או שנשברה מפרקת ורוב בשר עמה הרי זו כנבילה לכל דבר"

⁶² While it would be generally assumed that these forms of טומאה are only relevant following death, however, as seen from חולין קכא the various forms of טומאה that are generally associated with death do not necessarily set in at the same time. See footnote #41 for more details.

gleaned from the words of רש"י⁶³ where he describes a case of גיסטרא with the words הרי הם כמתים, possibly meaning “they are like they are dead” even though they are not actually dead.

Understanding יומא פה in light of חולין כא

Nevertheless, given that the גמרא compares this case of נשברה מפרקתו to that of Eli HaKohen, about whom it is written⁶⁴ ותשבר מפרקתו וימות, a strong case could still be made that each or some of these cases spoken of in חולין be considered dead and may be instructive about the question of “brain death”. If this assumption is to be made, then these cases must be understood in relation to יומא פה which seems to indicate that cessation of respiration is the ultimate indicator of death. Accordingly, it must be asked about the cases in חולין, was the person breathing or not? If he was breathing then he should be considered alive, and if not, he would be dead. Given the fact that חולין כא does not bring up the question of whether respiration can be detected, it would seem that the most logical explanation would be that respiration was not checked for. It is for this reason that the גמרא needs to stress that the person who has had these various injuries is considered dead, otherwise why look at the nature of the wound if he had clearly ceased breathing⁶⁵. This would seem to be consistent with the context of the סוגיא which is not speaking of a rescue mission or of a person who is otherwise actively involved with the body, but deals with a person who has encountered a possibly dead body by standing under the same roof (or perhaps by some other means of contact) and this person now needs to clarify his status for הלכות טומאה. It would appear that the most logical explanation is that the examination has taken place from a distance where respiration could not be detected (even were it present), and the גמרא still rules that if נשברה מפרקת ורוב בשר עמה has taken place it is safe to say the he is dead without any further examination.

In this case and the several others that follow, it is due to these obvious catastrophic injuries that a person is deemed dead without further examination. This is most unlike the case of יומא, where an external examination does not reveal such obvious catastrophic injuries that would automatically indicate death; instead, specific functions such as heartbeat, movement and respiration need be checked for⁶⁶.

⁶³ חולין כא. ד"ה טמאים

⁶⁴ שמואל א' פ"ד פסוק י"ה

⁶⁵ The רדב"ז (הל' שחיטה פ"ג הל' י"ט) seems to allow for the possibility that this severely injured animal is still breathing as he writes שכתב ראינו הרוגי מלכות שחותכין אותן לשנים ועדיין יש בו חיות כי הראיה נשאר בחלק העליון. If this idea is to be applied to this סוגיא it would seem to indicate that חולין כא is speaking of נבילה מחיים meaning that the animal is not yet dead. If so, then this סוגיא would not shed light on the question of “brain death”, but at this point we are considering the more basic understanding of this גמרא that these injuries are all indicative of death.

⁶⁶ It is worth noting that Rav Shlomo Zalman Auerbach (מנחת שלמה תנינא סי' פ"ו), among others, has written that despite the fact that יומא פה states that respiration is the primary criteria to look for, in many cases this would no longer apply in the same way that it did in the time of הז"ל, so that a person found below rubble and not breathing should still be rescued and provided with all of the assistance that modern medicine has to offer. A significant question, likely well beyond the purview of this paper, is whether any or all of the various injuries spoken of by חולין כא should also be regarded or treated differently in light of modern medicine and the many innovations it has brought. This issue is also seen in גיטין ע where it says גט כתבו ואמר רבז ואמר רבז even though it is most difficult today to picture a man with such injuries having the capacity to instruct that a גט be written and delivered to his wife. A similar question arises from the case where either נשברה or רוב בשר עמה took place but not both, as it is most difficult to envision any person surviving such a brutal

As explained in the section on *יומא פה* above, ⁶⁷רש"י views the cessation of respiration as indicative of death only in a person who is *מוטל כאבן*, lying motionless. There is no talk in the text of that *גמרא*, the *רש"י* or other *ראשונים* as to which types of movement might be deemed significant and which not. In contrast, the *אהלות* in *משנה* followed by the *סוגיא* in *הולין* (as explained by *רש"י* and the *רמב"ם*), seems to reject the significance of any movement not only following decapitation, but after any of these other catastrophic injuries as well, labeling it as *כזב* *הלטאה שמפרכסת*, like the spasmodic movements of a lizard's tail which has been severed from the body.

It would seem that since *יומא פה* is addressing the issue of *פיקוח נפש*, including cases which may only possibly be included in that Halachic category, such as *ספק חי*, it therefore views all movement as possible signs of life, considering them sufficient justification to continue the rescue mission even on Shabbos.

However, this is only one part of the picture, as it is also true that in *אהלות* and *הולין* the injuries are obviously fatal, so that any movement is of no meaning, while in *יומא* where the effect of the injuries is not so clear, any movement is sufficient reason to assume that life may still be present. Accordingly, this would then lead to the conclusion that movement is to be considered insignificant only if death has already been determined; if doubts remain then movement would be a most compelling reason to assume that life may be present.⁶⁸

Given that there has likely been no examination to determine respiration in each of the cases in *הולין*, the question needs to be addressed; why each of these injuries was deemed to be sure signs that death had occurred? It could certainly be argued that they knew that such injuries were immediately fatal simply based on experience or empirical observations. At the same time it should be noted that all of these cases seem to share a common characteristic, namely, that major portions of the body have been ripped away or cut open, causing the patient to bleed to death in a very brief time. It is likely that this extreme loss of blood was the acknowledged cause of death. This would be supported by the inclusion in *הולין כא* of the cases of *עשאה גיסטרא* & *קרעו כדג*,⁶⁹ neither of which necessarily have any relation to a severed head or spinal cord,⁷⁰ each being a case of major cuts across the length or width of the body, rapidly leading to major blood loss. In such cases even if the heart was found to be beating (as can happen following certain traumatic deaths), it would be of no significance as the blood has poured out of the body and is not

הולין assault, especially prior to the many advances of modern medicine. About this last case Rav Elyashiv employed *הולין* *גמרא* where it states *בדרי סמא חייא* *גמירי דאי*, indicating that there was a tradition that certain grievous injuries could still be cured. Following this logic, aside from the difficult task of clarifying what the various injuries spoken of in *הולין כא* would mean in our vocabulary, there also exists the possibility that injuries deemed fatal back then may not be so today. [Alternatively, it is also possible that following either *נשברה מפרקתו* or *בשר עמה* the person is still alive but due to his severe injury will not survive for long.]

⁶⁷ *יומא פה*. ד"ה עד היכן הוא בודק

⁶⁸ The *שו"ת ח"ו סי' קכ"ד* wrote that cessation of respiration is only taken as a sign of death when it is not contradicted by other signs of life, such as heartbeat or motion. It is striking to note that decapitation and the other catastrophic injuries spoken of in *הולין כא* indicate death even when these same signs are present. This dichotomy might lend support to the idea that the *דרשה* of *יומא פה* is an *אסמכתא* and not a full *דרשה*.

⁶⁹ *רש"י* (שם ד"ה *עשאה גיסטרא*) "שחתכה לרחבה או בצוארה כולו או בשדרה עד החלל כל דבר החלוק לשנים קרוי גיסטרא"

⁷⁰ This distinction is pointed out by *תוס' (הולין לב: ד"ה וליחשוב)* who states that *בשר עמה* by definition must include a severed spinal cord, while *גיסטרא* does not.

circulating.⁷¹ This is most unlike a case of “brain death” where major blood loss does not typically occur, and the circulatory system remains intact; and while it is true that blood flow to the head is greatly reduced, in general the circulatory system remains functional.⁷²

The Relevance on היותו ראשו for the “Brain Death” Standard

Given that the circulatory system continues to function, the question needs to be asked, for those opinions that use this source in חולין to support the acceptance of “brain death”: in which way is “brain death” to be equated to the cases of חולין?⁷³ Since it cannot be due to the obvious catastrophic bleeding injury, and – as demonstrated above and also mentioned by both Rav Moshe Feinstein and Rav Shlomo Zalman Auerbach – it also cannot be due to lack of brain function, perforce it can only be due to the complete and utter destruction of the brain. In the 1970’s, when much of this information was initially provided and much of the Halachic literature on this topic was written, the post mortem examinations did indeed *seem* to indicate that in the large majority (94%) of “brain dead” patients significant necrosis had taken place.⁷⁴ It should be noted that the above mentioned תשובה of Rav Feinstein is dated 1976 and openly states that his

⁷¹ This idea has also been written by Rav J. David Bleich in the Hebrew language section of “Time of Death in Jewish Law (קביעת זמן המות לאור ההלכה דף כג) and in “Contemporary Halakhic Problems Vol. IV” (page 319, note 4) where he states “that the severe loss of blood as a result of decapitation renders all residual motion or movement of limbs or organs, including the heart, spasmodic in nature. Thus the essential and intrinsic criterion of life is motion that is vital in nature; cardiac activity which, as will be shown, is the primary indicator of life, is simply one form, and indeed the primary example, of vital motion. Thus, Ohalot 1:6 and Yoma 85a do not represent two disjunctive definitions of death but reflect one unitary definition, *viz.*, vital motion in any organ or limb. Yoma 85a defines death as the total absence of motion in any organ of the body as manifested by cessation of both respiratory and cardiac activity; Ohalot 1:6 defines death as the cessation of integrated, vital motion that attends the copious loss of blood accompanying decapitation.” A similar idea was expressed by Rav Hershel Schachter in his ספר בעקבי הצאן כי הדם הוא הגנפּש (סלי ל”ו) based on the words

While it is true that prior to William Harvey (17th century) that the concept of circulation was not properly understood, and as such one might question this entire approach, however, even lacking our modern medical knowledge, it would certainly seem that they had sufficient understanding to address this question properly. It is clear from sources in the גמרא (שבת קכט, ועוד) that the lethal effects of excessive loss of blood were clearly observed and acknowledged by ר”ל. Similarly, it is also clear that they understood that all blood in the body is connected (with the few exceptions where they spoke of the concept of דם מפקד פקיד, as seen in שבת קלג ה, ז, כתובות ה, ז, שבת קלג ה, ז). Accordingly, even if a full understand the workings of the circulatory system did not exist, nevertheless, heartbeat or other movement following excessive loss of blood would not have been taken as signs of life (although, as noted there is no mention in any of these sources of heartbeat continuing following these injuries).

⁷² This case is in sharp distinction to the “sheep experiment” in which the major blood vessels to the head were “tied” to prevent bleeding to death prior to severing the head from the body. While it would be quite difficult to suggest that in the case of this decapitated sheep that the Halacha would consider it to be alive, at the same time it hardly would be an appropriate case to demonstrate the ability of a body to function without a head since the sheep were categorically unlike all other such cases (of beheadings) since these sheep lacked a gaping bleeding injury. This is one of the reasons that many leading פוסקים found this experiment to be of no Halachic significance.

⁷³ There are those who suggest that since the circulation is only continuing due to the artificial respiration, by definition such circulation should be of no significance in Halacha. This premise is far from simple, as an accident victim who has permanently lost the power of spontaneous respiration due to a severed nerve would not be considered dead, even if he were comatose (but not “brain dead”).

⁷⁴ *Neurology*, “Neuropathology of brain death in the modern transplant era”, Eelco F.M. Wijdicks & Eric A. Pfeifer, 2008; 70; 1234-1237. Even given this data, the remaining 6% who did not fit this profile would still need to be accounted for, and it is likely that had this information been made known to Rav Feinstein who addressed this matter at the time, that such rulings would not have been issued even in the hypothetical manner in which he wrote.

acceptance of the concept is based on its medical accuracy. However, that information does not seem to be accurate based on the knowledge and circumstances of today.

As documented in the Medical Introduction (Section II),⁷⁵ current medical knowledge no longer sustains the notion that by the time “brain death” is diagnosed, all brain activity has ceased; in fact certain brain functions may remain, evidence of living cells is often found and in some cases measurable blood flow to the brain continues. Perhaps most significantly, recent studies have shown that in the period of 12 to 36 hours following “brain death”, which is the time when organs are generally removed for transplant, “total brain necrosis is not observed” in the significant majority of patients. Accordingly, these studies conclude that proving “brain death” even with post mortem examinations is generally not possible.⁷⁶

Rav Shlomo Moshe Amar has suggested that the case of נשברה מפרקת ורוב בשר עמה seems to support “brain death” from two different perspectives.⁷⁷ He explains that the case of מפרקת would indicate a severed spinal cord, which would thereby end any contact between the brain and the body, causing respiration to cease. The aspect of רוב בשר עמה would indicate that all major blood vessels going from the body to the brain have been severed, thereby cutting off blood flow to the brain causing “brain death.”

However, it would seem that this creative explanation Rav Amar offers in fact introduces far more significant questions than it answers. Firstly, as previously mentioned, the רמב"ם ruled this to be a case of נבילה מחיים, meaning that according to the Halacha the person may not yet be dead.⁷⁸ Secondly and more significantly, if one of these injuries would indicate permanent loss of respiration and the other would indicate “brain death”, it is hard to understand why the גמרא would specifically require that both criteria be met when either would seem to be satisfactory to indicate death.

This issue seems similar to a debate that took place between Rav Yosef Shalom Elyashiv and Rav Zalman Nechemia Goldberg in reference to this סוגיא.⁷⁹ When addressing the discussion in חולין as to whether הוחזו ראשיהן is only to be taken literally or would also include the somewhat lesser injury of כהבדלת עולת העוף, Rav Elyashiv explains that even were one to consider the complete destruction of the brain as equivalent to a severed spinal cord (כחוט השדרה שנפסק) that would not be enough for the גמרא to consider this as הוחזו ראשו, since a severed spinal cord is clearly not considered as sufficient to declare a person dead according to this סוגיא without other significant accompanying injuries (רוב בשר עמה) as well.⁸⁰

Rav Goldberg questioned this point since the whole topic of defining הוחזו ראשיהן in this way was relegated by the רמב"ם to the realm of טומאת שרצים and not as a definition of death for humans, so it would not be appropriate to apply animal standards to humans.

⁷⁵ See Section II, “Medical Introduction”; subsection “Continuing Brain Functions”.

⁷⁶ *Neurology*, “Neuropathology of brain death in the modern transplant era”, Eelco F.M. Wijdicks & Eric A. Pfeifer, 2008; 70; 1234-1237.

⁷⁷ Public Shiur presented in Yerushalayim, March 2008.

⁷⁸ הלכות שחיטה פ"ג הל' י"ט

⁷⁹ Printed in (החוג לרפואה והלכה, אדר ראשון תשס"ח) see footnote 2 of that article for full details of their debate.

⁸⁰ *Ibid*, page 3.

Writing on behalf of his father-in-law, Rav Yitzchak Zylberstein explained that even though the רמב"ם did incorporate this idea in the context of טומאת שרצים, nevertheless, given that ריש לקיש ruled and his opinion was codified by the רמב"ם that anything less than full anatomic decapitation does not qualify as death for these animals, assumedly that should be of significance for humans as well, as this clearly would seem to preclude physiologic “brain death” as indicating death even in an animal.⁸¹

Secondly, and perhaps more significantly, he points out that even regarding humans, the רמב"ם did write that נשברה מפרקת ורוב בשר עמה would qualify as death, but נשברה מפרקת without רוב בשר would not, even though a severed spinal cord (in the neck) would seem to fit the criteria of “brain death” as well.⁸² This, he writes would certainly indicate that cessation of neural contact between the brain and the body does not necessarily mean that death has occurred.

[Following all of this discussion, there remains perhaps an even more significant question: how are these particular injuries spoken of in the גמרא to be understood? Can it truly be said that based on our understanding of medicine and the reasonable interpretations available in this passage, compelling evidence can be adduced in support for the concept of “brain death?” This lingering question would seem to pertain not just to the case of נשברה מפרקת ורוב בשר עמה, but given all of the above discussion, also to the proof brought from the case of decapitation.

This question is highlighted by the case of גיטין ע: where it speaks of the ability of an injured and dying man to instruct the writing of a גט for his wife to avoid the need for יבום. That גמרא speaks of a man who has had רוב שנים או רוב שנים and is still capable of directing the writing of a גט for his wife, either verbally or with body motions. It is most difficult for us to imagine that in this scenario, he would not only be alive, but retain the mental and physical competency needed to issue such instructions. Without drawing specific conclusions, it is safe to say that practical application of many of these types of cases may be difficult, if not impossible for us today.⁸³]

Rav Shlomo Zalman Auerbach

As mentioned above, conceptually, Rav Auerbach did accept the idea of הותו ראשו as applying to a fully dead brain. This concept of a “dead brain” that he said that he could accept as demonstrating Halachic death and hence permitting the removal of organs for transplant, would

⁸¹ This point is also seen in the ruling of the (הל' שחיטה פ"ג הל' י"ט) that נשברה מפרקתה ורוב בשר עמה is נבילה מחיים and not necessarily fully dead.

⁸² To be more precise, the severing of the spinal cord (in the neck) is not at all synonymous with “brain death”, as the blood supply to the brain generally remains intact; however, the brain stem and respiratory center can no longer initiate respiration. Provided with artificial respiration, this injured patient can live for an extended time, as seen in the case of the late Christopher Reeves. Prior to the advent of modern medicine, the victim of such an accident would rapidly die since he would be unable to breathe, yet the גמרא says that with such an injury a person is not to be deemed as dead.

While it would tempting to explain that when the גמרא spoke of נשברה מפרקתו it was speaking of a lesser injury and is not addressing the modern question at hand, however it is clear from (י"ד סי' כ"ד ס"ק ב') who wrote that ברוב המפרקת נ"ל העיקר תלוי בחוט... שחיות תלוי בו clearly stating that this does not just refer to the spinal column but primarily to the spinal cord itself.

⁸³ See footnote #66 (in this section) that addresses some of these same issues.

entail the death of literally each and every cell of the brain.⁸⁴ However, as he himself wrote during his lifetime,⁸⁵ such is not the case, since “brain death” as commonly diagnosed following even the most stringent criteria refers to cessation of organized brain functions and not necessarily to cellular death.⁸⁶ Furthermore, once Rav Auerbach was made aware that certain functions do continue in many cases (such as the function of the Hypothalamus⁸⁷), even following a full “Harvard criteria” diagnosis of “brain death”, he rejected the concept even more strongly, stating emphatically that this concept of decapitation does not exist in reality. There have been attempts to use Rav Auerbach’s name as supporting organ donation based on “brain death;” such attempts at best are a significant misunderstanding of his teachings. Similarly, even were the lack of Hypothalamic function to be demonstrated in a given patient this would not change his ruling as these functions only added evidence to the fact that the brain was not yet fully dead, but fundamentally he ruled that death based on the brain could only be if all cells were dead and not just the loss of specific brain functions.

Rav Moshe Feinstein

As is clear from the quote from Rav Tendler’s article at the beginning of this section, as well as from the words of Rav Feinstein in his תשובה, the idea of physiological decapitation did not originate with Rav Moshe, but was one presented by Rav Tendler, which Rav Feinstein theoretically was also willing to accept. We call it ‘theoretical’ because in that same תשובה he places significant factual limitations on this concept.⁸⁸ Given both the medical knowledge of today and the history of medical knowledge, it is correct to say that at that date (1976), it was generally believed that with “brain death” the brain indeed was fully dead and complete lysis had taken place.⁸⁹ Today this simplistic depiction is no longer maintained. As mentioned above, cellular life often continues for some time following “brain death”, and while Rav Tendler himself distinguished between cellular death and organismal death, Rav Feinstein clearly wrote that his possible acceptance of this concept was based on the full destruction of each and every cell (נרקב לגמרי). Additionally, certain functions such as hypothalamic activity may continue as well. More recent post mortem studies done specifically in the period of 12-36 hours following

⁸⁴ See section on The Rulings of Other Leading Poskim: Rav Shlomo Zalman Auerbach, and also section on The Ruling of the Rabbanut Harashit: Dr. Avraham Steinberg.

⁸⁵ מנחת שלמה (תנינא סי' פ"ו)

⁸⁶ This point of Rav Auerbach’s is in striking contrast to the above quote from Rav Moshe Tendler who does not consider cellular death an issue, focusing more on the functions of the brain and organized somatic systems.

⁸⁷ While Rav Auerbach saw any cellular life in the brain as meaningful for this discussion, the continued function of the Hypothalamus was even more compelling in his eyes as it was an organized function of the brain that affected the body, and not just random cellular life.

⁸⁸ אגרות משה (י"ד ח"ג סי' קל"ב) וז"ל "וכיון שאתה אומר שעתה איכא נסיון שרופאים גדולים יכולים לברר ע"י זריקת איזו לחלוחית בהגוף ע"י הגידים לידע שנפסק הקשר שיש להמוח עם כל הגוף שאם לא יבא זה להמוח הוא ברור שאין להמוח שום שייכות להגוף וגם שכבר נרקב המוח לגמרי והוי כהותו הראש בכח".

⁸⁹ It should be noted that the test being spoken of, the cerebral blood flow test, while certainly considered a valid test for the declaration of “brain death” by the medical community, does not actually test for brain function or cellular life, but blood flow. It is not designed to show the complete absence of blood flow (which is not necessarily the case), but a significant deficit of blood flow; it is assumed that given this significant deficit that organized brain functions have ceased and that cells will die if they have not already.

“brain death”, the time when organs are generally removed for transplant, have found that total brain necrosis is only observed in a minority of cases⁹⁰.

Given that Rav Feinstein specifically rejected “brain death” based on functions of the brain, and that the “fully rotted brain,” as described by Rav Tendler to Rav Feinstein, is not found in the patients generally used for organ donation; it would be most misleading to present Rav Moshe's words as supporting organ donation based on “brain death” as the term is used today. This last point is not a matter of whether Rav Tendler's argument has merit; the issue here is whether this opinion can be attributed to Rav Moshe Feinstein, a most significant question when arriving at a Halachic conclusion.

⁹⁰ *Neurology*, “Neuropathology of brain death in the modern transplant era”, Eelco F.M. Wijdicks & Eric A. Pfeifer, 2008; 70; 1234-1237.

Sec. V: Responses of Leading American Poskim to Questions posed by the Vaad Halacha

As part of our inquiry, the Vaad Halacha reached out to a number of leading Talmidei Chachamim that the members of the RCA frequently turn to with their questions in Halacha.⁹¹ It should be noted that those Rabbanim whose work or opinions are addressed in detail elsewhere in this document are not included at this point even though some of them also may be frequently consulted by the Chaverim of the RCA. The following seven questions were posed to these Rabbanim:

1. What is the definition of death according to Halacha?
2. What is the status of “brain death”? (Is your view based on ודאי or ספק, and do you feel that this should make a difference in any way?)
3. If “brain death” is indeed to be considered as death, is that because death is defined by cessation of respiration or because it is considered as if the person has been decapitated (הותז הראש)? Assuming that “brain death” is to be accepted, which specific tests would be needed to determine that it has occurred? Would your view be affected by the fact/possibility that this/these test(s) may not commonly be performed?
4. Are any types of post mortem transplants permitted? Which types and under what circumstances (organs such as heart, liver and lungs where “brain death” applies, tissues and corneas which would take place following “traditional” cardiac death)?
5. Does the status of טריפה play any role in making this decision? How about גוסס?
6. Are live transplants prohibited/permitted/obligatory?
7. Assuming that “brain death” is not considered death, what implications might this have with respect to receiving transplants from such individuals?

Questions were presented in writing to Rav J. David Bleich, Rav Michael Rosensweig, Rav Hershel Schachter, Rav Gedalia Schwartz and Rav Mordechai Willig. They were presented orally to Rav Aharon Lichtenstein. All have responded. The specific comments and quotes included are those that stood out and contributed to further clarity; in general there was significant agreement amongst these Poskim.

Brain Death

Rav Bleich⁹² and Rav Willig⁹³ rejected “brain death” as a criterion for death בחורר ודאי, while Rav Lichtenstein⁹⁴, Rav Rosensweig⁹⁵ and Rav Schachter⁹⁶ rejected it בחורר ספק. Rejecting

⁹¹ Each of these Rabbanim have served as most valuable resources for this project; it is likely that this paper would not have been possible without their time, wisdom and guidance.

Even though Rav Lichtenstein has resided in Israel for many years, he was still grouped with these American Talmidei Chachamim as he still is very much a part of the world of the RCA Rabbanim.

⁹² Numerous oral communications in 2006-09. Written opinions can be found in many of Rav Bleich’s books including “*Time of Death in Jewish Law*” and journal articles, including *Or Ha-Mizrah*, September 1987 and April-

“brain death” ודאי בתורת ספק means that removal of organs from such a patient would be an act of רציחה, and rejecting it ספק בתורת ספק means that it would be an act of רציחה. More recently, Rav Schachter has indicated that our increased knowledge of brain activity following “brain death” may remove much of the ספק and indeed render the activity רציחה ודאי.

Rav Bleich has likely been the most prolific author on this difficult subject. Primarily his rejection of “brain death” and permanent lost of spontaneous respiration as indicating death is based on יומא פה as explained by רש"י (שם), as followed by the (שו"ת יו"ד סי' של"ה) חתם סופר and the (שו"ת סי' ע"ז) חכם צבי. Based on his analysis of חולין כא, Rav Bleich explains that it is only vital movement that is to be taken as a sign of life (and as seen in יומא פה this also includes cardiac activity), while the twitching of the lizard’s tail and other purely spasmodic movements are not. Regarding יומא פה he writes “Cessation of respiration constitutes the operative definition of death only because the lack of respiration is also indicative of prior cessation of cardiac activity.” The thrust of many of his writings have been to demonstrate the weaknesses in the arguments use to support “brain death” and the loss of spontaneous respiration for the removal of organs for transplant.

Rav Willig was the primary author of the 1991 תשובה issued by the majority of the Vaad Halacha of the RCA. That תשובה rejected both “brain death” and spontaneous respiration as sufficient to declare death while the heart continues to function. This was also based on the rulings of the חתם סופר and חכם צבי which both clearly indicate that a beating heart is a sign of life. The 1986 ruling of the Chief Rabbinate of Israel (which fundamentally was based on the permanent loss of spontaneous respiration) was rejected as it “demands a compound definition, involving two totally unrelated conditions” as it is clear that there are situations of permanent loss of spontaneous respiration which are not indicative of death. [The Rabbanut ruling had been explained that only when this loss of respiration was due to a loss of brain function was it indicative of death.]

As mentioned, Rav Lichtenstein himself considers the matter to be a great ספק.⁹⁷ He also related that there was a תלמיד in his ישיבה who was a victim of an act of terror, and the family wanted to donate the organs based on “brain death.” They did so, but not based on Rav Lichtenstein’s ruling, as he had made it clear to them that he did not accept “brain death” as being halachically

July 1988. His involvement with this topic spans many years and changes in technology starting with “Establishing Criteria of Death,” *Tradition*, vol. 13, no. 3, winter 1973.

⁹³ Oral communications in 2006-09.

⁹⁴ Oral communication in Summer 2006 and Fall 2007. Rav Lichtenstein’s comments regarding the Rav’s opinion can be found in section dealing with that topic.

⁹⁵ Oral communications 2006-2008.

⁹⁶ Numerous oral communications in 2006-09.

⁹⁷ He related that about 20 years ago Rav Tendler tried to get him to convince Rav Ahron Soloveichik on this matter. Rav Lichtenstein said there were two reasons why this could not happen. Firstly, because once Rav Ahron Soloveichik had made up his mind, he could not be convinced otherwise. Secondly, he said, the more that Rav Tendler tried to convince him, the more doubts he had about the matter.

valid. Knowing that they wanted to follow the other opinion, he did not stop them from doing so.⁹⁸

Rav Schachter has written and spoken extensively about this subject.⁹⁹ He writes that it is unclear from the sources in ש"ס whether the loss of brain function alone would be sufficient to indicate death, as the brain is only one of the three organs/systems defined by חז"ל as שהנשמה תלויה בהן. This is particularly so given that one of these three organs/systems is the liver; by all definitions a person with liver failure is alive, poor prognosis notwithstanding. More likely, Rav Schachter writes, the primary indicator of life would be a functioning circulatory system. This idea finds strong support in חולין כא; at the same time, this in no way contradicts the teachings of יומא פה, as absent modern medical technology, both respiration and cardiac/circulatory activity cannot function without the other.

None of these פוסקים were particularly concerned with the method of testing or ascertaining “brain death,” as it was not relevant to the issue¹⁰⁰ (see the section regarding comments of מו"ר הגריד"ס זצ"ל and the methods of testing, and also see the ruling of Rav Shlomo Zalman Auerbach in the section titled “The Rulings of Other Leading Poskim”).

Rav Schwartz¹⁰¹ (who was the only member of the old Vaad Halacha who did not publicly offer an opinion when it issued its תשובה rejecting “brain death”) was strongly opposed to the signing of cards or drivers licenses granting permission to take organs, as this would lead to what he described as a “*hefkerus*”, as doctors establish their own criteria and often exert extreme pressure on the families. As of this date¹⁰² Rav Schwartz still does not maintain a public position on the matter of “brain death.”

It is worth noting that this concern expressed by Rav Schwartz is quite similar to that expressed by the Chief Rabbanut of Israel in its ruling permitting organ transplant, as they insisted that aside from all of the halachic criteria, a member of the Rabbanut be part of each team making the determination of “brain death”¹⁰³. Clearly this is not because they profess more sophisticated medical knowledge, but is indicative of a lack of trust in the process when fully in the hands of doctors.

[His concerns have indeed been well borne out, as is documented in Section II of this paper “Medical Introduction”. The case of Zack Dunlap, also documented there (subsection “Additional Concerns with the Implementation of the ‘Brain Stem’ Standard”, very concretely demonstrates a most extreme failure of the medical protocols for determination of brain death.

⁹⁸ It should be noted that this story has been somewhat misquoted in the past; the incorrect version of the account strongly implies that the family decided to allow the removal of the organs due to the words of Rav Lichtenstein. He was quite clear that he expressed his opinion that he did not support such a procedure.

⁹⁹ *The Journal of Halacha and Contemporary Society*, Spring 1989, vol. 32 and (סי' ל"ו).

¹⁰⁰ It should be noted that many of the confirmatory tests for brain stem death are often not performed (see *Nishmat Avraham*, Y.D. vol. 2 page 306; this was also confirmed orally by doctors as well, see note #1 and #26).

¹⁰¹ Oral communication November 2006.

¹⁰² May 2008

¹⁰³ See Section IX of this document, titled “The Ruling of the Rabbanut HaRashit on the Matter of Brain Death and Organ Transplantation”.

Additionally, as indicated by the Chief Rabbanut and others¹⁰⁴ the fact that the values that govern Halacha are not the values followed by most of the medical establishment may well lead to decisions being made that incorporate other factors aside from the formally approved “brain death” protocol.]

Post Mortem Organ Transplantation

All agreed that transplants done by removing organs after a natural cardiac death has been ascertained are acceptable even in *הוץ לארץ* where the organs will be used to serve the general public; this case is still considered to be for *פיקוח נפש*. When asked if this was just *מותר* or if it should be encouraged, Rav Lichtenstein felt that it should be strongly encouraged.

[It is most important to note that none of this is based on what has recently been called “non-heart beating organ donation” (NHBD or DCD), where a non-brain dead patient who is on a ventilator has the ventilator removed, thus causing the heart to stop, after several minutes when he is considered dead the organs are then removed. While this procedure may remove the questions “brain death” introduces, at the same time it introduces potentially far more serious legal and ethical issues. This is particularly true in case where the heart is removed, since in order for a heart to be useful for transplant it must be capable of being restarted; if it can be restarted then the patient was in fact never dead since he could still be resuscitated.¹⁰⁵ This is an issue that troubles many in the medical community as well and certainly in the Rabbinic world, as the Torah does not permit taking the life of one patient, even a terminal one, to save the life of another.]

In theory, this would be relevant to kidneys (which can be used if removed within approximately 30 minutes of cardiac death, but the fact is that this is not generally done). [It should also be noted that prior to removal of organs, bodies may be prepped in various ways; were the Halacha to accept “brain death,” this may not be an issue as the person is no longer alive, but assuming that “brain death” is not accepted, which is one the main reasons to wait to utilize kidneys until after cardiac death, this could become a serious problem (if these procedures are done on a *גוסס* and are not for his benefit) if they would hasten the patient’s death. Accordingly, care would have to be taken to ensure that no such procedure be done prior to cessation of heartbeat.]

Corneas are in fact taken after full cardiac death as there is a 24 hour period following death in which they can be used. Accordingly, this procedure avoids all the above mentioned problems. This would be true for tissues and skin as well as there is no need to remove them while the blood is still circulating and do not depend on the issue of “brain death”.

¹⁰⁴ The issue of the reliance on doctors for this matter was addressed by Rav Avraham Sherman at the 46th *השבועון* held by Mosad HaRav Kook in Yerushalayim, and was subsequently published in their journal *נאמנות הרופאים בנושא תרומת אברים והשתלתם להצלת חיים* (תשס"ז) under the title *תורה שבעל פה* (תשס"ז).

¹⁰⁵ *New England Journal of Medicine*, August 14, 2008, “Pediatric Heart Transplantation after Declaration of Cardiocirculatory Death”, Mark M. Boucek, M.D. et al, vol. 359:709-714, “Donating Hearts after Cardiac Death-Reversing the Irreversible”, Robert M. Veatch, Ph.D., vol. 359:672-673, and “The Dead Donor Rule and Organ Transplantation”, Robert D. Truog, M.D., and Franklin G. Miller, Ph.D., vol. 359:674-675.

All agreed that even if an organ was removed באיסור, it still may be used. Thus there is no merit in arguments that various *talmidei hakhamim* have supported organ donation since we find them permitting receiving such organs¹⁰⁶.

Live Organ Donation

All of these Poskim agreed that the donation of organs by living donors is permitted, but not obligatory. The primary source where this is spelled out is in (תרכ"ז אלף נ"ב) שו"ת הרדב"ז where it is stated that one is not חייב to give up an אבר even for the ודאי פיקוח נפש of another ישראל. Rav Bleich and Rav Willig stated that those body parts which will regenerate (such as blood and platelets) and can be removed without any danger to the donor do not just entail a מצוה to give, but there is a full חיוב in cases where there is a חולה מסוכן בפנינו.

It is reported that Rav Elyashiv felt that this would not apply to bone marrow as it is common to administer general anesthesia to the donor, which entails a risk (even though the removal of the marrow does not).¹⁰⁷ Rav Willig and Rav Bleich feel that the risk posed by the anesthesia is so minimal that this case too would be obligatory. Approximately 1 in 250,000 people who receive general anesthesia die; this number includes all patients, including those who are seriously ill. Marrow donors tend to be younger and healthier and are therefore not subject to many of these same risks. [It is likely that at the time those words were stated by Rav Elyashiv statistics in Israel had indicated a far higher rate of death due to anesthesia. More details on this matter are spelled out in the section entitled "Donations from Live Donors."]

¹⁰⁶ There is simply no basis in Halacha to suggest that an organ once removed should be discarded, regardless of how it was obtained. This, of course, does not address the larger question of establishing a desired public policy.

¹⁰⁷ When we communicated with individuals in Rav Elyashiv's circle it was unclear whether he had actually issued such a ruling; assumedly this would indicate that such is not his opinion at this point. Nevertheless, we have included this idea as it has become part of the discussion, whether in fact it was stated by Rav Elyashiv or by others.

Sec. VI: The Opinion of Rav Moshe Feinstein on Organ Transplantation & Brain Death

Much has been written and said regarding the opinion of Rav Moshe Feinstein. It goes without saying that his word is not “just another opinion,” as it plays a most important role in contemporary פסק הלכה. As is well known, divergent ideas and opinions have been expressed in his name. For our purposes it is imperative to achieve whatever clarity can be gained towards a fuller understanding of his rulings. His written opinions will be addressed first, followed by comments and rulings reported by family members, close students, and others. Explanation, analysis, and critique will be provided wherever possible and appropriate.

The Written Rulings

1. Responsum of (יו"ד ח"ב סי' קע"ד) (summer of 1968, published in 1973)

Rav Moshe Feinstein directly addressed the relatively new question of heart transplants. He clearly and directly rules that it is a double homicide. He writes that it is prohibited to remove the heart of the donor since he is not yet really dead. Similarly, it is prohibited to remove the heart of the recipient since his life is generally shortened as a result of the transplant, so that he will die even sooner than he would have due to his heart disease.¹⁰⁸ In this landmark תשובה, he laid the groundwork for much of the contemporary literature that has followed.¹⁰⁹

2. Responsum of (יו"ד ח"ב סי' קמ"ו) (1970, published in 1973)

In this תשובה Rav Feinstein writes:

אבל האמת ודאי שלא זה שפסק המוח לפעול הוא מיתה ד כל זמן שהוא נושם הוא חי, רק זה שפסק המוח לפעול פעולתו הוא דבר שיביא לידי מיתה שיפסוק מלנשום

In these words he has clearly stated that “brain death” would not indicate death as long as there is (spontaneous) respiration present.¹¹⁰ Continuing, he explains his rejection of “brain death” as a valid indicator of death writing,

¹⁰⁸ In the early years of heart transplants they were more experimental than curative, with the recipient generally only living for a matter of hours or days.

¹⁰⁹ It is striking to note that in this תשובה, he writes a clear introduction stating, איני רוצה להאריך בראיות ובסברות ובפלפולא, כי אני אומר שכל המוסף לפלפל ולהביא ראיות הוא כגורע שמשמע שצריך ע"ז ראיות משום שלא פשוט כל כך ויבואו להקל לומר שאיכא למיפרך ואף שיהיו בדברי הבל מקליש זה כבר ויאמרו כי הרבנים חלוקים בזה שלכן שייך להקל ח"ו

In this introduction, Rav Moshe questions the propriety of elaborating on the issues, lest it give the impression that there is even the possibility that Halacha could permit such an activity. Before the more detailed section containing his proofs, Rav Feinstein wrote זהו התשובה אשר יש לפרסמה בלשון זה לא פחות ולא יותר בנדון זה; accordingly, it would be assumed that any major changes or revisions would come with equal clarity and emphasis.

¹¹⁰ The original question that he addressed states מה שאומרים הרופאים שסימני חיות ומיתה הוא בהמוח שאם לפי השערותיהם אין המוח פועל פעולתו הוא כבר נחשב למת אף שעדיין הוא נושם; this is clearly not the case in what is called “brain stem death”, but indeed is the case in what is referred to as “cerebral death”, a standard not accepted today in

שלכן פשוט שההורגו הוא רוצח וחייב מיתה אם ליכא חסרון המטריף בהמוח, דהא לא הוזכר סימן חיות במוח, ולא שייך לומר נשתנו הטבעים בזה, דגם בימי חז"ל היה המוח פועל הפעולות כמו בזמננו וכל חיות האדם היה בא ממנו ומ"מ לא היה נחשב מת בפסיקת פעולת המוח, וכמו כן הוא ברור שגם בזמננו הוא כן.

It clearly emerges from these words that a major piece of Rav Feinstein's logic is that "brain death" cannot be utilized as a standard of death as this criterion simply was not acknowledged by חז"ל.

At the same time, while Rav Feinstein clearly emphasized the role of respiration as the indicator of life, he did not allow the lack of spontaneous respiration to contradict other signs of life, writing:

אבל לדמות לזה חשיבות מיתה דהאדם לומר שאף שרואים הרופאים ע"י עלעקטריק ראדיאגראם שאיכא תגובות לב נחשב מת, נראה לע"ד שאינו כן. ... וא"כ במי שרואין ע"י העלעקטריק ראדיאגראם שיש לו איזה חיות הרי על אופן זה ליכא שוב אפילו רוב לומר שהוא מת, ואולי גם מיעוט ליכא, והוא החי ממש אף שאינו נושם. ... אבל ברור ופשוט שאין החוטם האבר שהוא נותן החיות בהאדם, וגם אינו מאכריז שהנשמה תלויה בו כלל, אלא דהמוח והלב הם אלו הנותנים חיות להאדם.

Accordingly, a patient – dependent on a respirator – with a beating heart would not be considered as dead (based on the words of this תשובה, this might even be true in a case where there was limited spontaneous cardiac activity that could only be detected through an E.K.G.). This idea is taken perhaps even further when Rav Feinstein twice quotes the סופר¹¹¹ who allows for the rare possibility of life without (apparent) respiration. Rav Feinstein writes:

והנה לפ"מ שכתב החת"ס דבעצם איכא מציאות שאף אחר שלא נשם בחוטמו הוא חי כדחזינן מהא דשמחות, אך שהוא מיעוט רחוק טובא.

This idea is included in Rav Feinstein's conclusion as well. It would certainly be expected that if there was any future reversal regarding the significance of cardiac activity in terms of the determination of death, it would need to be stated explicitly in writings of Rav Feinstein. As will be seen in the pages that follow, such an explicit reversal is not found.

3. Responsum of (יו"ד ח"ג סי' קל"ב) אגרות משה, dated אייר תשל"ו (May 1976, published in 1982)

In this תשובה Rav Feinstein addressed the point at which an accident victim could be considered dead and no longer kept on life support. The basis for his ruling seems to be that spontaneous

America, but one that may be used in other countries. [How the words שיפסוק מלנשום are to be understood is a significant question, as seen from the highly publicized case of Karen Ann Quinlan, who lived for years in such a state. Presumably, he is referring to the more common cases where life expectancy is indeed far more limited. However, from the medical perspective, the words שיביא לידי מיתה are imprecise; whether this might have been due to changed medical understandings, or for other reasons, is beyond the scope of this paper.] Most importantly, it does not seem that the fact that he is speaking about cerebral death and not brain stem death would impact the broader issues, as he clearly states that "brain death" cannot be used as a criterion since it was not used by חז"ל, and that even absent spontaneous respiration, a beating heart does indicate life.

¹¹¹ In שו"ת חת"ס (היו"ד סי' של"ה), Rav Moshe Sofer writes that following the cessation of cardiac activity, lack of respiration would indicate death. See footnote #119 for more details.

respiration is the ultimate sign of life, without which a person would not be considered halachically alive.¹¹²

It is also in this piece, however, that he seems to come closest to supporting the concept of “brain death” as he writes

וכיון שאתה אומר שעתה איכה נסיון שרופאים גדולים יכולים לברר ע"י זריקת איזו לחלוחית בהגוף ע"י הגידים לידע שנפסק הקשר שיש להמוח עם כל הגוף שאם לא יבא זה להמוח הוא ברור שאין להמוח שוב שום שייכות להגוף וגם שכבר נרקב המוח לגמרי והוי כהותז הראש בכח .

It should be noted that Rav Feinstein carefully prefaced these remarks by saying – “according to what you are saying.” However, the information that he was provided is problematic, as it seems to incorrectly describe the body at the moment of “brain death.” While at the time the תשובה was written it was generally thought that with the diagnosis of brain death all brain functions had ceased, it is currently acknowledged that even after “brain death” has occurred, connections can remain between the brain and the body¹¹³ and while most functions of the brain have ceased, others may remain for varying degrees of time.¹¹⁴ Additionally, the idea that the brain is נרקב לגמרי “completely decayed” at the moment when “brain death” takes place is not accurate.¹¹⁵ Accordingly, to quote this תשובה as supporting the concept of “brain death” per

¹¹² It should be noted that he does not spell out in this תשובה whether the heartbeat is spontaneous or is also mechanical, as there is no comment at all regarding heartbeat.

¹¹³ The medical examination being referred to in this piece appears to be contrast angiography or radionuclide angiography. These tests have been described in Section II “Medical Introduction”, subsection “Additional Concerns with the Implementation of the ‘Brain Stem’ Standard”.

In the above-mentioned תשובה by Rav Feinstein, it is inferred that as a result of these tests “there is absolutely no connection between the brain and the body”; this is not precisely correct, as they are designed to detect blood flow above the finite limits of their sensitivity. Additionally, they do not speak to neurologic or hormonal connections. The fact that some signs of continued life may exist would also indicate that some blood flow is continuing as well.

It should be noted that in a considerable percentage (approximately 20%) of cases where a clinical examination is diagnostic of “brain death” and confirmatory test are performed, electrical activity of the brain is detected via EEG (indicating cellular life/activity). In others (over 10%), blood flow is noticeable on radionuclide examinations. Indeed, the continued function of the hypothalamus would indicate that there is significant blood flow to the brain. In general, such confirmatory tests are rarely performed prior to declaring a patient dead. [See Section II, “Medical Introduction”, subsection “Continuing Brain and Other Functions after the Onset of Brain Death” for sources and more details.]

Accordingly, even were it to be understood that Rav Moshe had accepted these criteria; this would still demand that adequate and appropriate testing be done first.

¹¹⁴ The continued activity of the brain includes the continued intact functioning of the hypothalamic-pituitary axis in the brain, the continued function of the autonomous nervous system, the lack of diabetes insipidus (which, perforce, must indicate some blood flow), maintenance of hemodynamic responses, and stable blood pressure. For more details and sources see Section II “Medical Introduction” subsection “Continuing Brain and Other Functions after the Onset of Brain Death.”

¹¹⁵ These words at face value would seem refer to lysis of the brain, a process that has not yet taken place at the time of brain death, and may only occur after the passing of time. But to explain that here Rav Feinstein was speaking of what was often referred to as “respirator brain” is to offer a most problematic interpretation as it by no means coincides with brain death, often coming days or weeks later, not to mention the fact that it is not correct to say that such a brain is “completely rotted”. Neurologists report that families are often unwilling to allow “brain dead” relatives to be removed from life support as long as brain activity is detected on the EEG; while this is not a

se would seem out of place, as Rav Moshe himself conditions his words on the information with which he was presented.

There are others¹¹⁶ who do not wish to focus on the “brain death” aspect of this תשובה, instead they focus on the central role given by Rav Feinstein to spontaneous respiration.¹¹⁷ Regardless of whatever functions do or do not remain following “brain death,” it is clear that spontaneous respiration does not.¹¹⁸ As is clearly stated, the absence of spontaneous respiration would then be the primary factor in determining death according to Rav Feinstein. Following this idea there are those¹¹⁹ who have concluded that whatever status Rav Feinstein gave to “brain death,” lacking such spontaneous respiration, the patient would be considered dead regardless.¹²⁰

However, it seems that this is an incomplete reading of his words, as at the end of that same paragraph he states, שא"כ יש לנו להחמיר ... ואף שאינו נושם כלל בלא המכונה, שלא יחליטו שהוא מת עד שיעשו בדיקה זו שאם יראו שיש קשר להמוח עם הגוף אף שאינו נושם יתנו המכונה בפיו אף זמן גדול ורק כשיראו על

sign a higher brain function, it certainly leaves no room for the words “completely decayed”. See “The Oral Record” where Rav Tendler offers an alternative explanation for Rav Moshe’s words.

¹¹⁶ Dr. Avraham Steinberg, oral communication, Nov. 2006. It should be noted that Dr. Steinberg was the primary medical authority advising the רבנות in its 1986 ruling on this matter.

¹¹⁷ There are those who attempt to limit the role that Rav Moshe gives to respiration in this תשובה by pointing out that no comment is made about the heart; accordingly, some have suggested that the heart is also not beating in this case. However, as Rav Tendler has pointed out, if the heart was not beating there would be no need to check the respiration as the person would clearly be dead. Nevertheless, what this approach might be suggesting is that it could be speaking of an accident victim who is receiving mechanical support for both respiration and cardiac activity. Perhaps it is only in this case where the permanent loss of spontaneous respiration would be considered the singular sign of death. While this may not be the “simplest” understanding of this תשובה, it would provide consistency for all of Rav Moshe’s words in the many תשובות where he does not ignore cardiac activity, even absent spontaneous respiration. Additionally, it would remove the great difficulty pointed out in footnote #120 and in the paragraph of the text above starting with the word “However” that follows. It should, however, be noted that such cardio-pulmonary support would not generally have been provided for such an accident victim.

¹¹⁸ The premise that there could be spontaneous respiration following “brain death” which is found in an earlier תשובה (י"ד ה"ב ס"י קמ"ו) is assumedly referring to cerebral death or based on a scientific understanding that was subsequently rejected.

¹¹⁹ It should be noted that this understanding (as explained by Dr. Steinberg) is based on a statement made in ואפ"ה כשפסקה נשימתו שוב אין מחליין שבת, וע"כ כלל הוא לכל המתים שזהו חת"ס where the חת"ס (חיו"ד ס"י של"ה) שיעור המקובל בידינו מאז היתה עדה לה לגוי קדוש אבל כל שאחר מוטל כאבן דומם ואין בו שום דפיקה ואם אחר כך בטל הנשימה אין לנו אלא דברי תורתנו מאז היתה עדה לה לגוי קדוש מה הקדושה שהוא מת. For further details and analysis of Dr. Steinberg’s interpretation, see Section IX, The Ruling of the Rabbanut HaRashit on the Matter of Brain Death and Organ Transplantation, subsection “Rav Dr. Avraham Steinberg.”

¹²⁰ The idea that spontaneous respiration (and not “brain death”) is the determining factor of life or death also requires significant clarification, as the idea that a patient with severed nerves, end stage ALS or polio, who could never breathe without machinery, would not be considered alive finds no acceptance in the medical community. It should be noted that when Rav Moshe describes the accident victim who may or may not have suffered permanent damage to the nerves controlling breathing, he does seem to imply precisely that. Accordingly, even a comatose patient who was clearly not “brain dead” but permanently incapable of spontaneous respiration would be considered dead. [Drs. Robert Schulman and Jacob Fleischman report that when they asked Rav Dovid Feinstein about this matter, he responded that indeed this is how he understands his father’s ruling, that spontaneous respiration would be the determinant of life even in such cases. This understanding was also stated by Rav Dovid Feinstein to Rav Baruch Simon as well.] To further complicate the matter, it is at this point that the issue of the “rotted brain” is introduced, not at all relevant to clarifying the question at hand of whether the nerve damage is permanent or temporary, further bringing into question the nature of the information that Rav Moshe was addressing.

ידי הבדיקה שאין קשר להמוח עם הגוף, יחליטו ע"י זה שאינו נושם למת clearly accepting the idea that even when there is no spontaneous respiration, it is still necessary to ascertain that there is no longer a connection between the brain and the body. If such a connection remains, he writes, it is necessary to continue artificial respiration.¹²¹ Clearly the loss of spontaneous respiration itself cannot be considered as indicative of death according to what Rav Feinstein has written in this תשובה.

Following this last line of thinking, it would seem that quite the opposite conclusion (other than the one claimed supporting removal of the respirator) could be reached, namely, that since in some cases following “brain death” there is clearly a connection between the brain and the body (albeit greatly reduced), it is indeed necessary to continue to provide artificial respiration for many patients deemed “brain dead.”¹²²

Recent studies indicate that a noticeable number of “brain dead” patients do show blood flow when given Radionuclide tests¹²³. Given that this is greater than ten percent (מיעוט המצוי), following the words in the end of this תשובה, it would then seem to be an absolute necessity to perform the blood flow test before removing any “brain dead” patient from the respirator or proclaiming him as dead. Related to this issue, it is important to note that in fact, blood flow tests are performed in a small minority of cases. Accordingly, even assuming that Rav Feinstein accepted the concept of “brain death”, given the results of these studies, unless and until a blood flow test was done in each and every case, a diagnosis of “brain stem death” could not be relied on.

But aside from the question of whether connections do or do not remain between the brain and the body in any given “brain dead” patient, Rav Moshe has clearly once again rejected the use of cessation of spontaneous respiration as the criterion for death when other signs of life exist,¹²⁴

¹²¹ See footnote #114 above for some details of these functions. It is possible that he is assuming that given this connection spontaneous respiration might still be restored; however, this is not explained and remains conjecture.

¹²² Of course it could well be argued that this is not at all what Rav Moshe intended since he is speaking of blood flow (meaning, what is generally considered as “brain death”) and not other functions. However, it seems hard for us to reach any meaningful conclusions in this regard as his entire response was based on information that indicated that following the cessation of blood flow to the brain, the brain is “completely decayed,” and there is literally no more connection between the body and the brain, assumptions that are not necessarily correct. See footnotes #114 & 115 for more on this matter. While it might be tempting to suggest that these words indicate that he is indeed relying exclusively on “brain death” and not on respiration, that would seem to contradict his earlier concern with nerve damage. Accordingly, the seemingly contradictory implications of his words may explain why many have understood his acceptance of the blood flow test as a stringency to be employed in the case of an accident victim who otherwise appears dead (perhaps having neither spontaneous respiration nor spontaneous heartbeat), but not at all an indication that this test or the status of the brain in general should have any bearing on the life or death status of a patient in general.

¹²³ “Radionuclide Studies in the Determination of Brain Death: Criteria, Concepts, and Controversies”, Lionel S. Zuckier, MD, and Johanna Kolano, *Seminars in Nuclear Medicine*, vol. 38, no. 4, July 2008. “Evidence-based guideline update: Determining brain death in adults”, Eelco FM Wijdicks, MD, PhD, et al, *Neurology*, 2010;74:1911-1918. Also see Section II of this paper “Medical Introduction”.

¹²⁴ It is indeed correct that this would seem to contradict the earlier implications of this very תשובה as noted above in footnote #120. As previously noted, the medical information used and understandings that this ruling are based on are difficult to understand and appear to be contradictory.

just as he had previously done in סי' קמ"ו, where he ruled that cardiac activity, even absent (spontaneous) respiration, is considered a sign of life.

There is a significantly different interpretation possible that will lead to a radically different conclusion. In his earlier תשובה (יו"ד ה"ב סי' קמ"ו) Rav Moshe wrote:

ואין צורך להסביר החכ"צ שפעמים א"א לשמוע דפיקת הלב מפני שהלב תחת החזה ומרוב חולשה א"א להכיר אם עודנו בחיים, וכוונתו מפני שהדפיקה היא נמוכה ביותר, דאף אם נימא שנפסק הדפיקה ממש עדיין הוא נותן כח חיות מעט להגוף דלכן הוא נושם בחוטמו עדיין. ומש"כ הרמב"ם דאם ינוח הלב כהרף עין ימות ויבטלו כל תנועותיו, אין כוונת הרמב"ם על הפסק דפיקה אלא על הפסק עבודתו ליתן חיות להאברים, שהדפיקה הוא רק סימן לעבודת הלב ואירע שעובד הלב עבודתו ולא ניכר סימן זה דדפיקה כשהלב הוא בחולשה, והפסק עבודתו לגמרי ניכר בפסיקת הנשימה מהחוטם.

In these words Rav Moshe is describing the possibility of a heart that is not beating (even faintly) but it is still capable of keeping the body alive through its "עבודה". This idea is not based on scientific information but on his understanding of rabbinic sources, and while exactly what he means with this word עבודה is unclear, it is clear that he has said that continued life can exist (in some cases) without any heartbeat.

Following this idea his writings in יו"ד ג' סי' קל"ב can be understood in an entirely different light, one that is loyal to every word written there as well all reported comments about this תשובה. As stated, the patient under discussion is the victim of a sudden traumatic accident, he is on a ventilator and it is unclear whether he is capable of spontaneous respiration or not. There is no comment in these words about the heart. Ordinarily it would be assumed that of course the heart is beating, otherwise the person would be dead (unless there is also mechanical support for cardiac activity as well), but following what Rav Moshe wrote in סי' קמ"ו this may be exactly what he means. So that for a patient who has been in a sudden trauma and does not have a beating heart, it is sufficient to ascertain that there is no spontaneous respiration, something that can be detected via a blood flow test.

A most compelling argument for this understanding is seen in the use of the word להחמיר, which was echoed by both Rav Tendler and Rav Sherer and assumed by Rav Shlomo Zalman Auerbach who all labeled the use of this test as a חומרא (all quoted in the section that follows "The Oral Record"). Were we to explain the case in this תשובה as merely being a case where the heart continued to beat and the patient was on a respirator, and we were just not sure if he was still capable of spontaneous respiration or not, the use of this test (or any other one designed to detect that ability) would not be a חומרא, rather it would be an absolute necessity since it is needed to ascertain if this person is dead or alive.

It is only when following this understanding that all prior and subsequent rulings and statements by Rav Moshe are consistent with each other. Just three weeks after this תשובה was written, Rav Moshe was directly opposing proposed legislation pending in the New York State Assembly that would have acknowledged "brain death" as a criterion for death (as detailed in the next part of this section, "The Oral Record" part 3). Two year later Rav Moshe again wrote a תשובה reaffirming his opposition to heart transplants, referencing his earlier תשובה and again stating that it would entail a double homicide (see later in this same section, "part 4" that follows these

paragraphs for more details). If the understanding of יו"ד ה"ג סי' קל"ב being suggested in these paragraphs is correct, then it is clear that his words had no relation to the question of "brain death" or organ donation, but as quoted before, it was an unusual stringency for a most unusual circumstance, hence his affirmation of the previous rulings.

[Of course without a beating heart it is not possible to do a blood flow test, but as is clear from many of his writings on these topics, he addressed the information as presented with all of its limitations; additionally given his perspective seen in יו"ד ה"ב סי' קמ"ו, he may not have been concerned with this matter.]

Regardless of how Rav Moshe's words are interpreted, it is most important to note that the context of this תשובה was the nature and the parameters of the safeguards needed before removing an accident victim from a respirator and was not a question about the removal of organs for transplantation. Accordingly, any statement based on this תשובה that indicates that Rav Moshe supported organ donation following these tests should at best be considered the conclusion or conjecture of later authors or rabbis.

4. Responsum of (ה"מ ח"ב סי' ע"ב) אגרות משה, dated אדר תשמ"ב (March 1978, published in 1985)

In this תשובה, Rav Feinstein once again reaffirms his prohibition of heart transplants, referencing the portions of his earlier writings where he stated that in fact it is best not to elaborate on the matter lest it create the incorrect impression that there is even a question that it might be permitted.¹²⁵

It is worth noting that in his introduction to this volume, published only shortly before his passing in 1986, Rav Feinstein takes full responsibility for all content. This means that just shortly before his death he still saw fit to publish a clear תשובה prohibiting heart transplants. If indeed he had reversed himself on the matter it would seem quite unusual to print these words.¹²⁶

It is also important to note that this תשובה was written two years after the one found in יו"ד ה"ג סי' קל"ב. That earlier piece is often pointed to as supporting "brain death" or the lack of spontaneous respiration as the indicator of death, therefore permitting the removal of organs for transplant; however, given that two years later Rav Feinstein emphatically ruled that heart transplants were prohibited, referring back to his very first תשובה on the subject, it is difficult, if not impossible, to make such an assertion. It should be noted that in this תשובה Rav Feinstein specifically states that he is ruling based on full knowledge of the most up to date medical data; this would seem to indicate that he held that blood flow tests (and the other confirmatory tests that were available at that time) demonstrating "brain death" or a lack of spontaneous respiration were still not sufficient to permit organ donations.

¹²⁵ See subsection #1 under the Ruling of Rav Moshe Feinstein and see footnote # 109 as well.

¹²⁶ See Subsection 2, part 2 of this chapter in reference to Rav Tendler's explanations where this issue is addressed in further detail.

It can definitively be stated that there is no explicit תשובה written and published by Rav Feinstein which permits the removal of organs from “brain dead” patients, or even from patients with a heartbeat who lack spontaneous respiration.

5. Letter printed in the 8th Vol. of אגרות משה, (labeled יו"ד ה"ד סי' נ"ד)

[This text is included here as a “written” opinion since it is presented to the public as part of a volume of אגרות משה. Whether it indeed is part of the “written record” is a matter of great debate.¹²⁷]

Following the death of Rav Feinstein in 1986, family members published several volumes in his name. There is an introduction signed by his sons, Rav Dovid Feinstein and Rav Reuven Feinstein, supporting the work done by Rav Mordechai Tendler and Rav Shabsai Rappaport in bringing these works to press.

These volumes include a letter commonly referred to as the “Bondi letter.” It is generally agreed and uncontroversial that this letter was not penned by Rav Moshe. It is a response to a query by Dr. E. Bondi, about “brain death.” In this letter a strong stand supporting “brain death” and its use for organ transplant is clearly taken.

However, even were the letter to be a genuine expression of the opinion of Rav Feinstein, we are left wondering whether it can truly be viewed as in support of “brain death,” or whether the medical information it is based on, was sufficiently complete and accurate, as the author, after praising the Harvard Criteria, describes the brain of the “brain dead” patient as כבר ממש מתעכל, which is similar to his נרקב לגמרי of the תשובה in אג"מ יו"ד ה"ג.¹²⁸

However, the more crucial issue here is not what the letter says, but the authenticity of the letter as the work of Rav Moshe Feinstein. It is widely acknowledged that this is not the work of Rav Moshe¹²⁹. At that point in his life, due to advanced old age and ill health, Rav Moshe was no longer addressing major issues. As is well known, Rav Moshe kept copies of all of the thousands of letters that he personally had sent out. However, when the family wished to assemble these volumes, they needed to turn to Dr. Bondi to obtain a copy of the letter.

The date on the letter is כסלו תשמ"ה (Nov. 25, 1984), six years after his most recently written תשובה (ח"מ ה"ב סי' ע"ב) which prohibited transplants. However, the תשובה authored by him in 1978 was not published until 1985, which, if the “Bondi letter” was an authentic expression of Rav Moshe’s opinion, would lead to the surprising, even disturbing conclusion, that Rav Moshe published a תשובה on a matter of life and death that he himself no longer believed to be correct.

¹²⁷ There are many who question to what extent this letter accurately reflects the rulings of Rav Moshe.

¹²⁸ The salient quote in the letter reads:

... הגדרת המות שהיא גם צודקת לדינא, הגדרה שקוראים לה הרופאים "הארבערד קריטיריא" ... שנחשב ממש כ"נחתך ראשו" ר"ל של החולה, שכאשר מתקיימים תנאי האבערד, המוח כבר ממש מתעכל ר"ל.

¹²⁹ Correspondence with Dr. Robert Schulman.

The “Oral” Record

1) Rav Dovid Feinstein, son of Rav Moshe, is on record¹³⁰ saying that he has no knowledge that his father ever accepted “brain death” as a valid criterion of death. In a communication to Dr. Abraham S. Abraham, he states that to his knowledge, his father never reversed his written opinion on this matter.¹³¹ Needless to say, this would cast further doubt on the authorship of the “Bondi” letter, dated תשמ"ה, approximately four years before the communication with Dr. Abraham took place. There are several handwritten letters from Rav Dovid Feinstein on the subject of his father’s opinion on the determination of the end of life. Claims to the contrary notwithstanding, at no point in these letters does he ever indicate a direct or personal knowledge from his father that he accepted “brain death.”¹³²

It is also worth noting, that Rav Dovid’s understanding of his father’s rejection of “brain death” would certainly clear up the otherwise potentially contradictory implications of אגרות משה, (where he clearly rejects brain death in his first, second and fourth תשובות on the subject, while possibly opening the door to it in his third תשובה, and then seemingly accepting it in the “Bondi letter”, which as noted, predates the publication of the fourth תשובה).

At the same time, it is most important to note that Rav Dovid Feinstein does say that his father accepted the lack of spontaneous respiration as the sign that death has taken place. This language does seem consistent with what is found in several of his father’s תשובות.¹³³

However, this does not fit exactly with the text of אגרות משה at the end of יו"ד ה"ג סי' קל"ב, where a significant limitation seems to be imposed, namely, that even lacking spontaneous respiration, it is still possible for there to be life, in which case continued artificial respiration would be

¹³⁰ Rav Dovid Feinstein declined to address our questions when asked. All quotes of his ideas come either from Audiotapes of his presentation to the National Convention of Agudath Israel of America (November 2005) or can be found on the HODS website or responses received by others prior to our investigation.

¹³¹ נשמת אברהם (ה"ד סי' של"ט הערה א')

¹³² In the letter dated תשנ"ג ר"ה כסלו תשנ"ג he affirms that following the permanent cessation of spontaneous respiration a person is to be considered dead. The full text is quoted here:

כבר כתבתי שמה שכתב אאמ"ר זצ"ל בא"מ יו"ד חלק ג' סימן קלב היא תשובה אמיתית ואין להרהר אחריה שאין בה שום חשש זיוף וכן הוא דעתו ואיזה פרטים דשם שמעתי ממנו ממש ומה שכתבתי באיגרת של ג' פ' שמות תש"ן לא חזרתי ממנו ואין צורך לחזור ולחזור כל פעם שאיזה אדם טוען שאין תשובה זו אמת או איגרת זו אמת ואני מבקש מכל הרואים איגרת זו שלא להצריך לי לכתוב אחרת

Following his signature, and followed by a second signature he added the following:

לבירור הדברים אם הוא שוכב כמת ואין בו שום תנועה אף שהלב פועם מאחר שאינו נושם הוא כמת גמור זה נוסף אדלעיל ליותר בירור

In the other letter, dated שנת תש"נ in reference to יו"ד ה"ג סי' קל"ב he writes:

הנה בא"מ יו"ד חלק ג' סימן קלב כתב שמת הוא שאינו נושם אבל עדיין יש לחזור הנשימה אליו מחמת המכונה עדיין אינו מת ודברים אלו מלבד מה שראיתי כתוב שמעתי מפיו אבל בהתשובה הלזו מוסיף שיש עוד בקביעת וידיעת המות ומסתמא ר"ל שלא ינשום עוד במה שנפסק הקשר שיש למוח עם הגוף עיין שם בד"ה "אבל" הלא נכתב כתב אמת ואין להרהר אחריו ועל זה באתי על החתום

While he does cite his personal knowledge from his father, he does not do so in reference to this תשובה, explicitly stating that he has only heard certain portions of these ideas from his father. Specifically in reference to the key issue of blood flow testing he writes עוד ומסתמא ר"ל שלא ינשום “and assumedly his intention is to say” clearly indicating this is not part of what he heard from Rav Moshe.

¹³³ אגרות משה יו"ד ה"ב סי' קמ"ו, ויו"ד ה"ג סי' קל"ב. It should be noted however, that this approach leaves a major unanswered question, as it would indicate that a comatose individual who was permanently incapable of spontaneous respiration due to other reasons might well be considered as dead. Rav Dovid Feinstein has confirmed this assumption when asked; it is an assumption that doctors are not willing to make (although it is likely that many would not treat such a patient, but this is not the issue at hand). See footnote #120 for more details on this point.

mandated. This idea was expressed even more directly in אגרות משה יו"ד ה"ב סי' קמ"ו, where he states that even lacking spontaneous respiration, a beating heart does indicate life. While it would be logical to explain that in קל"ב סי' קל"ג יו"ד ג' he is just not addressing the issue of heartbeat, this is not accepted by Rav Dovid, as Rav Dovid maintains that his father relied on the absence of spontaneous respiration even with a beating heart present.¹³⁴ When questioned about this discrepancy, he did not attempt to account for the gap between the written and the oral record.¹³⁵

Even more troublesome than how this explanation fits with the text of אגרות משה are the broader implications of this idea, as following this approach a (comatose) individual who was permanently incapable of spontaneous respiration due to reasons other than "brain death" would also be considered as dead. When questioned, Rav Dovid indeed stated that such individuals would not be considered alive, an assumption not accepted in the world of medicine or by others in the world of Halacha.¹³⁶

2) As is most well known, Rav Tendler advocates the acceptance of the brain death criterion. He states that this is not just his own opinion, but that of his father in law, Rav Moshe Feinstein, as well.¹³⁷ However, it should be noted that Rav Tendler has not always asserted that this was the opinion of Rav Feinstein, as he wrote¹³⁸ in 1989 (three years after the death of Rav Feinstein), "The position that complete and permanent absence of any brain-related bodily function is recognized as death in Jewish law seems to be supported by Rav Moshe Feinstein whose responsum on heart transplantation begins with a discussion of decapitation."¹³⁹ Similarly, Rav Tendler and Dr. Rosner write "It is our opinion that the continued beating of the heart is not halachically critical,"¹⁴⁰ and "Thus, we maintain that the valid definition of death is brain death."¹⁴¹ The clear indication from each of these quotes is that they believed this to be true and did believe that such ideas could be culled from the writings of Rav Moshe as they felt this to be the logical conclusion of his words, but there is no claim of first hand or direct knowledge that

¹³⁴ Oral presentation at the National Convention of Agudath Israel of America, November 2005, available on audio tape.

¹³⁵ In his written response to Shalom Spira, recorded in "A Student's Reflections on the Halachic Piku'ach Nefesh Definition of Life in a Bioethical Context" (unpublished), in a letter dated the 5th day of the week of Tazria-Metzora, 5766, Rav Dovid wrote "I think I was very clear about what I felt I heard. There is no point arguing about it since it would not change what I heard. If one feels that I am mistaken, he is free to do otherwise. I don't make Halakhot in this field."

¹³⁶ As reported by Drs. Robert Schulman and Jacob Fleishmann and Rabbi Baruch Simon, each of whom spoke with Rav Dovid Feinstein on this matter, see footnote #120 above for additional details.

¹³⁷ Letter by Rav Tendler printed in *Tradition*, Spring 1994.

¹³⁸ *Journal of Halacha and Contemporary Society*, number XVII, page 22 and others.

¹³⁹ This is a most unusual support, as in this תשובה Rav Moshe rejects transplants. While of course it may well be argued that he may have accepted theoretical concepts that given more advanced medicine would allow him to accept that possibility, nevertheless, it is quite striking, as in our interview with Rav Tendler he refused to consider the concepts clearly written by Rav Moshe himself in his other early תשובה where he rejected the brain as a criterion of death as it was still dealing with a patient capable of spontaneous respiration. This was despite the fact that Rav Moshe spelled out clearly that he was rejecting the brain as an indicator of death due to the fact that there are no sources in the Talmud indicating this idea. Accordingly, to ignore this foundation so clearly and directly laid out by Rav Feinstein and to infer that he would accept the concept of "brain death" based on such a limited implication would seem to be an unjustifiably selective reading of his words.

¹⁴⁰ *Journal of Halacha and Contemporary Society*, number XVII, page 24

¹⁴¹ *Ibid*, page 27

such was the opinion of Rav Moshe. In this article they openly state that they know that other interpretations exist for these same writings: “We interpret Rav Feinstein’s written response to indicate that Jewish law clearly recognizes that death occurs before all organs cease functioning. This is our interpretation, not necessarily accepted by others.”¹⁴²

Rav Tendler cogently points out¹⁴³ that in the early תשובות, when Rav Moshe rejects “brain death,” he is not speaking of brain stem death, but of cerebral death, as he describes a “brain dead” patient who is still breathing on his own. Accordingly, Rav Tendler states that Rav Moshe never changed his mind on the subject, but when he ruled in יו”ד ה”ג that he was addressing a new reality with new information.

One of the questions we presented to Rav Tendler was that regardless of the fact that these two early pieces do not speak of brain stem death as is known today, nevertheless, Rav Moshe seems to have closed the door on that possibility as well as he writes, *דהא לא הוזכר בגמרא ובפוסקים סימן חיות במוח, ולא שייך לומר נשתנו הטבעים בזה, דגם בימי חז”ל היה המוח פועל כמו בזמנינו וכל חיות האדם היה בא ממונו ומ”מ לא היה נחשב מת בפסיקת פעולת המוח, וכמו כן הוא ברור בזמנינו הוא כן אגרות משה*. Rav Tendler did not wish to address these words of משה.

A second question that was posed to him was that assuming this was indeed the intent of the 1976 תשובה, why would Rav Moshe write a תשובה two years later (ח”מ ה”ב סי’ ע”ב) that once again rejected all possibilities of heart transplants? If he had ruled to accept “brain death”, why would heart transplants still be considered a “double homicide”? This is particularly troublesome given that Rav Moshe writes in that same piece that his ruling is based on the most up to date medical information available, as related to him. To this Rav Tendler responded that at that time there was a moratorium on heart transplants and they were not being done due to the high mortality rate. While it is indeed correct that many medical centers had ceased doing heart transplants,¹⁴⁴ this would only address one of those two “homicides”, since if the blood flow test was available (and acceptable to Rav Moshe) to confirm “brain death”, the idea of a double homicide would be most imprecise. Rav Tendler responded by stating that he was not involved in the writing of that תשובה. Additionally, he stated that “Reb Moshe never accepted that test,” and “it is a חומרא that should not be imposed as it would embarrass the חרדי at that time.” When pressed further, Rav Tendler stated that Rav Moshe “never related to it [the nuclide test].”

These last statements seem to indicate that Rav Moshe was likely just responding to the questions as they were presented to him and not necessarily focusing on the broader implications

¹⁴² Ibid, page 24.

¹⁴³ All references to Rav Tendler’s opinions can be found in The Journal of Halacha & Contemporary Society, Spring 1989, Jewish Review, Jan-Feb 1990, and in numerous other published works as well. Additionally, on November 20, 2007 Rav Tendler met with members of the Vaad Halacha of the RCA, making a presentation and responding to a set of written questions he had been presented several weeks in advance as well as other questions that were asked at that time. All proceedings were recorded at Rav Tendler’s invitation. All references to Rav Tendler’s answers refer to answers provided in the course of this meeting.

¹⁴⁴ However, at the same time Dr. Shumway did continue at Stanford University; additionally, the University of Minnesota Medical Center first began heart transplant activities in 1978. Dr. Thomas Starzl, one of the pioneers in the field of transplant and the use of cyclosporine who was actively performing transplants throughout this period, related to the Vaad Halacha that transplants had not ceased, but had “reached a plateau” and without this new drug would not have progressed further.

of these issues, as he often did not possess first hand knowledge of the medical facts and therefore relied heavily on the scientific opinions of others.

Regarding the matter of how to relate the implications of these different תשובות, there are several other reasonable alternative explanations for these תשובות, each leaving its own unanswered questions. It is possible that Rav Moshe simply did not want to open the door to transplants since he felt that it was hastening the death of the recipient, so he “magnified” the problem. While this would seem problematic as it would imply that Rav Moshe would have “stretched the truth,” if correct, it must be borne in mind that his intent was to save lives.

A second possibility is that Rav Moshe never considered that whatever he had said two years earlier had any relationship to transplants. This is consistent with the comment reported below by Rav Aharon Felder that Rav Moshe was not disturbed by the disparity between giving and receiving organs. Clearly such a comment could only have a place after the introduction of cyclosporine in 1978 (used as an anti-rejection medication), and its wide use in the next two years, which raised survival rates significantly. (It is also consistent with the last interpretation offered above in “The Opinion of Rav Moshe Feinstein: The Written Rulings” part 3). Accordingly, Rav Moshe never saw the nuclide test as related to transplants, and when the survival rates improved, he had no problem with permitting the receiving of organs, but at no time did he ever perceive that his words would be used to permit the removal of organs for transplant.

The Meaning of נרקב המוח לגמרי

In his writings,¹⁴⁵ Rav Tendler explains that the language in that תשובה describing the brain as נרקב לגמרי speaks of the lysis that comes with the passage of time following “brain death.” While this process could theoretically be of great significance in determining the status of the patient, it does not seem to be what Rav Moshe was writing about (or should have been writing about), as according to Rav Tendler’s understanding, Rav Moshe is ruling on the status of the moment that “brain death” takes place and not the implications of what will or may take place with the further passage of time. There is no argument that the patient will not survive. The question is whether he is already dead or will he be dying in short order.

In the course of the interview Rav Tendler took a different approach to address this concern, stating that what Rav Moshe had meant all along was that since all brain cells die within four minutes of being deprived of oxygen, this irreversible cellular change is the נרקב לגמרי of the תשובה. [Rav Tendler also mentioned that according to Dominick Purpura, MD, former dean of Albert Einstein College of Medicine of Yeshiva University, this process of cellular death is even faster, occurring in approximately one minute after being deprived of oxygen.¹⁴⁶] While this

¹⁴⁵ Journal of Halacha and Contemporary Society, number XVII, page 26, and others.

¹⁴⁶ When Dr. Purpura was asked about this matter we received the following reply: “It is in fact widely accepted that 4-5 minutes of acute hypoxia (abnormally low levels of blood oxygenation) will cause irreversible damage to neurons particularly in the cerebral cortex and with this loss of consciousness. Thus Rabbi Tendler is correct. In some cases the lower parts of the brain we refer to as the brain stem may continue to function in a comatose state. Brain death occurs when these brain stem functions cease. I do not hold an opinion different from this. It is likely that some physiological changes will transpire after one minute of hypoxemia, but might only be reflected in electrophysiological or cognitive testing or with functional MRI studies. Some years ago I argued for re-defining brain death as failure of the cerebral cortex even with some preserved brain stem function. However, in

indeed may be how Rav Tendler understands “brain death,” it is quite difficult to suggest that this change that is imperceptible to the naked eye is what Rav Moshe meant with the words נִרְקָב לַגְמָרִי. The words in the תְּשׁוּבָה would certainly seem to indicate that in fact he was addressing the simplistic and often exaggerated description of a “dead” brain undergoing liquefaction.

Rav Tendler mentioned during the interview that one of the most important factors that motivated Rav Moshe to accept “brain death” as death was the lack of a gag reflex. As Rav Tendler described, it was this factor that convinced Rav Moshe, since he could not imagine that a person could be alive and not gag when a piece of metal was placed down his throat. However, as Rav Tendler himself pointed out, the lack of a gag reflex is in fact not a real sign of death as this same phenomenon can be seen in some patients following a stroke. This is but one example that leads to a question whether the medical information presented to Rav Moshe really had been sufficient for him to gain a complete and thorough understanding of the medical details pertaining to “brain death.”

In the context of writing on brain death, Rav Tendler states that shortly prior to his death his father in law stated proudly that he never had to change or withdraw a written פֶּסֶק. If one understands the rulings of Rav Moshe as Rav Tendler explains them, these words would apply, and if one understands the rulings of Rav Moshe that he maintained his rejection of “brain death” these words are equally valid.

3) On May 25, 1976, twenty days after the date of the writing of יו"ד ה"ג סי' קל"ב, a meeting was held in the home of Rav Moshe.¹⁴⁷ Attending this meeting, aside from Rav Moshe, were his two sons, Rav Dovid and Rav Reuven, Rav Tendler, and Rav Moshe Sherer of Agudath Yisrael. The meeting was called by Rav Moshe, who was most disturbed that several individuals were falsifying his opinion on the matter of “brain death” to members of the New York State Assembly regarding pending legislation. The “Miller bill” would have mandated “brain death” as the criterion of death in New York State.¹⁴⁸ The result of the meeting was a letter to Assemblyman Miller stating that his bill “as written is and has always been unacceptable.” A full year later Rav Moshe still opposed any legislation on the subject of “brain death”, but if indeed there was to be legislation, it had to be accompanied by a religious exemption clause.¹⁴⁹ Further adding to the confusion is the fact that this letter emphatically rejects “brain death” but seems to accept the cessation of spontaneous respiration as the criterion of death; as is known, if “brain death” has occurred there is no longer any possibility of spontaneous respiration.

view of recent studies showing the effects of deep brain stimulation in semi-comatose patients, I have reserved judgment on my original position.”

¹⁴⁷ Archives of the Agudath Yisrael.

¹⁴⁸ The text of the bill stated “If artificial means of support preclude a determination that a person’s spontaneous respiratory and circulatory functions have [irreversibly] ceased, a person shall be pronounced dead if in the announced opinion of a physician based on the ordinary standards of medical practice such person has experienced a total and irreversible cessation of brain function.”

¹⁴⁹ The claim that Rav Moshe’s insistence on this clause was due to his great humility that would not allow him to impose his will on those who espoused another שיטה is most difficult to accept. The suggestion that Rav Moshe wanted to leave room to follow other opinions is highly questionable, as in the early and middle 1970’s we don’t yet find that there were leading פוסקים who had publicly taken a stand on this issue.

Several times during that same month, Rav Sherer called Rav Moshe to clarify what he had intended with the use of the blood flow test.¹⁵⁰ Rav Moshe insisted that the test played no role for most patients on respirators, and that even if there was a question as to whether they were still capable of spontaneous respiration it should not be done. It was only an extra procedure (הזמרה) for accident victims. It would seem that this distinction would leave significant unanswered questions.

At the behest of Rav Moshe, the offices of Agudath Israel actively lobbied against any acceptance of “brain death” in the New York legislature for a number of years, as he felt it was not in accordance with Halacha.

4) Writing in אדר תשנ"ג (Feb/Mar. 1993), Rav Shlomo Zalman Auerbach stated¹⁵¹ that even after seeing the above mentioned “Bondi letter” he still had significant doubts whether Rav Moshe really meant to rule in favor of “brain death” in י"ד ה"ג סי' קל"ב. He there explains that given that the issue of “brain death” and transplantation was such a “hot topic” in the Rabbinic literature of the day, it seems inconceivable that Rav Moshe would have written about the subject in such a cryptic manner and not spelled out that it is indeed a מצוה to give organs in order to save lives, especially given his already well known opposition to heart transplants. More likely, Rav Auerbach suggests, Rav Moshe did not say it directly because he did not wish to rely on “brain death” to permit the active removal of organs. Accordingly, the use of blood flow testing was only to be used due to the sudden nature of the death.

5) Rav Aaron Felder of Philadelphia¹⁵² reports¹⁵³ that in his many years of learning from and שימוש with Rav Moshe, which includes the entire period from the late 1960's to the early 1980's, he never heard or saw any indication that Rav Moshe supported the criterion of “brain death” or lack of spontaneous respiration to permit organ donation. He specifically recalls that Rav Moshe made it clear that there was no correlation between the permissibility of receiving an organ and the propriety of donating.¹⁵⁴ Rav Felder does not believe that Rav Moshe supported heart donation at any time.

Given the gravity of the issue, Rav Felder felt that the only proper course is to follow the clear written תשובות in משה אשרות which forbid removal of organs prior to cardiac death. Knowing that Rav Moshe wrote what he believed in a clear and direct manner, he felt that it is most inappropriate to make דיוקים that are not explicitly stated.

¹⁵⁰ Archives of Agudath Israel of America, quoted in brief in The Jewish Observer, October 1991, p.21.

¹⁵¹ מנחת שלמה (תנינא סי' פ"ו). When Rav Auerbach was offered the opportunity to learn more about the “Bondi letter”, he declined, as he considered the letter irrelevant.

¹⁵² Rav Felder was in the מתיבתא תפראת ירושלים of כולל from 1968 to 1982, spending ten of those years in close daily contact with Rav Moshe.

¹⁵³ Oral interviews, April 2007.

¹⁵⁴ While there is significant debate about Rav Moshe's later comments and rulings on organ donation, there seems to be no debate that he did allow the receiving of organs. This comment reported by Rav Felder may explain why Rav Moshe never wrote a reversal of his earlier rulings that prohibited receiving heart transplants. Additionally, this statement of Rav Moshe as reported by Rav Felder, brings into question the application of the statement in the ruling of the Chief Rabbinate that permitted organ donation in part because it was reported that Rav Moshe had permitted patients to receive such organs.

6) Rav Shmuel Fuerst,¹⁵⁵ Dayan of Agudath Yisrael of Illinois, reports¹⁵⁶ that over the years he had many conversations with Rav Moshe regarding critically ill patients and end of life issues. At no point, Rav Fuerst stated, did Rav Moshe ever rule based on “brain death” or solely based on the lack of spontaneous respiration; he always remained concerned about the presence of a heartbeat. Accordingly, Rav Fuerst considers reports suggesting that Rav Moshe accepted “brain death” or the lack of spontaneous respiration as sufficient grounds to permit removal of organs for transplant as inconsistent with the opinion of Rav Moshe as he heard it.

Conclusion

Based on the written record of Rav Feinstein, it is extremely difficult to draw support for the permissibility of organ donation from “brain dead” patients. Additionally, as seen above, some of the oral reports are in conflict with each other and in some cases contradictory to the written record.

¹⁵⁵ Rav Fuerst was a תלמיד of Rav Moshe, and he continued to consult with Rav Moshe in many areas of הלכה from his position in Chicago.

¹⁵⁶ Oral communication, April 2007. He also stated that based on his many conversations with Rav Moshe, אגרות משה י"ד ח"ג סי' קל"ב can only be understood to be a הומרא that Rav Moshe imposed before removing a patient from life support (assuming that the information in this תשובה is indeed factually accurate, itself a major issue of contention).

Sec. VII: The Rulings of Other Leading Poskim

While particular focus has been placed in this process on the rulings of Rav Moshe Feinstein, Rav Yosef Dov Soloveitchik, the Chief Rabbinate of Israel, and a number of American poskim with whom we maintain a close relationship, a number of other leading rabbinic authorities have also ruled on these matters. Their rulings and logic will be addressed in this section. Some have written extensively on the subject, others have only issued brief rulings; this will generally be reflected in terms of the length of our comments. Individual opinions that comprised part of the ruling of the Rabbanut or of the above mentioned American poskim will not be addressed in this section, as they have been dealt with in a larger context in the appropriate sections. Several other leading rabbinic authorities in Israel have purportedly issued rulings on this subject as well, but rulings that could not be documented in writing or other public records have not been addressed in this work.

Rav Shlomo Zalman Auerbach

Unlike most other rabbinic authorities who ruled on the matter of “brain death” and organ transplantation, Rav Auerbach was involved in an extended dynamic process that lasted many years. During the course of this time he clarified certain points, fine-tuned several rulings, and even modified some of his earlier statements¹⁵⁷. Not surprisingly, this has led to a certain amount of confusion in some quarters and in a few cases, an abuse of his words. His rulings have appeared in several public and private letters, his own תשובות, and various Torah journals, including a detailed survey in Nishmas Avraham, authored by his close disciple, Dr. Avraham S. Avraham. An attempt will be made to organize his thoughts and rulings in a chronological order, offering commentary and analysis when appropriate.

Rav Auerbach originally ruled so strongly against reliance on “brain death” that he even prohibited receiving an organ from a “brain dead” patient, even though the prospective recipient would die and there were other patients ready and able to accept this organ in his place.¹⁵⁸ He even permitted the desecration of Shabbos on behalf of this “brain dead” patient when necessary.

Rav Auerbach rejected the possibility of the reliance on “brain death” as a criterion of death. His reasoning was similar to that of Rav Moshe Feinstein,¹⁵⁹ stating that since it is not found in the Talmud and has no מסורה, we are not in a position to create a new definition of death lacking the authority of a Sanhedrin.¹⁶⁰ It is clear from both the written and oral rulings of Rav Auerbach that the lack of spontaneous respiration (with a beating heart) was not considered a sign of death by Rav Auerbach. This is seen where he writes that despite the fact that lack of respiration certainly does seem to be the criteria that the Talmud says to look for, in many cases it would no

¹⁵⁷ מנחת שלמה ח"ב סי' פ"ג [note that חלק ב' and תנינא are not the same edition but do contain significant overlap]

¹⁵⁸ שו"ת מנחת שלמה (תנינא סי' פ"ו, י"ז אדר תשנ"ג), וע"ע בס' נשמת אברהם ח"ד דפים קמ"ה-קמ"ז במכתב הגרשז"א לרב פייוול כהן בענין זה

¹⁵⁹ In these pages he explains the circumstances and limitations of these rulings.

¹⁶⁰ אגרות משה (י"ד ח"ב סי' קמ"ו)

¹⁶⁰ (חיו"ד סי' קנ"ז ס"ק ו') , Nishmas Avraham, (English Language Edition). vol. 2 page 308.

longer apply. He compares this to a case of a baby born after eight months of gestation, considered by the Talmud to be beyond help and accordingly, it was prohibited to do most activities on behalf of this baby on Shabbos. Rav Auerbach writes that just as this is clearly no longer so regarding the baby, so too if a person were found below rubble and not breathing, there would be a full obligation to continue extracting him from the rubble and to save that person utilizing all that modern medicine has to offer, artificial respiration included. [It is also seen in his insistence on the death of each and every brain cell, as detailed later in this section.]

Together with Rav Yosef Shalom Elyashiv, Rav Auerbach issued a letter to the public (dated ה"ח מנחם אב תשנ"א) stating his firm opposition to removal of organs from “brain dead” patients; this same ruling was reiterated the following year as well (dated ד' אייר תשנ"ב).¹⁶¹ Between the issuance of these two rulings, a good amount of confusion came to exist regarding Rav Auerbach’s opinion that necessitated this second ruling. The following five paragraphs outline the nature of that confusion.

Shortly after this first public letter was issued, Rav Tendler sent an extensive letter to Rav Auerbach and Rav Elyashiv providing his understanding of the medical and Halachic issues. They responded, stating that they had studied the material he had sent them and saw no reason to change their minds.¹⁶²

In the intervening time, a letter (dated י' אדר ב' תשנ"ב) was sent to Rav Auerbach from Drs. Neil Ringel, Robert Schulman, Jacob Schachter, and Professor Jacob Fleishman inquiring about purported changes in Rav Auerbach’s opinion.¹⁶³ In that letter it was stated that at the Association of Orthodox Jewish Scientists conference in New York many had received the impression that as a result of the “sheep experiment,”¹⁶⁴ Rav Auerbach had now reversed himself and ruled that if “brain death” could be proven by the fact that all blood flow to the brain, brain stem included,¹⁶⁵ had ceased, such a person should be considered dead. Also mentioned in their question was that at that same time Dr. Avraham S. Avraham read a letter from Rav Auerbach indicating that no such reversal of opinion had taken place. [Included in their question to Rav Auerbach was the fact that accurate testing did then exist to measure the presence or absence of blood flow to the brain.]

Rav Auerbach sent a brief and concise response supporting the assertions of Dr. Avraham. In his letter he stated that even a patient who has been shown via cerebral blood flow tests to have no blood flow and is considered “brain dead” (brain stem included) by doctors is still considered alive even though he is only able to breathe via artificial respiration. His status is that of a ספק גוסס according to Torah law. His letter states clearly that there was no reversal of opinion and reports to the contrary notwithstanding, it is prohibited to remove organs based on “brain death.”

¹⁶¹ Published in numerous journals, it can be found in the Jewish Observer, October 1991 and June 1992.

¹⁶² This exchange of letters is printed in נשמת אברהם ה"ד דף ק"מ.

¹⁶³ Printed in Assia, vol. 53-54, Elul 5754, pages 21-23.

¹⁶⁴ To be addressed in detail in the next several pages that follow.

¹⁶⁵ It should be noted that blood flow tests are designed to measure blood flow to the cortex and not the brain stem: Dr Lionel Zuckier, dept. of radiology, UMDNJ.

The reasons for much of this confusion were statements made by Rav Auerbach, both before and after the “sheep experiment.” The details of this series of events and Rav Auerbach’s statements will be outlined and explained:

One of Rav Auerbach’s concerns¹⁶⁶ had been the fact that the גמרא (ערכין ז.) states that when a pregnant woman dies, the fetus predeceases her. Based on this, Rav Auerbach found the fact that “brain dead” women can continue to gestate their fetuses as a further indication that “brain death” should not be considered as death. He wrote¹⁶⁷ that this matter could be best clarified by decapitating a pregnant sheep (while continuing to provide life support); if the pregnancy continues it would indicate that even in a “brain dead” mother the continuation of the pregnancy should not be considered as a sign of life (at least in an animal).

[The reason that he felt that this test would be significant was because in the case of the decapitated sheep (which is unquestionably dead), if the fetus would continue to survive it would be clear that the body had served only as an incubator. Based on this fact, even in other cases where the body remained intact, the continuation of the pregnancy would not prove that the mother is alive since even following beheading the fetus could remain alive¹⁶⁸.]

In the winter of 1992 this experiment was performed twice, with full-term pregnant sheep decapitated after all four of the major blood vessels to the brain were closed off to prevent bleeding. Artificial respiration was provided and the heart continued to pump. In both cases the lamb continued to live for several hours inside the mother, and in one case a live birth took place, while in the other it died before birth. Following the experiment, Rav Auerbach wrote that this disproves what he had previously thought, namely, that the continued pregnancy shows that the mother is alive. It is most important to note that at that same time he made it clear that this was in no way a reversal of his prior ruling; the only result of this experiment was the elimination of **one** of the proofs against the validity of “brain death.”

[Upon further examination, it remains unclear to us as to why Rav Auerbach felt that this experiment was particularly compelling. The above quoted גמרא clearly distinguished between cases where the mother died a natural death and cases of trauma (in the case under discussion in the גמרא it was an execution). Accordingly, it would seem that a case like the “sheep experiment” was never a question, as the גמרא clearly states that in cases of trauma the fetus can survive the death of the mother, and the mother would indeed serve as a mere incubator¹⁶⁹. At the same time, there are a smaller, but significant number of cases of “brain death” that are not caused by trauma (such as auto accidents), but come from medical causes such as stroke and cancer. It would then seem that for these cases no proof has been brought and it might still be said that the fact that such pregnancies continue would indeed disprove “brain death.”

Rav Auerbach did address this question, writing that since even in cases of “brain death” due to medical reasons the fetus could only survive long term if the mother is provided with artificial

¹⁶⁶ שו"ת מנחת שלמה (הג"ל, ס"ס פ"ו)

¹⁶⁷ Letter to Dr. Avraham S. Avraham, printed in Nishmas Avraham (English Language Edition), page 309.

¹⁶⁸ For more detail on the issue of decapitation and “brain death” see Section IV, “Decapitation, Virtual Decapitation and ‘Brain Death’.”

¹⁶⁹ This issue was also pointed out by Rav Avraham Shapiro; see his words in Section IX, “The Ruling of the Rabbanut HaRashit on the Matter of Brain Death and Organ Transplantation,” subsection “Rav Avraham Shapira.”

respiration, he therefore felt that there is no reason to distinguish between whether the cause of “brain death” was an accident or medical. It is quite difficult to understand why this fact should be of significance, particularly given the fact that Rav Auerbach clearly rejects the role of cessation of spontaneous respiration in the declaration of death. Accordingly, it would still seem that the continuation of pregnancy following “brain death” caused by stroke or cancer would still present a strong proof against the acceptance of “brain death” as criteria of death.¹⁷⁰ Unfortunately, Rav Auerbach did not elaborate on this matter.

There is also a second significant issue, this one not addressed by Rav Auerbach. In each of the “sheep experiments,” the fetus survived a few hours before either dying or undergoing a live delivery. This is most unlike the scenario seen today where a “brain dead” mother can continue to gestate her fetus for weeks and even months, with significant growth and development taking place, which is very different from the few short hours of survival seen in the sheep experiment (which did not include any continued fetal growth or development). So perhaps the literal proof from ערכין may have been removed, but more importantly, the reality of a mother whose fetus continues to develop is a most compelling sign of life, not at all to be compared to the “incubator” situation where the fetus can survive for only a brief amount of time. This same point is made by Dr. Robert Truog¹⁷¹ of Harvard Medical School, who notes that a “brain dead” person far more closely resembles a living person than it resembles a dead one; one of his prime examples of this similarity is its ability to continue to gestate a fetus¹⁷². (It should be noted that in the case in ערכין the survival of the fetus which חז"ל spoke of was also relatively short term, as there was no artificial life support available.)]

Dr. Avraham Steinberg, one of the leading proponents of organ transplants in Israel, also reported¹⁷³ that despite the removal of the proof against “brain death” by Rav Auerbach, he nevertheless maintained his opposition to reliance on “brain death” as a criterion for death. Dr. Steinberg questioned him regarding his logic, assuming that once this problem from ערכין was removed Rav Auerbach would then accept “brain death” as Halachic death, but Rav Auerbach did not do so since this was only one of his problems with the acceptance of “brain death”.

Dr. Steinberg also stated that Rav Auerbach indicated that if each and every cell of the brain would die, such a patient would then be considered dead (such is not at all the case in “brain death” where many cells or clusters of cells do remain alive even though the organ as a whole

¹⁷⁰ In our communications this question was also raised by Dr. A.S. Avraham.

¹⁷¹ “Brain Death-Too Flawed to Endure, Too Ingrained to Abandon” (2007), *The Journal of Law, Medicine and Ethics*, 35 (2), 273-281. As well as numerous other articles and essays.

¹⁷² This is also relevant to the support brought for “brain death” from the פירוש המשנה לרמב"ם where he labels the severed lizard's tail as a disorganized spasmodic movement, most unlike the coordinated integrated movements that are indicative of a living creature. The continued gestation of a fetus would certainly seem to be in the category of organized and integrated activity for a body to carry on. Similarly, the body's ability to heal wounds, and on rare (documented) occasions to continue to grow in a proportional manner would seem to indicate life (Dr. Alan Shewmon of UCLA Medical School, presenting to the President's Council on Bioethics, November 9, 2007). For more details see Section IV of this paper, “Decapitation, Virtual Decapitation & ‘Brain Death’,” under the subtitle אהלות (פ"א משנה ר').

¹⁷³ Oral communication, November 2006.

does not function).¹⁷⁴ Dr. Steinberg found this requirement troubling as even a heart that has stopped beating has numerous cells that remain alive, and if so, why should there be a different standard for the death of the brain?

It would seem that Dr. Steinberg's question can be answered based on the earlier rulings of Rav Auerbach, which stated that since we have no source in the Talmud for "brain death" (meaning the function of the brain), it would seem that only the complete death and destruction of the entire organ can possibly indicate death. This is not true for the heart, where the cessation of heartbeat is acknowledged by the Talmud¹⁷⁵ as indicative of death.¹⁷⁶

[The fact that he issued public rulings (most notably the letter dated ל' אייר תשנ"ב) prohibiting organ donation based on "brain death," labeling it an act of bloodshed, should serve to remove any doubts. Additionally, the abovementioned conversation with Dr. Steinberg supports the same conclusion, Dr. Steinberg's personal questions notwithstanding. As recently as March 2008, Rav Yehoshua Y. Neuwirth, author of שמירת שבת כהלכתה and close disciple of Rav Auerbach, reiterated¹⁷⁷ that Rav Auerbach never permitted the removal of organs based on "brain death." In Rav Neuwirth's words, Rav Auerbach described "brain death" as ערב מות but not מות.]

Moreover, subsequent to the sheep experiment (July 1993) Rav Auerbach was apprised of the growing evidence that parts of the brain, such as the hypothalamus, remained functional after "brain death" is diagnosed. This new information caused Rav Auerbach to strengthen his opposition to "brain death,"¹⁷⁸ as it was clear that portions of the brain often continued to function and could not be labeled as "dead." He also felt greatly distressed that much of his time had been wasted, since he had previously been informed that the complete and utter destruction of the brain had taken place whenever "brain stem death" had been diagnosed.¹⁷⁹ At this time Rav Auerbach also retracted any idea that following the removal of the patient from the respirator and the passage of a relatively brief period of time, organs could now be removed for transplant¹⁸⁰. The fact that ongoing brain activity could still be detected was taken by Rav

¹⁷⁴ It should be noted that there is presently no way to ascertain that each and every cell has died without performing an autopsy. When such post mortem studies are done they have generally indicated that not all cells have died with "brain death". See *Neurology* "Neuropathology of brain death in the modern transplant era," Eelco F.M. Wijdicks & Eric A. Pfeifer, 2008:70:1234-1237.

¹⁷⁵ יומא פה

¹⁷⁶ This same distinction can be made within the words of Rav Moshe Feinstein who clearly has rejected "brain death" as criteria of death but does seem to accept נרקב לגמרי, which would go much further than lack of function, as it would indicate the complete destruction of all cells. For more details see Section VI of this paper, "The Opinion of Rav Moshe Feinstein."

¹⁷⁷ Oral communication, March 2008.

¹⁷⁸ מנהת שלמה הנ"ל, Oral communication with Dr. A.S. Avraham, winter 2007, Nishmat Avraham (English Language Edition), pages 312-313.

¹⁷⁹ As his nephew, Rav Simcha Bunim Lazerson reported, that when he attempted to defend the doctors, Rav Auerbach responded that they had deliberately not told him the correct information.

¹⁸⁰ Following an inquiry by Dr. Robert Schulman and others, Rav Auerbach had accepted the idea that a "brain dead" patient could be removed from the respirator, following a 30 second period of time such a patient could be considered dead, thus permitting his organs for transplant. This was predicated on the "fact" that the entire brain was fully dead. As Rav Auerbach was informed of the fact that parts of the brain often remained functional and of the fact that even following this 30 second period if the patient was reconnected to the respirator the heart could be restarted, he fully retracted any suggestion that one could remove a "brain dead" patient from the respirator, whether

Auerbach as an indicator that the patient could well be alive¹⁸¹. There are those who continue to quote from Rav Auerbach's initial ruling, failing to mention that he completely rescinded the ruling in which he had previously allowed the removal of organs following the passage of this period of time after the patient had been removed from the respirator. [It should also be noted that this reversal also precluded removing a "brain dead" patient from a respirator even in cases where there was no plan to remove organs just as it he prohibited removing any other patient from a respirator¹⁸².]

[It should be noted that were he to have viewed the potential significance of "brain death" merely as a confirmation of irreversible cessation of respiration, the function of these parts of the brain or of scattered cells would be of no significance, but as stated above, he rejected respiratory death as criterion of death; it is for this reason that any function of the brain, including those that have no role in respiration, would clearly show that the brain as an organ was alive and the patient could not be declared dead.¹⁸³]

Similar to the above mentioned exchange recorded in Assia, in the Spring 1994 edition of *Tradition*, in a letter to the editor, Rav Tendler and Dr. Fred Rosner wrote that "brain death" is now supported as a criterion of death by more and more rabbis, including Rav Auerbach and Rav Eliezer Waldenberg. Dr. Robert Schulman wrote to each of these two Rabbanim, inquiring if indeed they had changed their rulings. Each sent responses to Dr. Schulman which were published in *Tradition* (Winter 1995) affirming their prohibitive rulings. Rav Auerbach insisted that just as he had written several years earlier, the "brain dead" patient is a ספק גוסס and it is an act of shedding blood to remove any organ from him. Rav Waldenberg¹⁸⁴ reaffirmed his original ruling; he also expressed his amazement at how his ruling could be contradicted during his own lifetime.

In a December 1991 letter to Rav Feivel Cohen,¹⁸⁵ Rav Auerbach wrote that despite the fact that he cannot support "brain death" to permit organ donations, nevertheless, it is permitted to receive organs that have been taken from such patients.

for the sake of organ transplant or not. Nishmat Avraham (English Language Edition) pages 312-313, written and oral communication with Dr. A.S. Avraham.

¹⁸¹ This resembles a standard that is increasingly being used today in this country, commonly referred to as "Controlled DCD" or "Non-heart beating donations". The case of DCD does differ in that it involves a non-brain dead patient whose heart is still beating and is actively removed from the artificial ventilation that had been provided until that point in order to make the organs available for transplant. Rav Auerbach was not addressing such a case, only one of "brain death."

¹⁸² Communications with Dr. Avraham S. Avraham and Rav Simcha Bunim Lazerson (author of *משנת חיי שעה*, nephew and disciple of Rav Auerbach), December 2008. Given that Rav Auerbach ruled that a "brain dead" patient should be considered a ספק גוסס it only follows that he should receive the same treatment as a גוסס.

¹⁸³ This is in contrast to the ruling of the Chief Rabbanut of Israel which only viewed "brain death" as a confirmation of the permanent cessation of spontaneous respiration. For more details see section on "The Ruling of the Rabbanut HaRashit."

¹⁸⁴ The opinion of Rav Waldenberg is addressed in detail below.

¹⁸⁵ This letter is printed in *נשמת אברהם (ח"ד דפים קמ"ה-קמ"ז)*; in the text of that letter specific parameters are laid out.

Rav Eliezer Yehuda Waldenberg

Rav Waldenberg dealt with many questions of medicine and Halacha in his comprehensive volumes, titled *שו"ת ציץ אליעזר*.¹⁸⁶ In a lengthy responsum,¹⁸⁶ he addresses the question of “brain death” and organ transplantation. The main sources that lead to this ruling are the *שו"ת חת"ס* and *שו"ת חכם צבי*.

First and foremost, based on the words of רש"י, he rules that as long as the heart beats, a person is alive.¹⁸⁷ He explains that the debate in the Talmud is only a matter of whether the failure to detect beating of the heart is sufficient to declare a person dead, but all agree that a beating heart is a sign of life.¹⁸⁸ Accordingly, Rav Waldenberg rejects “brain death” as it is possible for the brain to die before the heart. He is not troubled by the possibility that by following the conclusion of the Talmud to check the nose for respiration a patient whose heart still beats might be declared dead, as prior to the advent of the ventilator the beating of the heart and the cessation of respiration were essentially simultaneous¹⁸⁹.

One of the most confusing sources in this whole discussion is in the *שו"ת חתם סופר*. In one place he rules that cessation of respiration is the sign of death, but later on he writes that the patient must be still like a stone, have no heart beat and stop breathing. Rav Waldenberg writes¹⁹⁰ that the intention of the *חת"ס* in writing this was to say that even though the lack of respiration is the normal indicator of death, if the lack of respiration is contradicted by either of these two other signs of life then the person is not to be considered dead, as seen in *שו"ת מהרש"ם*. [This explanation of the *חתם סופר* is consistent with his explanation of how רש"י interpreted א"י.]

Rav Yitzchak Yaakov Weiss

Writing¹⁹¹ in 1990, Rav Weiss rejects the concept of “brain death,” stating that an injured or non-functional brain is not to be compared to decapitation. Basing himself on the *שבות יעקב* (ח"א סי' י"ג), he explains that the “brain death” case is a situation of *היי שעה*, while the person who has been decapitated is simply dead.

[Rav Weiss did not seem to feel it necessary to present much of a case, simply assuming that the “brain dead” patient is a *גוסס* and remains alive.]

The words of Rav Weiss were quoted in a somewhat surprising manner in the ruling of the Rabbanut. In their text, he, along with Rav Moshe Feinstein, is quoted as having permitted patients to receive heart transplants. While this seems to be factually correct, it misses the point, as he absolutely prohibited the removal of organs from a “brain dead” person, considering it an act of bloodshed. This strong and clear ruling would not necessarily preclude permitting the use of organs that had already been removed, even if a major violation of Halacha had already taken place.

¹⁸⁶ *שו"ת ציץ אליעזר* (ח"י סי' כ"ה)

¹⁸⁷ שם, פרק ה' אות א'

¹⁸⁸ שם פרק ד' אות ז'

¹⁸⁹ It should be noted that nowhere in the Talmud is there any mention of continued heart beat without respiration even though such possibilities were clearly present, such as following the *שחיטה* of an animal.

¹⁹⁰ *שו"ת ציץ אליעזר* (ח"ט סי' מ"ו אות ו')

¹⁹¹ *שו"ת מנחת יצחק* (ח"ה סי' ז')

Rav Ahron Soloveichik

Rav Ahron Soloveichik took a unique perspective, acknowledging the significance of the brain along with the heart and respiration.¹⁹² Similar to Rav Waldenberg, he writes that when the **התם סופר** said that death is determined when a person lies motionless and does not breathe, this only creates what Rav Soloveichik calls a presumption of death, but if it is contradicted by cardiac activity then no such presumption exists. Accordingly, he wrote that if any one of these three vital systems was still functioning, the patient was to be considered alive.

[This could theoretically lead to a significant stringency, that not only could organs not be removed from a “brain dead” patient whose heart continues to beat, but that even for a patient with no natural respiration and no natural heart beat, if brain waves could be detected he might still be considered alive.]

Responding to a series of questions, Rav Soloveichik strongly rejected the idea that this ruling would preclude the possibility of accepting an organ transplant, even though the organ may have been obtained in an unacceptable manner¹⁹³.

Rav Shmuel Wozner

Rav Wozner writes¹⁹⁴ that based on the rulings of the **התם סופר** and **הכמ צבי**, it is clear that the beating of the heart is a sign of life; most significantly, he points out that not one **ראשון** rejects the idea that heartbeat is a sign of life¹⁹⁵.

Offering a most unique perspective, he writes that when the **גמרא** says that all agree that it is sufficient to stop checking once the **הוטם** is reached; it does not necessarily refer to the nose. Instead, he writes, this refers to the head and neck in general, meaning that a pulse is being looked for at the temples or neck. If no sign of life is detected at that point, then it would mean that both cardiac and respiratory activity had ceased. If cardiac activity is found, that clearly would be sign of life, as indicated in **שו"ת מהרש"ם (ה"ו סי' קכ"ד)**. He admits that this may not appear to be the simple reading of **יומא פה**, but given that the **ה"צ** and **ה"ס** rule that heartbeat is a sign of life, the **סוגיא** must be read that way.

[Strikingly, this approach may actually provide a good understanding of **יומא פה**, as when the **גמרא** suggested matching up the two issues, comparing head with nose, following Rav Wozner's approach the comparison may be more precise than previously thought, as nose never literally meant nose, but the area of the head in general. At the same time, this approach takes significant liberties with the interpretation of the word **הוטם**, particularly given that the **פסוק** quoted by the **גמרא** seems to clearly focus on respiration (although it should be noted that he did insist that this entails examining the head area for both respiration and pulse).

¹⁹² Journal of Halacha and Contemporary Society, number XVII, Spring 1989, pages 41-48 and **אור המזרח** (תשמ"ה חוברת ק"ל-קל"א).

¹⁹³ **אור המזרח** (שם) שאלות ג' וד', In this article he explains that based on **כב נדרים** it emerges that the prohibition to **פיקוח נפש** including **רוצחים**, does not apply in a case of **עוברי עבירה**.

¹⁹⁴ **אסיא תשנ"ז**, ח' מ"ב-מ"ג, דפים 92-94

¹⁹⁵ At the same time it is also correct to say that not all **ראשונים** necessarily accepted the cardiac standard, as many simply did not address this issue.

It seems that the only reason that Rav Wozner felt compelled to offer this unique (and seemingly forced) reading of the גמרא is because he assumed that otherwise when merely checking for respiration one might fail to detect that cardiac activity was still present, small as that possibility may be. [This is most unlike all other interpretations of this גמרא that were satisfied that with the cessation of respiration there was no longer a need to check for cardiac activity as long as the body appeared to be motionless.]

However, it would seem that a much simpler solution is available, namely, that under natural circumstances, the cessation of respiration and of heartbeat are almost identical in time, and therefore ר"ל felt that there is no need to check for both as seen in Rav Waldenberg's abovementioned explanation.]

Rav Yosef Shalom Elyashiv

Rav Elyashiv issued¹⁹⁶ two statements together with Rav Shlomo Zalman Auerbach regarding organ transplantation and “brain death”. In each of them he prohibited the removal of organs from “brain dead” patients as it would be an act of שפיכות דמים. In a letter¹⁹⁷ dated ה'תשס"ה, Rav Elyashiv reiterated his strong opposition to the reliance on “brain death” as long as the heart beats.

Writing¹⁹⁸ on behalf of his father in law, Rav Yitzchak Zylberstein issued a תשובה on this topic. Rather than just restating his objections to reliance on “brain death” or the permanent loss of spontaneous respiration, he specifically addresses some of the main arguments that have been offered in their support, explaining why he rejects these proofs. The most significant of these points will be addressed in the following paragraphs.

Some proponents of “brain death” feel that the continued beating of the heart should not be of halachic significance since even if a heart were to be removed and placed in a container of liquid nourishment it would still continue to beat. Accordingly, the continued beating of the heart in a “brain dead” patient who is artificially ventilated is no different than a disconnected heart placed in this container, clearly not indicating life. However, Rav Zylberstein points out that this would seem to obscure the issue, as heartbeat is fundamentally independent of the brain even in a healthy patient. While it is certainly true that heart rate is controlled by the brain, this is not essential for survival, as is seen in heart transplant recipients when these neural connections have not yet been established, and indeed the ability to regulate the heart rate during changed levels of activity is significantly affected.¹⁹⁹ Accordingly, the fact that a heart can be artificially maintained when removed from the body cannot serve as a proof that a beating heart is of no significance in the determination of life and death, as it is just another example of the fact that heart beat can continue even absent neural connections, as seen in transplant recipients.

¹⁹⁶ *Jewish Observer*, October 1991 and June 1992. His ruling is also found in נשמת אברהם (ה"ד דפים ק"מ, קמ"ה-ק"ו). See the above section on the opinion of Rav Auerbach for more details of the context of these rulings.

¹⁹⁷ Reprinted by רב רפואה והלכה in an article titled (אדר הראשון תשס"ה)

¹⁹⁸ Ibid

¹⁹⁹ It should be noted that some of this needed regulation may be accomplished hormonally as well as neurally.

This argument which dismisses the role of continued cardiac activity is flawed for several other reasons as well. Firstly, *יומא פה* as explained by רש"י²⁰⁰ says that the continued beating of the heart in the victim of the collapsed building is indeed a sign of life. Accordingly, whatever continued functions can be artificially maintained when a heart has been removed from the body, are irrelevant to the case of the גמרא. Secondly and even more significantly, it would be incorrect to suggest that isolated cardiac activity was ever considered to be indicative of life (so that continuing it in an artificial context would then disprove its significance), as חולין כ"א clearly shows that it is not the mere presence or absence of cardiac activity that indicates life or death, but the continued functioning of the heart in a vital context; thus the gaping bleeding injuries spoken of in that סוגיא would indicate death even if the heart were to beat briefly following the injury.²⁰¹

Quoting from medical authorities, Rav Zylberstein (like Rav Auerbach) writes that Halacha cannot just accept the idea that the brain is "dead," as significant functions often remain, such as the hypothalamus. This, he says, provides important evidence that the brain has not been fully destroyed. Most significantly, he points out that this function is not checked in any of the accepted "brain death" protocols²⁰².

He next addressed the suggestion that once the brain no longer functions, the patient should be considered dead as he is now in the category of הותז ראשו, commonly described as "virtual decapitation." This idea is based on an interpretation of חולין כ"א, where it states: תנן התם הותזו ראשיהן אע"פ שמפרכסין טמאין כזנב הלטאה שמפרכסת, מאי הותזו, ר"ל אמר הותזו ממש ורבי אסי אמר רבי מני רמב"ם (הל' אבות הטומאה פ"ד) ה"ל אבות הטומאה פ"ד ר"ד ריש לקיש which would mean that anything less than a full beheading would not fit into this category. Accordingly, Rav Zylberstein writes that even if one would consider situations of "brain death" to be like a case of a severed spine, that would not qualify as הותז ראשו according to either ריש לקיש or רבי אסי, as even רבי אסי requires הקנה והושט הבשר, הקנה והושט הבשר, as even רבי אסי requires

²⁰⁰ רש"י יומא פה ד"ה הכי גרסינן אמר רב פפא מחלקת ממטה למעלה

²⁰¹ For further details see Section IV, "Decapitation, Virtual Decapitation & "Brain Death", subsection "Understanding פה חילין כ"א in light of פה יומא פה."

²⁰² Even in a case when it would appear that the hypothalamus is not longer functioning, as evidenced by unstable temperature and blood pressure, this does not indicate that the brain has in fact "died". Approximately 20% of "brain dead" patients continue to show electrical activity on EEG's (this does not mean that all of the other 80% do not have any, just that they did not reach the threshold designed to be detected by this examination) [as indicated in *Clinical Neurophysiology of Infancy, Childhood & Adolescence*, Gregory L. Holms, MD, et al, chapter 20] . Studies show over 10% of diagnosed "brain dead" patients still have cerebral blood flow ["Radionuclide Studies in the Determination of Brain Death: Criteria, Concepts and Controversies", Lionel S Zuckier, MD and Johanna Kolano, *Seminars in Nuclear Medicine*, Vol. 38, No. 4, July 2008 and "Evidence-based guideline update: Determining brain death in adults", Eelco FM Wijdicks, MD, PhD, et al, *Neurology*, 2010; 74:1911-1918] and studies indicate that significant numbers (between 22% and 100%) of "brain dead" patients continue to secrete vasopressin which regulates water retention. Overwhelmingly, neither EEG nor blood flow tests are performed as part of the diagnosis of "brain death" [*Neurology*, "Variability of brain death determination guidelines in leading US neurologic institutions", January 22, 2008, 70:284-289, David M Greer Panayiotis N Verelas, Shamael Haque, Eelco FM Wijdicks]. Even were Halacha to accept the criteria of "brain death" it would seem that these and other tests would be required to ascertain that the brain was in fact "dead".

order to be in this category of הוֹתוּ רֵאשׁוּ.²⁰³ Therefore, he concludes, there is no basis to invoke the concept of הוֹתוּ הֵרֵאשׁ in the discussion of “brain death”.

In an open give and take that is not often seen in the deliberations regarding “brain death,” he quotes a question that Rav Zalman Nechemia Goldberg had asked on this explanation of Rav Elyashiv. Rav Goldberg pointed out that these words of the רמב"ם were only stated in cases of טומאת שרצים, but when it came to טומאת מת, the רמב"ם (הל' טומאת מת פ"א הל' ט"ו) writes המת אינו מטמא עד שתצא נפשו... נשברה מפרקתו ורוב בשרה עמה... או שהותז ראשו... הרי זה מטמא אע"פ שעדיין מרפרף באחד מאבריו. It would then come out that the רמב"ם does not apply the same standards to humans as to שרצים.

Rav Elyashiv's response to this question was that his understanding of חולין כּא was not specifically intended to prove that “brain death” is not death, rather, it was to remove that source as a proof that it is death, as even when חוט השדרה והמפרקת עם רוב הסימנים the animal is not necessarily considered dead even though it would certainly seem that the brain was no longer functioning in such a case. Additionally, he points out that a careful reading of these words of the רמב"ם that Rav Goldberg quoted do not support Rav Goldberg's interpretation, as it would more correctly indicate that if the מפרקת was broken without other significant connections being severed, the patient is not considered dead, even though this injury alone would seem to satisfy the criteria of severing the connection between the body and the brain²⁰⁴.

There are other proponents of organ donation who do not base their support on “brain death,” but rather on the permanent cessation of respiration. This understanding is based on the case in יומא פה which describes the rescue from a collapsed building; the rescue is called off when the victim is found not to be breathing. Rav Elyashiv did not find this to be a compelling source, even though throughout the generations the lack of respiration was correctly taken as an indication that death had indeed taken place. This is because, as explained by Rav Elyashiv, respiration is to be understood as just one sign of life and the lack of respiration is just one sign that there is no life; however, if there are other clear indications of life, such as heartbeat, the lack of respiration does not indicate death.²⁰⁵

[It is possible to understand this גמרא to be saying that respiration is a sign of life, and it is also possible to understand it to be saying that the existence of respiration is the definition of life. Rav Elyashiv does not accept that respiration is itself the definition of life, rather, he explains, it is only an indication of its existence. It may well be said that this issue is one the keys to the question as to whether the lack of spontaneous respiration can be used as the indicator of death today or not.]

He also points out that there are various different situations that could each cause a permanent cessation of respiration; it could be “brain death”, it could be certain spinal injuries, or it could

²⁰³ As a parenthetical point he explains that even though it seems unlikely to consider this person to be still alive, based on חולין נד, it is possible that they felt a cure was still possible even after this grave injury had taken place. Also see מציעא קז.

It is also quite likely that while either of these two injuries by themselves is not grave enough to automatically define a person as dead, nonetheless, it is clear that a person with such severe injuries will die shortly.

²⁰⁴ For further elaboration on this issue see Section IV, “Decapitation, Virtual Decapitation & ‘Brain Death’.”

²⁰⁵ This is the opinion of the (ח"ו סי' קכ"ד) שו"ת מהרש"ם. This idea is also espoused by Rav Waldenberg; see above for more details.

even be polio. Accordingly, it is not possible to say that the permanent cessation of respiration is, in and of itself, to be considered as a sign of death when other signs of life exist. [Assuming that one does not accept that the case of a spinal injury which prevents spontaneous respiration is a sign of death, then to accept the loss of spontaneous respiration in a case of “brain death” (but not based on the “brain death”) as indicating death, means that other factors have now been introduced. Most significantly, this would mean that one is no longer relying on what appears to be the conclusion of the גמרא – to judge based on the presence or absence of breathing. This same point was raised in the 1991 responsum issued by the majority of the members of the Vaad Halacha of the RCA who rejected these criteria, amongst other reasons, because “it demands a compound definition, involving two totally unrelated conditions.”]

Towards the end of this תשובה, Rav Zylberstein quotes other leading Poskim who also do not permit organ donation based on “brain death” or the loss of spontaneous respiration. He references Rav Shlomo Zalman Auerbach and Rav Shmuel Wozner, and also Rav Moshe Feinstein. On the surface his reference to Rav Feinstein is most incomplete, quoting only from his very early (י"ד ח"ב סי' קע"ד) תשובות on this subject, and seemingly ignoring his later works. One might say [as clearly stated by Rav Shlomo Zalman Auerbach in writing²⁰⁶ and orally²⁰⁷ by Rav Aharon Felder] that Rav Elyashiv feels this way because if Rav Moshe had meant to permit organ donations he would have said so explicitly but did not. Alternatively it may be that there is more to it as well. In 2005, when it was suggested to Rav Elyashiv that Rav Feinstein had supported organ donation based on “brain death,” Rav Elyashiv described²⁰⁸ this idea as דברים בטלים, stating firmly that הוא לא אמר את זה.

In a 1991 letter addressed to Rav Feivel Cohen²⁰⁹, Rav Elyashiv writes that despite his rejection of “brain death,” he does not believe that one need refrain from accepting organ transplants from such patients.

²⁰⁶ See above in the opinion of Rav Shlomo Zalman Auerbach

²⁰⁷ See above in Section VI, “The Opinion of Rav Moshe Feinstein”, subsection 2 part 5.

²⁰⁸ Conversation with Rav Dovid Bloom of Yerushalayim.

²⁰⁹ כל נוסח מכתבו מובא בספר נשמת אברהם ח"ד דפים קמ"ח-ק"נ In that letter specific conditions are spelled out clarifying when he permits this.

Sec. VIII: The opinion of מרן הגריד"ס זצ"ל Rav Yosef Dov Soloveitchik on the matter of brain death and organ transplantation

As is well known, Rav Binyamin Walfish, former executive vice president of the RCA, reported²¹⁰ that late in 1983 or early in 1984 he met with the Rov, who according to this account, ruled in favor of using “brain death” as a criterion for death, thus permitting the removal of vital organs for transplantation. While the Rov was not very active in public policy matters at that time due to age and health, shortly thereafter, his brother, Rav Ahron Soloveichik, who himself had ruled that “brain death” was not at all to be considered as death²¹¹, insisted that his brother never ruled in favor of it. [This is recounted on a recording on the HODS website where Rav Ahron’s understanding is questioned, with the speaker implausibly suggesting that if the Rov and Rav Ahron had such a conversation, it must have been before the Harvard criteria were published. We regard this as implausible for a number of reasons, most notably the fact that those criteria were issued in 1968.] Indeed, Rav Marc Angel reported²¹² that he had received a letter from Rav Ahron Soloveichik and Rav Isadore Twersky, son in law of the Rov, stating that the Rov did not accept “brain death” as a definition of death.

To clarify the matter further, in the course of our research, a number of leading members of the Rov’s family were questioned regarding his opinion. These conversations are reported in the order in which they took place.

1) Rav Mayer Twersky reports²¹³ that he had conversations with his grandfather regarding “brain death”. He says that the Rov insisted that it was a great ספק that he believed could not be resolved. He was not even sure if the גאון could be מכריע were he alive today. Accordingly, the Rov stated, to remove an organ from such a patient remains a ספק רציחה, and may not be done.

Additionally, Rav Twersky says that at the point in the Rov’s life (in 1983/84) when he is quoted as having permitted reliance on “brain death” he was no longer giving any serious פסקים for the public. Additionally, Rav Twersky says that he finds it inconceivable that had the Rov ruled that it was מותר and a מצוה to give organs in this manner that he would not have made this highly significant ruling quite public.

2) Rav Yitzchok Lichtenstein²¹⁴ also had a number of conversations with his grandfather regarding “brain death” and transplantation, both before and after the date mentioned by Rav Twersky above. He, too, reports that the Rov viewed the matter as a great ספק, one that he was not even sure that the גאון could resolve. He mentioned that on more than one occasion, the Rov

²¹⁰ This is available on the HODS website. It should be noted that in this interview Rav Walfish states that the Rov deferred to Rav Tendler and said that his view should be followed in this matter. However, Rav Tendler himself states that the Rov was never willing to accept his view in their numerous conversations on the subject (see Conclusion of this section and footnote #219).

²¹¹ The details of Rav Ahron Soloveichik’s opinion are spelled out in the section of “The Rulings of Other Leading Poskim.”

²¹² RCA Record Sept/Oct 1991

²¹³ Oral communications, May and June 2006.

²¹⁴ Oral communications, June 2006.

commented that he did not understand how anyone could think they could be מכריע this question and permit it.

In regards to the claim that the Rov supported “brain death” it is mentioned that his only reservation was in terms of the accuracy of the tests used to determine brain death (a matter that many feel has improved significantly with time²¹⁵). Rav Lichtenstein mentioned that this was not the case, and that it should be understood that often when the Rov was not comfortable with an idea he would reject it based on various different factors, and the fact that he questioned the testing methods by no means should be taken as an indicator that he accepted the concept of “brain death” even in principle.

Rav Lichtenstein also added that at that late date in the Rov’s life, he was no longer giving הוראה for the public.

3) Rav Haym Soloveitchik declined to talk with us about the subject.²¹⁶ However, subsequently, Rav Hershel Schachter²¹⁷ reported that shortly after the initial reports came out claiming that the Rov supported “brain death,” Rav Haym told him that he could not imagine that his father had ever said such a thing. And regarding the claim that the Rov deferred to the knowledge of Rav Tendler, Rav Haym had said that even if such words were said, they must have been said facetiously.

4) Rav Aharon Lichtenstein reports²¹⁸ that he never discussed the matter with the Rov.

Conclusion

From the moment that public claims were made in the name of the Rov that he had accepted “brain death” as a criterion of death and permitted the removal of organs for transplant from such patients, his close family members have continuously protested the accuracy and veracity of such claims. This understanding is, in fact, supported by Rav Tendler himself, who stated in a lecture to the RCA in November 1991²¹⁹ that he had spoken with the Rov on numerous occasions and the Rov never accepted Rav Tendler’s idea that “brain death” should be considered death. All of the above, along with the added information gained through our own research, leaves no doubt as to what the Rov did in fact say. This clarity is especially true for those of us who are תלמידים of the Rov and knew of the cautious and judicious manner in which he dealt with all such grave matters, as well as being acquainted with the family members quoted herein, who have unanimously reported his opinion on this matter.

²¹⁵ While it is clearly correct that medical examinations and diagnostic techniques have only advanced, at the same time, as is spelled out on several occasions in this paper, the results of those examinations do not necessarily show what was originally assumed, namely that the entire brain is literally dead.

²¹⁶ July 2006.

²¹⁷ Fall 2006

²¹⁸ Oral communication, July 2006. Rav Aharon Lichtenstein’s own opinion is dealt with in the section on the Responses of Leading American Poskim to Questions posed by the Vaad Halacha.

²¹⁹ Rabbinical Council of America-Symposium, “Brain Stem Death and Organ Transplantation: Living Will and Health Care Proxy” November 21, 1991; available on videotape.

Sec. IX: The ruling of the Rabbanut HaRashit on the matter of brain death and organ transplantation

A landmark ruling in support of brain death and the donation of organs for transplantation was issued by the Chief Rabbanut of Israel in 1986. The initial committee included the two Chief Rabbis, Rav Avraham Shapira and Rav Mordechai Eliyahu, as well as Rav Shaul Yisraeli; it also included Rav Zalman Nechemia Goldberg. There were two doctors, Dr. Avraham Steinberg and Dr. Mordechai Halperin, both מוסמכים as well as physicians. In later deliberations, they included Rav Lau, and Rav Shaloush.²²⁰ The doctors educated the Rabbanim regarding the medical issues, taking them to hospitals, showing them “brain dead” patients, and demonstrating various diagnostic tests for them.

To this day, this ruling serves as the basis for many in the Religious Zionist community (and the Israeli government itself) to permit and encourage organ donation. The halachic basis for this ruling and its implications has been the subject of much debate in the more than 20 years since it was issued. In our efforts to understand this ruling, we reached out to the key individuals involved in the decision at the time. Some of them had written on the subject, others had not, but even to those who had written we had many questions, including some concerning their writings and others about the nature of the decision and the process that led to it. [The full text of the ruling is printed in אור המזרח כרך ל"ו ה' קכ"ח as well as other publications and on line sites.]

Rav Shaul Yisraeli

The leading פוסק in this group of Rabbanim who issued the ruling for the Rabbanut was Rav Yisraeli. He is the only member of this small group who had already passed away when we began our inquiry.²²¹ He did, however, write on this and several related topics. The article to be commented on here appeared in the journal *Assia*²²² and is titled “On the Permissibility of Performing Heart Transplantation in our Day” (“בהיתר השתלת לב כיום”), subtitled “The Underpinnings for the Ruling of the Chief Rabbanut in this Matter” (“היסודות להחלטת הרבנות” (“הראשית בנדון”). [All page references will refer to this article as it appears in *Assia*.]

In his article, Rav Yisraeli strongly supports the use of spontaneous respiration (and brain stem death) as the sole criterion of death, vigorously rejecting any possibility that cardiac activity could contradict this. He states (page 96), “And behold there is no doubt that it was known to our Sages that even when (spontaneous) respiration has ceased, it is still possible for the heart to continue to beat.” His proof is that following a royally mandated beheading (as was certainly the practice in the ancient world) it would be possible to detect a heartbeat in that beheaded person for a brief period of time.

²²⁰ After this committee made its recommendations, several other Rabbanim from the Rabbanut, including Rav She’ar Yashuv Cohen, participated in the final ruling.

²²¹ Sadly, Rav Avraham Shapira זצ"ל, with whom we had been communicating, passed away on חול המועד סוכות תשס"ה. Rav Eliyahu זצ"ל also passed away following a lengthy illness, just as this document was completed. Each of these two great חכמים and leaders are already sorely missed.

²²² This article is available on line at <http://www.medethics.org.il/articles/ASSIA>.

[This proof introduces a significant question. There is no clear evidence in rabbinic literature as to whether such individuals were or were not examined, so the entire premise of the proof remains a conjecture. It seems highly doubtful, given the absence of any such discussion, that רש"י entertained such ideas. More importantly, it must be asked, why this case of a beheaded person would not just be an example of פירכוס (spasmodic movement), and not at all a sign of life (like the slaughtered chicken “running around” without its head), has not been addressed. However, if these are mere spasmodic movements, it would by definition be of no significance and not at all related to a case of a “brain dead” person whose heart continues to beat but has ceased spontaneous respiration.]

Regarding the (יומא פג., וגמרא פה) משנה which speaks of rescuing the person who is buried in rubble, Rav Yisraeli writes that “since our eyes see that even when respiration has stopped the heart continues to beat (other than cases of heart attack), if so, why do we cease our attempts at rescuing the person (when we fail to detect breathing)? It must be as said before, that the beating of the heart without (spontaneous) respiration is not considered life, and such a person is like they have been decapitated, and no longer alive.”

[The scenario depicted by Rav Yisraeli indeed gives rise to some great difficulties. First of all, רש"י writes in his explanation of the two opinions in that גמרא that the one who requires checking for respiration is not satisfied with checking for heartbeat only, as it is quite possible that the heartbeat is very faint and thereby practically undetectable,²²³ which is not prone to happen when checking the nose for respiration. Clearly it is a given, according to רש"י, that the faintest heartbeat in the victim buried in the rubble would be a sign of life. Accordingly, Rav Yisraeli’s claim that absent respiration, heartbeat is of no significance, seems to ignore רש"י. (While it is also true that there is no suggestion that the heart was beating in the absence of respiration, this must be seen in the context of the fact that nowhere in the words of רש"י was a beating heart in the absence of respiration ever discussed and deemed meaningless.)

Secondly, as mentioned above, Rav Yisraeli’s whole understanding is based on the unsubstantiated assumption that our sages were well aware of the possibility of continued heartbeat following cessation of respiration, illustrated most graphically with the words “since our eyes see.” But even if it were in fact the case, it would be an extremely unlikely scenario in the case of the time-consuming task of removing fallen rubble, so that even if the heart would have continued to beat for a brief period following the cessation of respiration, by the time enough rubble could be removed to reveal the chest, cardiac activity would almost surely have ceased.]

Rav Yisraeli then writes (page 99):

And in the collapsed building spoken of in Yoma, where the cause for the cessation of respiration has clearly come through the crushing of the skull and injuring of the brain, as it is unlikely and even illogical to think that any other type of injury could have caused such a state so quickly, therefore we see that cessation of respiration is a sign and irrefutable proof that it came through a brain injury. Therefore we do not look at injury to the heart at all since the cessation of respiration clearly is caused by

²²³ Also see Section III of this paper “Analysis of Yoma 85a” for further detail and clarification.

an injury to the brain, therefore examining the heart in such cases would be of no consequence.

[These words are mysterious, as numerous injuries, to any number of parts of the body, could cause death during a building collapse. So too, his statement that “it is unlikely and even illogical to think that any other type of injury could have caused such a state so quickly” (וסיבה אחרת) (שגרמתו ברגע זה היא רחוקה מאד ובלתי סבירה כלל) is far from compelling. And even if his scenario were true, we cannot reach conclusions on the assumption that חז"ל knew that a patient's heart could continue beating after the cessation of spontaneous respiration, considering both the state of medical knowledge at the time, and the absence of any mention of this idea in their teachings.]

Rav Mordechai Eliyahu

As the Sefardi Chief Rabbi of Israel, Rav Eliyahu was also one of the leading members of the committee that ruled on organ transplantation. While no longer Chief Rabbi, the Rishon Le-Tsion continues to function as one of the leading rabbinic authorities in the Dati Le'umi community in Israel. It should be noted that Dr. Steinberg stated that when people in the Dati Le'umi community require a ruling on matters of transplantation, they speak with Rav Mordechai Eliyahu. A representative of the Vaad Halacha spent a full hour in conversation with Rav Eliyahu.²²⁴ Many topics were discussed, but Rav Eliyahu refused to comment on this particular topic, saying that he does not deal with this most difficult matter, instead sending people to Dr. Mordechai Halperin. Rav Eliyahu wrote an article at that time in the journal *Barkai* (תשמ"ז ח"ד) explaining his views; [all page references are to that article].

Unlike the approach taken by Dr. Steinberg, who essentially dismissed the view of רש"י in this סוגיא, Rav Eliyahu's article attempts to fit it into his approach. He suggests (page 23) several possible explanations for the words used by רש"י to explain why, according to one opinion, checking for the heartbeat is not good enough.

The first possibility he suggests is that the one who checks has in fact erred and not noticed the heartbeat or that it is so faint that it cannot readily be detected; alternatively, that in fact there is no heartbeat but the patient must be considered alive until the respiration is checked, as this is the only conclusive criterion for death.

The medical assumptions utilized by this article as reflected in the following statement (which follow the second of the two aforementioned possibilities), raise yet another major question, as he writes:

The fact of lack of heartbeat is not a proof of death, because this is not a good indication or adequate test, as it is possible that even if there is presently no heartbeat or signs of life in the heart, as long as there is respiration, it is possible to restore the heartbeat. However, if there is no respiration (in the nostrils), something which is easily checked, then even if cardiac activity would subsequently be discovered, it would only be regarded as bodily twitching and not as a sign of life. (page 24)

²²⁴

[According to this second possibility, we must understand that Rav Eliyahu assumes the גמרא to be saying that it is sometimes possible for respiration to continue even though the heart is no longer beating, in which case the victim would be considered alive, based on the verse, “all that has the breath of the spirit of life in its nostrils” (כל אשר נשמת רוח חיים באפיו). However, the idea of continued spontaneous respiration following the cessation of cardiac activity is not found anywhere in rabbinic literature and medically such a scenario does not exist, as absent CPR, respiration would cease shortly after the cessation of heartbeat. It is most difficult to understand the medical information/understandings he working with; if Rav Eliyahu is speaking about the medical care available in the time of the גמרא, restoration of the heartbeat was not possible, and, as mentioned, after the cessation of heartbeat there could be no sustained spontaneous respiration. Perforce he must be speaking of modern medicine; if so, it is clear that resuscitation (and independent heart function) is certainly possible after natural respiration has temporarily ceased. CPR is performed on patients who exhibit neither heartbeat nor respiration, and is effective in many cases. In either event, spontaneous respiration does not continue absent a heartbeat. In order to have a consistent and meaningful understanding it is necessary to either evaluate the סוגיא from the perspective of the medicine of the era of הז"ל, or from the state of current medical science; such consistency is not found in these writings.]

While he implies that his ultimate proof is from the text of the פסוק and not by way of analysis of the Talmudic disagreement, it should be noted that this text was never intended by the גמרא to serve as a literal proof, as the nostrils are not the source of life, only a good place where to diagnose whether the victim is still alive (this point is made by Rav Moshe Feinstein in אגרות משה (י"ד ה"ב סי' קמ"ו). It is striking to note that Dr. Steinberg, the leading medical adviser to the Chief Rabbinate committee, does not share this key assumption and concomitant crucial understanding of the גמרא with Rav Eliyahu. Similarly, Dr. Steinberg did not accept Rav Yisraeli's assumption that the גמרא was aware of and working with the assumption that the heart could continue to beat following the cessation of respiration either.]

Additionally, after laying out the two possibilities when a person with continued heartbeat can only breathe via artificial respiration (same paragraph), he writes “but life in the heart is impossible to verify properly as compared to respiration” (אלא שחיות הלב אי אפשר לבררו כדבעי (לעומת חיות החוטם שאפשר לבררו ע"י בדיקת נוצה). Even if this were to be true today (which it is not), it would seem to be of little significance for cases where a heartbeat is clearly detectable.

Strikingly, at the end of this same paragraph he references two pieces by Rav Moshe Feinstein and two by Rav Eliezer Waldenberg, but both seem to be quoted out of context. The first piece by Rav Feinstein (י"ד ה"ב סי' קמ"ו) indeed does mention that we need not be concerned with extremely obscure possibilities such as restoration of respiration after an extended hiatus, but more importantly, in that same responsum he does write that a beating heart even without (spontaneous) respiration should certainly be considered as a sign of life. The writings of Rav Waldenberg (ציץ אליעזר ה"י סי' כ"ה) clearly show that he rejected “brain death” or respiratory criteria, relying on cardiac activity as the primary sign of life.

Perhaps the most innovative point offered by Rav Eliyahu (pages 27, 28) is when he quotes Rambam (הלכות רוצח פ"ב ה"ח) who writes that one who kills a טריפה is not subject to execution as

a murderer, and the determination of the status of טריפה is to be made by the doctors.²²⁵ Similarly, Rambam (הלכות שבת פ"ב הל' א') writes that one may desecrate Shabbos for the patient “on the word of one expert doctor of that locale.” Rav Eliyahu acknowledges that the permission to violate Shabbos to save a patient even for cases not mentioned in rabbinic sources should not be taken as a proof of the authority Halacha grants expert doctors, given that Rambam started by writing “Shabbos is suspended when it comes to endangered lives” (דחוייה היא שבת אצל סכנת) (נפשות), so even a reasonable doubt would provide sufficient justification to permit violation of Shabbos. However, he does find the case of not executing the killer of a טריפה more compelling in the deference to be shown to medical authorities.

Following this same line of thinking that the Torah has given this authority to doctors (page 30), he comments that we should view the patient who has been revived through CPR as one who never died and not as one who died and was revived. This, he says, is because the doctors have told us that it is so. And following this logic he writes, it is only because doctors say this patient can be revived that he is viewed as alive, but if they say he cannot be revived, as in a case of “brain death,” in such a case he is to be regarded as dead.

[While this is certainly a novel approach, it has several major flaws. Firstly, why should it be taken for granted that the fact that a resuscitated patient is regarded as having never died is based on doctors saying it is so (הם אמרו והם אמרו, in his words)? It would be far more logical to suggest, as Rav Shlomo Zalman Auerbach did,²²⁶ that the medical reality of today is that such a patient can be revived, and thus as long as that possibility does exist he is not considered dead²²⁷. The patient is not considered alive because the doctors say he is alive, but rather because the cessation of cardiac activity and/or respiration is reversible. {According to Rav Auerbach it should be understood that when we look back at the determinations of death made in previous generations where such possibilities of resuscitation did not exist, we would say that the patient would be considered dead from the moment he ceased to breathe, albeit retroactively once the possibility of resuscitation was no longer possible.}

Perhaps even more importantly, in each of the several cases that Rav Eliyahu quotes from Rambam where doctors are given authority to declare a טריפה and violate Shabbos or not execute a killer, each of these are precautions taken for the express purpose of saving a life. In the case of organ donation it is true that the life of the recipient may be saved, but if the donor is not yet dead, we would be guilty of taking his life. There is no classic rabbinic source that suggests that we should defer to medical authorities for the definition of death; all sources deferring to the authority of physicians focus on the health or prognosis of the living patient. The appropriate

²²⁵ This point is also made by Rav Nachum Rabinovitch in “What is the Halacha for Organ Transplants?”, *Tradition*, vol. 9, no. 4, Spring 1968, pages 23-24.

²²⁶ Quoted in Nishmas Avraham (English Language Edition), Y.D. vol. 2 pages 301-2, also O.C. vol. 1 p.220

²²⁷ It should be noted that this explanation utilized by Rav Auerbach is, in fact, how the medical establishment views a patient who can be revived. The fact that the patient is still alive since he can be revived has become a major ethical concern in cases of the removal of hearts following “donation after cardiac death”, since if the heart can be restarted how can the patient be deemed dead, thus violating the “dead donor rule” of organ donation. Those who encourage such procedures justify their actions explaining that since the heart will not be restarted in the donor it is acceptable to view him as dead even though his heart could theoretically be restarted. This issue is addressed in *The New England Journal of Medicine*, August 14, 2008, volume 359:672-673, “Donating Hearts after Cardiac Death-Reversing the Irreversible”, Robert M. Veatch, Ph.D.

function of doctors in this case would be the determination of the presence of the halachically established criteria of death. In fact, as several leading physicians stated to us, “doctors can describe the clinical condition of the body, but it is up to the rabbis to decide whether those clinical facts constitute a state of life or death.”²²⁸ To illustrate the point more clearly, if the definition of life and death were to be handed over to medical authorities, we might quickly find that abortions would be acceptable as well since they do not deem a fetus as really alive yet.]

Rav Zalman Nechemia Goldberg

Rav Goldberg was added to the small group of Rabbanim involved in this ruling of the Rabbanut. Rav Goldberg is one of the leading פוסקים in Israel today. He is the only one of the leading participants in the 1986 ruling who never wrote an explanation of his opinion on the matter.

When asked²²⁹ about the Rabbanut ruling, Rav Goldberg explained that his acceptance was based on the understanding that following “brain death,” the brain is completely dead and there is no longer any connection between the brain and the body, and therefore such a person would be considered dead. At no point in the presentation to the Rabbanim was it pointed out or even suggested that certain brain activities may continue following the declaration of “brain death” [including the hypothalamus which in a significant percentage of “brain death” cases does continue to function for some time, as well as the fact that brain activity is detected via EEG in a significant portion of “brain dead” patients]. It clearly emerged from this conversation that his acceptance of the 1986 ruling was predicated on the accuracy of the information provided, and if this were not the case, then his acceptance of the ruling would not stand. This significant “reversal” of his position is seen in the subsequent dealings that Rav Goldberg has had with this issue.

In May of 2008 Rav Goldberg was quoted (accurately) as encouraging Orthodox Jews to sign organ donor cards. Notable, he avoided the issue of “brain death” by advising that each person consult with their own Rav as to which box, “cardiac death” or “brain death” should be checked off. Clearly Rav Goldberg has taken a strong stand supporting post-mortem organ donation, but he did not address the definition of death in this public statement. Following the 1986 ruling, there should have been no question as to which box Rav Goldberg would recommend checking off.

In the summer of 2008 at a conference of South African Rabbis being held in Jerusalem, Rav Goldberg was “quoted” as supporting organ donation based on “brain death.” When he appeared later that day at the conference he was asked directly; he clearly responded that he takes no stand on the issue of “brain death.”²³⁰

²²⁸ See note #1.

²²⁹ Oral communication between Rav Goldberg and Rav Mordechai Willig, January 2008.

²³⁰ As reported by Rav Hershel Schachter who also participated in that same conference. Similar comments were reported by Rav Yaakov Weiner, Rosh Kollel of the Jerusalem Center for Research: Medicine and Halacha, who met with Rav Goldberg. In this conversation, when Rav Goldberg was informed that organ donors are often anesthetized when hearts are removed, he commented that he had not been aware of this fact, and if so, such a patient would not meet the criteria of death in Halacha.

In the past few months Rav Goldberg's words have been used by proponents of organ donation to imply his support for the criteria of the Rabbanut. While it certainly is correct to say that he is an active and strong supporter of the concept of organ donation, it must also be said that he can no longer be considered a supporter of the criteria which he once did ascribe to. As one of the Poskim involved in the 1986 ruling it would seem more than strange for him to "take no stand on brain death" and to recommend that each person consult with their own Rav, if indeed he was a supporter of these criteria; but, as Rav Goldberg spelled out on at least three occasions, it is not clear to him, which version of the "facts" is correct, and therefore he can take no stand on the issue.

Rav Avraham Shapira

Rav Avraham Shapira was the Ashkenazi Chief Rabbi of Israel at that time and continued to serve as Rosh Yeshiva at Yeshivat Merkaz HaRav until his recent passing. Rav Shapira was also presented with the same set of written questions that we had prepared for Rav Eliyahu, and at the time of Rav Shapira's death we were still awaiting his promised written response.

Rav Shapira addressed the issue of brain death and organ transplantation in writing in 1994 (אסיא (נ"ג-נ"ד א-ב, אלול תשנ"ד). The following is a summary interspersed with comments on his article; [all page references are to that article].

He wrote that piece to explain and support the Rabbanut ruling of 1986. In Rav Shapira's view, the defining factor of life is spontaneous respiration. He states (page 17) that the primary source for the determination life depending on respiration, is the תשובה of the (יו"ד סי' של"ה). He notes that the חת"ס suggests several possible sources for how we know that respiration is the key to life.

[While the חת"ס certainly does write וּכְמַבּוּאָר בְּיוֹמָא כל שאחר שמוטל כאבן דומם ואין בו שום דפיקה ואם אח"כ בטל הנשימה אין לנו אלא דברי תורתינו הקדושה שהוא מת, thus acknowledging the critical role of cardiac activity in establishing death. This portion of the responsum is not directly addressed by Rav Shapira.]

While not actually dealing with this quote of the חת"ס, Rav Shapira does seem to address the issue of cardiac activity by offering a most novel explanation. He states that whenever heartbeat is seen as a criterion in ש"ס וראשונים, it is only on a rabbinic level, but not based on Torah law (שזה רק מדרבנן).

[Unfortunately, Rav Shapira did not elaborate on this novel interpretation. Aside from the fact that it does not address the above mentioned lines of the חת"ס, he does not quote any sources in the אחרונים or ראשונים for this idea. More significantly, to suggest that חז"ל created a new and additional definition or criterion of death would presuppose that they had a significant need to do so. Given that Rav Shapira himself has pointed out that prior to modern times cardiac death and respiratory death were essentially simultaneous, the question is most pressing: why would חז"ל need to add cardiac death as a definition of death? This is especially difficult, since as pointed out in his article, respiratory death generally comes first, and more importantly, as יומא פה clearly concludes, the lack of respiration is far easier to accurately detect than the lack of cardiac activity. Accordingly, there is no compelling reason to suggest that they created this new standard as a cautious חומרא.

Perhaps it might be suggested that such a stricter standard could have a place in the laws of *טומאה וטהרה*, to prevent a *כהן* from contacting an individual about whom it is difficult to determine whether he is alive or dead. However, the sources that Rav Shapira addresses deal with a rescue from a collapsed building and not with *טומאה וטהרה*.]

Rav Shapira adds that in fact there is little practical difference between respiratory death and cardiac death, as we know from modern medicine that once the brain stem is destroyed, breathing will cease and the heart will also stop within ten minutes. He then acknowledges that these sources do not deal with the pressing question of the status of artificial respiration and the heartbeat that it enables. Again quoting his medical resources (page 18), Rav Shapira distinguishes between cases of reversible cessation of respiration (where the brain stem clearly continues to function), where the use of artificial respiration serves as a lifesaving tool, and cases of irreversible cessation due to damage to the brain stem, where he considers the victim to be dead. Lacking this spontaneous respiration the heart too will shortly stop, and even when provided with artificial respiration the patient can not and will not ever recover. Accordingly, he writes that the patient should be declared dead ten minutes after “brain stem death”, stating that this is true even if one insists on using the cessation of cardiac activity to determine death, since any heartbeat caused in this manner is not the heartbeat of a living person but that of a machine.

[As Rav Shapira himself stated, this information is based on medical sources, but nowhere is there any attempt to prove that there is a basis for this distinction in Halacha. The critical role assigned to the brain stem is indeed accepted by the overwhelming majority of the medical community, but whether and why this should have any bearing in Halacha, has not been demonstrated by Rav Shapira based on rabbinic sources. Accordingly, no compelling halachic argument has been offered to reject the significance of artificial respiration, even in a case of a “brain dead” person. Additionally, Rav Shapira’s negation of the halachic significance of mechanically induced respiration and the heartbeat it enables introduces an additional difficulty, namely that there are patients suffering from various maladies (to the heart or other vital organs), who are clearly incapable of living without the benefit of mechanical assistance and yet who are considered very much alive. (See Section II of this paper, “Medical Introduction” – “Other Conditions that may Result in the Permanent Cessation of Spontaneous Respiration”). This weakness was noted in the 1991 ruling by the majority of the Vaad Halacha of the RCA in its rejection of the ruling of the Rabbanut; see Section V of this paper, “Responses of Leading American Poskim to Questions Posed by the Vaad Halacha” on the comments of Rav Mordechai Willig.]

Rav Shapira also addressed the relevance of *ערכין ז*. (pages 19-20). He significantly points out that a sharp distinction is made there between a natural death (in which case the fetus must predecease the mother) and a death based on trauma (where the fetus can indeed survive the mother’s death for some time). Accordingly, he wrote that the “sheep experiment,”²³¹ which was conducted to remove this source as an objection to “brain death,” was of no value in his opinion, since a decapitated sheep was also a “victim” of trauma, and even though it could continue its

²³¹ See Section VII of this paper “The Rulings of Other Leading Poskim”, subsection “Rav Shlomo Zalman Auerbach.”

pregnancy for a limited time with life support, there never was any halachic question about such a case in the first place, as it only confirmed the distinctions already spelled out in ערכין.

Rav Dr. Avraham Steinberg

Dr. Avraham Steinberg, a pediatric neurologist in Jerusalem, well known in the field of Jewish medical ethics, served as the primary medical adviser to the Rabbanut in making this decision. As primary medical advisor to the מועצת הרבנות הראשית in its ruling on organ transplantation, Dr. Steinberg wrote about his understanding of the issues and of their ruling (אור המזרח, תשרי תשמ"ח), as well as numerous other articles); all page references are to that article. In addition, members of the RCA's Vaad Halacha spoke with Dr. Steinberg, to confirm his various positions and clarify difficult points. His oral comments were incorporated with his written arguments below. All of his oral communications mentioned refer to this interview.²³² During that interview Dr. Steinberg stated that he had been responsible for the medical education of the Rabbis involved; as such, his medical and halachic understandings are crucial in understanding the ruling of the Rabbanut. Dr. Steinberg also repeatedly stressed that the leading authority and פוסק in this process was Rav Yisraeli.

Three primary issues were addressed in the discussions with Dr. Steinberg:

- A) What process was used by the רבנות in arriving at its פסק?
- B) What were the sources and logic of that פסק?
- C) What is the practical application of the פסק in Israel today?

[Comments in brackets are our own and were neither part of his article, nor of the interview.]

1. יומא פה

Perhaps the most pivotal statement of the article is where Dr. Steinberg writes (page 49, section 6) that the only criteria found in ש"ס and the פוסקים הראשונים is respiration. He then states that “it is clear that lack of respiration is not in itself death, it is rather symptomatic of a more fundamental injury, that of the (organ) which is responsible for the function of respiration (i.e. the brain), and this is what defines death.”

[This statement, however, seems to ignore the words of רש"י and the many who follow him, that while breathing may be easier to verify, in fact cardiac activity is indeed a sign of life.]

The author again points out (final paragraph on page 56, continuing onto page 57) that there is no source in the Talmud for heartbeat to be considered as a sign of life, acknowledging in a brief parenthetical comment that “only” רש"י had this text.

[Following this idea it need be asked whether the words of רש"י have been properly understood. Dr. Steinberg writes, even according to the גירסא used by רש"י, that the opinion that argues for checking the heart is rejected by the גמרא. However, a basic reading of רש"י reveals that this interpretation of the גמרא according to רש"י is incorrect, as the latter himself explains the conclusion of the גמרא, writing that sometimes one cannot detect cardiac activity in the chest, so

²³² Interviewed November 30, 2006.

instead one should check for respiration at the nose, since that is easier to detect. Following these words of רש"י, there is no conflict between respiration and cardiac activity, as both are clearly signs of life; the only issue is whether the apparent absence of heartbeat is to be taken as a sign of death, since it may be present but not detected. Clearly according to רש"י, if cardiac activity were present it would be a sign of life. When questioned on this point, Dr. Steinberg presented a different approach to the opinion of רש"י. (See below)]

The author (page 56) addresses the issue of variant texts of יומא פה. While all versions do have the word חוטם (nose), the version found in our texts today (based on רש"י) reads לבו (heart) while other ראשונים had the word טיבור (navel). The text of רש"י, which would seem to support the idea that cardiac activity is a sign of life, is brushed aside as little more than a textual error of no consequence.

[While it is clear that רי"ף and רא"ש did indeed have the text of טיבור, it is unclear whether this is of any consequence in הלכה. This is perhaps best seen in the words of מאירי. Commenting on that same piece of the גמרא, the מאירי writes “even though he checked until the navel or the heart” (אע"פ שבדק עד טיבורו או לבו). While it is not clear which text he had in front of him, it is clear from his comments that the textual variation would be of no real consequence. Rav Moshe Feinstein also took this approach (אגרות משה י"ד ח"ב סי' קמ"ו) as detailed in Section III, “Analysis of Yoma 85a”.]

When Dr. Steinberg was asked about how יומא פה was understood in the פסק of the רבנות, he explained that when the גמרא as explained by רש"י, mentions the לב, it too referred to נשימה (since until relatively recently in history it was thought that the heart pumped air and not blood), accordingly, even within the explanation of רש"י, everything would depend on breathing.²³³

[While the question that Dr. Steinberg's new approach to רש"י raises is quite real (we should assume that חז"ל had at least the standard medical knowledge of the day), his explanation seems to introduce more questions than it answers. Whatever חז"ל understood about the function of the heart, and how well they understood it, are indeed potentially important questions. Nonetheless, according to the גירסא of Rashi, they did state that death can only be established once irreversible cessation of heartbeat has occurred, and their ruling may very well be independent of their understanding of the physiology of the heartbeat as it well may be a מסורה מסיני as suggested in שו"ת חתם סופר (י"ד סי' של"ה).

Moreover, if we were to suggest that the medical information that they used was faulty, one would have to ask: how can we utilize that same knowledge based on our “better” understanding? There is much more to be said on this subject, both in terms of the serious questions that Dr. Steinberg did raise and in terms of what conclusions can or should be reached, ואכמ"ל.

But aside from the various conclusions that may be reached following this line of thought, more directly to the point, while Dr. Steinberg's interpretation may remove the direct challenge presented by רש"י writing about heartbeat, it fails to provide a good and clear reading of the גמרא.

²³³ This is significantly different from what he wrote in אור המזרח (תשרי תשמ"ה) where this opinion of רש"י is taken at face value to refer to the beating of the heart, but is treated as little more than a textual error; see next section for elaboration on his written opinion.

The גמרא attempted to compare the מחלוקת about where in the body to look for signs of life with the מחלוקת about what part of the fetus is first formed²³⁴ (or is its formation first noticed); but if one explains that both opinions were always focusing on respiration then this whole comparison would seem to make little sense. Similarly, the use of the פסוק of כָּל אֲשֶׁר נִשְׁמַת רוּחַ חַיִּים בְּאִפְיוֹ to differentiate between the two opinions would seem to be of limited value, if the primacy of respiration was never in question, as the only question at hand would be which location is best for detecting respiration in these severely injured patients. See Section III “Analysis of Yoma 85a” for more details.]

The author then quotes (page 56) both the סופר and אגרות משה, stating that neither of these authorities ever mentioned the heart in reference to that passage of the Talmud (unlike those Rabbis who did so in their interpretations). He goes further, stating that any attempt to suggest that the Talmud considered cardiac activity as a primary sign of life would be reading in words that are simply not to be found.

[If this is the case, however, it raises the following question: Firstly, as seen in אגרות משה (י"ד ה"ב ס"א קמ"ו) Rav Moshe clearly does speak about the role of the heart in explaining יומא פה. Additionally, even if it were correct to say that these two Sages did not use these words in specifically explaining that passage of the Talmud, can it be said that they did not consider the heart as an indicator of life? As the חת"ס (ש"ת ח"ד ס"א של"ח) clearly writes that if the three signs of death (lying still like a stone, no heartbeat, and no respiration) all exist, there is no doubt that the person has died. Similarly, Rav Moshe Feinstein writes in that same תשובה that if an EKG shows cardiac activity, even without spontaneous respiration, the patient is to be considered alive. Had they indeed felt that this סוגיא precluded heartbeat as a sign of life, such words could not have been written in a responsum even if it were not an explanation of that passage of the גמרא.]

In commenting (page 56, the paragraph in parenthesis) about those who claim that cessation of cardiac activity is a standard based on the גמרא, Dr. Steinberg writes ואז יוצא שהעיקר חסר מן הספר (that it then would come out that the main point is not found in the text).

[The objection that this statement brings up is that these words can only be said if the text following רש"י and his comments are to be considered to have no validity, which does seem to be the assumption of Dr. Steinberg's article. However, according to all standard interpretations, those of supporters of the “brain death” criteria like Rav Mordechai Eliyahu included, to exclude the straightforward reading of the words of רש"י from a serious analysis of the גמרא is simply not an acceptable option.]

2. הוּתוּ רֵאשׁוּ (חולין כא)

In comparing the cases of נשברה מפרקת ורוב בשר עמה או שנקרע כדג מגבו to standard cases of “brain death”, he writes (final paragraph, page 56) that “even though it is possible to find distinctions between these extreme cases and between cases of regular deaths, nevertheless, it seems that the continued functioning of the heart would not necessarily be considered as a sign of life” (אף שניתן)

²³⁴ As noted in our explanation of יומא פה (Section III), in a developing embryo the heartbeat begins before the Central Nervous System has developed which might well support the idea that they indeed were speaking of cardiac activity and not respiration.

למצוא הבדלים בין מצבים נדירים וקיצוניים אלו לבין מצבי מוות רגילים, בכל זאת נראה שעצם פעילת הלב איננה (מהווה בהכרח סימן לחיים).

[While Dr. Steinberg has acknowledged that there are distinctions, they are perhaps far more significant than realized. In the cases mentioned in חולין כא there is no discussion as to whether the heart is still beating; while it is medically possible, that is not acknowledged by חז"ל and likely was not the case. Secondly, even if there would be heartbeat and it were acknowledged by חז"ל, that may have little bearing on a modern case of “brain death” as respiration continues, albeit artificially. This second point may relate to an idea pointed out by Rav Elyashiv²³⁵ who stated that this whole comparison to הוהו הראש may be most inaccurate, as the destruction of the brain would at most be equal to הוט השדרה שנפסק, which is not considered an automatic sign of death by the גמרא. This may also relate to a point made by Rav Shlomo Zalman Auerbach that the determination of death in cases of injuries must be made based on the most up to date medical knowledge and techniques,²³⁶ so that a person buried in rubble may not be declared dead merely because there is no detectable respiration. Similarly, it is quite possible that some cases of נשברה מפרקתו could be saved through modern medical techniques.

Additionally and perhaps most significantly, as Rav Hershel Schachter has pointed out²³⁷ all of the cases in חולין כא involved major bleeding injuries to the neck or body; as such, even the continued beating of the heart for a short period of time in these extreme cases would be of no significance as the blood has been pumped out of the body and is not being circulated. This, he explains, is the question at hand in that סוגיא; exactly which injuries are so extreme so that the continued beating of the heart can no longer be considered an indicator of life. Accordingly, the distinctions between the cases in that סוגיא and regular “brain death” cases are most significant and could well negate the comparison Dr. Steinberg makes between the roles of heartbeat in each of these two cases.]

3. Our Ability to Establish a New Standard to Determine Death

Throughout the conversation, Dr. Steinberg equated “brain death” with cessation of spontaneous respiration. According to his view, even though, חז"ל obviously did not speak about “brain death” and did not utilize it as criterion of death, given that – according to his understanding – they did accept that the lack of spontaneous respiration indicates death, “brain death” is meaningful, as it proves that this cessation of spontaneous respiration has indeed taken place.

One of the most significant statements made by the author is when he explains how lacking sources in the Talmud, the Halacha should still consider death of the brain as the criterion for death (page 57, paragraphs starting with והנה and הויצא). In the first of these paragraphs he writes that:

And behold, it is clear that our sages did not intend to say that the nose is what establishes life, as it is not an organ that life depends on. What our sages taught us is that breath is the sign of life and the lack thereof is the sign of death. However, it is placed upon us to find out what stands as the basis of breathing, what is it that

²³⁵ As written in by Rav Yitzchak Zylberstein in (החוג לרפואה והלכה) the halacha, also see Section VII, “The Rulings of Other Leading Poskim,” subsection “Rav Yosef Shalom Elyashiv.”

²³⁶ מנחת שלמה (ח"ב סי' פ"ג אות א')

²³⁷ ספר בעקבי הצאן (סל' ל"ו אות י"ג)

actually causes it? Assumedly that organ whose function causes it to stop, that organ should be the one that would indicate death, if it indeed results in loss of spontaneous respiration. The answer to this, based on our scientific knowledge of today, it is the brain (and not the heart) which is what causes breathing.

Continuing in the next paragraph with this same line of thinking, he writes:

that the moment of death takes place when the respiration has irreversibly stopped... There is no source in the Talmud or ראשונים that there is any connection between respiration and the heart, therefore there is no testimony from the Talmud and the early Poskim to require that the heart stop to declare death... It is true that there is no rabbinic source that respiration is dependant on the brain, (just as there is no such statement that it depends on the heart), however, based on our knowledge today, that it does depend on the brain, so cessation of respiration can be verified based on the brain.

[Having once again asserted that there is only one opinion in the Talmud, namely the one supporting respiration as the sole criterion of death, he then proceeds to equate that opinion with acceptance of “brain death.” Namely, that given that respiration is the sign of life and that it clearly is not caused by the nose, the determinant of life must then be the brain, which directs breathing.

However, there is no compelling reason to accept this particular understanding given that several other valid explanations exist, no less compelling than his, each of them presenting significant questions to his proposed interpretation. First of all even if breathing is the sign of life one must ascertain, does this make it the definition of life or just the primary way to detect life? If it is the former, then his approach *may* have a basis (but see below), but if it is the latter, then cardiac activity or any other clear sign of life could show that a person is still alive, despite having ceased to breathe spontaneously. Secondly, even assuming that breathing is the paramount sign of life, has an adequate case been made to show that artificial respiration should be of no significance? In Dr. Steinberg’s own words, the reason he relies on the brain and dismisses the role of the nose is that it (the nose) is not an איבר שהנשמה תלויה בה (“an organ that life depends upon”), however, the heart and the liver are also in the category of איבר שהנשמה תלויה בה and no one would suggest that a living person whose heart or liver were artificially maintained would no longer be considered alive merely due to the special status accorded those organs.

In the second of the two above quoted paragraphs, he acknowledges the fact that there is no Rabbinic source that respiration is based on the brain, but he adds, so too is there no source that it is based on the heart either. While not directly stated, it is clearly implied in his words that since the idea of cardiac criteria for respiratory death was clearly without basis, it would make far more sense to utilize the brain criteria, since that is scientifically backed up.

It would seem that in these words Dr. Steinberg is not just referring to the obvious medical fact that in a healthy body the continued function of the cardiac and respiratory systems are in fact dependant on each other, rather, he is understanding that those who use the cardiac criteria of death view the heart as a respiratory organ (of sorts). The issue at hand however is twofold.

Firstly, while perhaps such an idea might be seen in the words of (שו"ת סי' ע"ז) חכם צבי, this is not at all the general understanding of those who support a cardiac criterion for death. It is Dr. Steinberg himself, who has read this idea into the words of רש"י, but is far from the standard explanation of the words of רש"י. More correctly, this difficult to understand connection between cardiac activity and respiration would seem to have no place in this discussion. Secondly, even if one halachically unsubstantiated assumption has been made, this would hardly justify making another.]

A major point is made (bottom of page 52) that a heart, even when disconnected from the body, can continue to beat for an extended period of time if it is provided with proper nutrition.

[This conclusion, however, is weakened by Dr. Robert D. Truog's observations, which lead him to state²³⁸ that the body of a "brain dead" person far more closely resembles that of a living person than that of a dead one. (See Section II, Medical Introduction) Accordingly, can a heart beating outside of the body under artificial conditions really be equated with a heart that continues to beat, circulate blood, and help maintain a variety of bodily functions? It could well be suggested that such a heart would more likely resemble the slaughtered chicken that continued to "run around," clearly understood by all to be mere spasmodic motion (פירכוס בעלמא) and would not resemble the cardiac activity seen in an intact body.²³⁹ Of possibly even greater significance is the understanding of Rav J. David Bleich and Rav Hershel Schachter (mentioned in Section IV, Decapitation, Virtual Decapitation and Brain Death and note #71) that it is not the mere beating of the heart that indicates life, but that heartbeat is the primary example of vital motion in a living body, which is not germane in the case of a heart removed from the body. Additionally, the fact that fetal heartbeat begins prior to the development of the central nervous system and the onset of respiration might also suggest that a heart functioning as part of a living being should not be compared to one that has been removed, and that the lack of either brain or respiratory activity does not at all negate the meaning of a beating heart.]

In his conclusion (page 65, first paragraph), Dr. Steinberg once again insists that there is no possible criterion for death found in rabbinic sources other than respiration.

[As explained in Section II of this paper, "Medical Introduction"²⁴⁰, considering the loss of spontaneous respiration as the sole and unique criterion of the onset of death is medically untenable, since those symptoms may also occur in unquestionably live patients suffering from certain conditions. Subsequent to their initial ruling, Rav Yisraeli addressed²⁴¹ this concern, adding the stipulation that the patient must not only permanently have ceased respiration, but also must be מוטל כאבן (lying still like a stone). Nonetheless, Rav Yisraeli did not consider the beating of the heart as meaningful movement, but rather פירכוס בעלמא (spasmodic movement). However, even with this additional criterion, a comatose patient with severed or damaged nerves or an apneic permanently comatose patient would still present a challenge, as according to Rav

²³⁸ Truog RD, Robinson WM. "Role of brain death and the dead-donor rule in the ethics of organ transplantation," *Critical Care Medicine* 2003; 31(9): 2391-2396 and "Brain Death-Too Flawed to Endure, Too Ingrained to Abandon" *The Journal of Law, Medicine and Ethics* (2007), (35) 2 273-281.

²³⁹ For more detail see Section IV of this paper "Decapitation, Virtual Decapitation & 'Brain Death'," subsection "Understanding Chulin 21 in light of Yoma 85."

²⁴⁰ Subsection "Other Medical Conditions that Result in Permanent Cessation of Spontaneous Respiration"

²⁴¹ ספר קביעת רגע המוות (המדורה שניה מורחבת, מכון שלזינגר, ירושלים תשס"ח) דפים 308-309

Yisraeli's criteria they would be dead, while the medical community clearly regards them as alive, with many such patients in hospital intensive care units.

It is similarly noteworthy that it is not at all clear whether spontaneous respiration or the lack thereof was indeed accepted by חז"ל as the determinant of life (as opposed to being a mere sign of life). The פסק of the רבנות quotes from the (י"ד סי' של"ה) שו"ת חת"ס, supporting their interpretation of this matter, but it should be noted that this is only one possible reading of his words; it is a reading that many פוסקים do not accept and such a reading creates significant inconsistencies in the understanding of this תשובה of the חת"ס.]

4. שו"ת חתם סופר (י"ד סימן של"ה)

One of the seemingly strongest supports for a cardiac standard is the above mentioned responsum of the חתם סופר. In his effort to deflect the questions that it would provoke, Dr. Steinberg writes (page 59, starting with paragraph 3) that the חתם סופר lays out an order of the events, with the patient first lying still like a stone, then the heart stopping, followed by cessation of respiration. Given that this is not the order of events in cases of “brain death,” he writes that the words of the חתם סופר are not relevant to that case.

[While he certainly is correct in pointing out that the חתם סופר described a certain sequence of events, there is no compelling reason to suggest that these same criteria, when out of order, would not be significant. In fact, from a medical perspective one would be hard pressed to see why this particular order would be needed; this is especially so, as lacking artificial life support these events would essentially occur simultaneously. It would be far more plausible to suggest that the חתם סופר used this order because that was the normal order of events as he perceived them, but would by no means be excluding cases when that was not the sequence. Or alternatively, as explained by Rav J. David Bleich “Cessation of respiration constitutes the operative definition of death only because lack of respiration is also indicative of prior cessation of cardiac activity.”²⁴²]

5. **The Position of Rav Moshe Feinstein**

Dr. Steinberg confirmed during our conversation that the presumed opinion of Rav Moshe was a very significant factor in this פסק. However the authors of the ruling at no time consulted directly with Rav Moshe. Rather, this understanding was based upon their own interpretation of his writings, esp. אג"מ י"ד ה"ג and on, as well as what they labeled the עדות נאמנה of his son-in-law, Rav Tendler. The committee was aware that not all accepted this as an authoritative understanding. [It should be noted that Rav Moshe passed away early in 1986, and for some time before was not in a position to answer such questions.]

The fact that in a particular responsum Rav Moshe (אגרות משה י"ד ה"ב סי' קמ"ו) clearly accepts cessation of cardiac activity and rejects “brain death” as criteria of death is addressed by Dr. Steinberg (page 61, section ב'). He correctly points out that the medical assumptions used in his responsum are not accurate (this may also an issue in י"ד ה"ג סי' קל"ב, but that is generally overlooked). Accordingly, he writes that the rejection of “brain death” that is found in that piece is of no meaning.

²⁴² “Establishing Criteria of Death”, Rav J. David Bleich, *Tradition*, vol. 13, no. 3, winter 1973, page 95.

[The objection to this point would be that while Dr. Steinberg is factually correct, it is of little significance, as Rav Feinstein clearly writes in that same piece that the brain cannot be a criterion for death because our Sages never acknowledged it as such

דהא לא הוזכר סימן חיות במוח, ולא שייך לומר נשתנו הטבעים בזה, דגם בימי חז"ל היה המוח פועל בפעולות כמו בזמננו וכל חיות האדם היה בא ממנו ומ"מ לא היה נחשב מת בפסיקת פעולת המוח, וכמו כן ברור שגם בזמננו הוא כן.²⁴³ Additionally, the fact that Rav Feinstein did consider cardiac activity to be a sign of life is not addressed.]

Subsequently, Dr. Steinberg (page 62, top paragraph) does quote the above words from Rav Moshe, that the brain cannot be a criteria of death since חז"ל did not consider it, and Dr. Steinberg then adds that so too the heart cannot be considered a sign of life since it is not mentioned by חז"ל.

[There are two very significant objections that these words bring up: firstly, according to our text of the גמרא (and that of רש"י) the heart is indeed mentioned by חז"ל as a sign of life. Secondly, in that very same responsum where Rav Moshe rejected the brain as a sign of death, he did accept the heart as a sign of life.]

Commenting on the piece in (י"ד ה"ג סי' קל"ב) where Rav Moshe does seem to incline towards supporting the "brain death" criteria, he writes "that these words are certainly based on the scientific article of his son-in-law, which established clearly that brain death is the criterion in Halacha and cardiac activity is of no consequence in this regard."

[The fact that Rav Tendler has written this is certainly agreed upon by all, but the question is what Rav Feinstein himself said and thought. In this very responsum, which is addressed to Rav Tendler, Rav Moshe is careful to formulate his answer predicated entirely on the assumption that Rav Tendler's scientific position is in fact correct. As Rav Feinstein has written "according to what you are saying."²⁴⁴]

As further support for his position, Dr. Steinberg quotes Rav Moshe Tendler (top of page 61) as reporting that in his later years Rav Moshe Feinstein permitted Jews to receive heart transplants.

[This statement is of little relevance to the discussion of accepting the "brain death" criteria and organ donation, as the fact that Rav Moshe may have permitted receiving an organ does not prove that he permitted donation of organs based on "brain death". As one of Rav Moshe's closest students, Rav Aharon Felder has reported, Rav Feinstein specifically commented that there need not be any correlation between donating and receiving.²⁴⁵]

²⁴³ For further analysis of this matter, see Section VI, "The Opinion of Rav Moshe Feinstein", subsection "The Written Rulings," part 2, and "The Oral Record," part 2.

²⁴⁴ The nature of the information presented to Rav Moshe is discussed in the section, "The Ruling of Rav Moshe Feinstein." Additionally, it should be noted that if one would follow through the logical consequences of each of Rav Moshe's formulations presented there, it would come out that a patient with irreversible injuries to the nerves controlling breathing would be declared dead even if he were not brain dead (while the particular patient under discussion would seem to be comatose, it is not clear from his logic that he would actually require the patient to be comatose). This assumption is not accepted by doctors, who in fact would consider this person alive.

²⁴⁵ For further elaboration, see Section VI, "The Opinion of Rav Moshe Feinstein," "The Oral Record," subsection 5, "Rav Aharon Felder".

Dr. Steinberg was asked about the words of (סי' קל"ב) יר"ד ה"ג which speaks of the brain as נרקב לגמרי. He understands this to be referring to the liquefaction of the brain. When asked that this in fact does not necessarily coincide with the moment of "brain death" and may often only occur significantly later (if at all), his response was that the protocols of brain death do not allow removing a patient from machinery until they have lingered there for some time (from 6 to 24 hours, depending on the institution), thus insuring that by the time they are removed, this process will indeed have occurred.

[This answer raises the following issues: if one accepts "brain death" as death, then its criteria should be met at the moment of "brain death", and not at a later time, after a possibly lengthy process, as pointed out in the Medical Introduction to this paper (see subsection "Additional Concerns with the Implementation of the 'Brain Stem' Standard"). Furthermore, if the words of Rav Moshe are to be taken at face value and not to be reinterpreted, he only acquiesced regarding cases when this process has been completed (נרקב לגמרי); meanwhile, given today's state of medical knowledge, this is a process that would likely *never* take place prior to the removal of organs for transplant²⁴⁶. Accordingly, it becomes increasingly difficult to glean permission to remove organs following "brain death" based on the writings of Rav Moshe.]

6. The Onset of "Halachically Valid Brain Death"

In the final paragraph (bottom of page 65), Dr. Steinberg writes that after repeated testing for "brain death," once the declaration of death has been made, the person would be considered as dead retroactively from the first test (or more precisely from the moment of "brain death" which presumably had preceded the first test). While that was not said to explain the words of Rav Moshe Feinstein, it is quite striking that in our conversation with Dr. Steinberg regarding the words of Rav Moshe "completely decayed" (נרקב לגמרי as found in סי' קל"ב), he commented that this may not be the case at the moment of brain death – but by the time the organs are removed it will be definitely be true. The seeming discrepancy between these statements is based on the fact that Dr. Steinberg himself is using "brain death" primarily as a verification that spontaneous respiration has ceased, while Rav Feinstein (who was seemingly commenting based on factually imprecise information), previously having clearly and irrevocably rejected brain death, was willing to consider the complete and utter destruction or effective removal of the brain. While these events generally do not transpire, even if they would, it would be far later in time than the moment that "brain death" is declared, and far later than the moment when organs are generally removed for transplant.

During our conversation, Dr. Steinberg was asked about the fact that even after "brain death" has occurred, certain brain activity remains, such as the hypothalamus controlling body temperature. He mentioned that they had indeed addressed this matter, and concluded that the hypothalamus is a gland that is located in the brain and not a part of the brain²⁴⁷.

²⁴⁶ See "Neuropathology of brain death in the modern transplant era" Eelco F.M. Wijdicks & Eric A. Pfeifer, *Neurology*, 2008; 70; 1234-1237, where recent research confirms that in the period of 12 to 36 hours following the declaration of "brain death" when organs are removed for transplant, total brain necrosis is only found in the minority of cases, and is certainly not completed in this time period.

²⁴⁷ See above (in this same section) where Rav Zalman Nechemia Goldberg is quoted as stating that this information was not presented to him for deliberation. Assumedly the decision to not consider it as part of the brain

[The standard by which Prof. Steinberg considers the hypothalamus external to the brain is arbitrary and certainly not sourced in Halacha (as there is no “halachic” definition of the brain for these purposes). More importantly, as indicated in the Medical Introduction, standard medical texts²⁴⁸ clearly consider the hypothalamus as part of the brain, serving both neural and endocrinal functions. When interviewed, numerous physicians²⁴⁹, neurologists included, found his assertion to be most surprising. What Dr. Steinberg did not want to say is that even after “brain death” the brain is not fully dead; as noted by the President’s Council report quoted in the Medical Introduction, this indeed is correct, confusing or disturbing as it may be.]

7. The Position of Rav Shlomo Zalman Auerbach

While the Rabbanut did not take Rav Shlomo Zalman Auerbach's position into account in its deliberations, nevertheless, during the interview we discussed his view with Dr. Steinberg. Dr. Steinberg recognized that Rav Shlomo Zalman’s opinion regarded the issue of “brain death” as one of ספק, thus not allowing for its use in the removal of organs for transplant. He was present at the “sheep experiment” which was done in order to answer questions that Rav Auerbach had raised. Dr. Steinberg did say that the results caused Rav Shlomo Zalman to reconsider these matters, but even after reconsidering, he left the matter a ספק and did not permit relying on “brain death.” As Dr. Steinberg understands it, Rav Shlomo Zalman’s reasoning is comprised of two points. Firstly, given that the patient is a גוסס and the tests are clearly not for his benefit, there is no permission to administer any such tests. Secondly, he insisted that if “brain death” were to be the criterion, it would have to entail the complete shutting down of the entire brain, meaning the death of each and every cell. Dr. Steinberg made it clear that in the standard medical definition of “brain death,” even after “brain death” has taken place this does not mean that 100% of the brain has shut down, and even were that to be so, it is not possible to verify it.

Dr. Steinberg stated that he is troubled by the approach followed by Rav Shlomo Zalman requiring the death of each and every cell of the brain, since after all, even following the traditional standard of cardiac death there are certainly cells in the heart that remain alive.

[The distinction that may exist between the death of all brain cells and the death of all heart cells, is that when חז"ל considered cardiac death, they intended the cessation of the normal functioning of the heart (as can be detected by its beating), so the loss of heart function would indicate the loss of life. However, when it comes to the brain, we simply have no such tradition. If its failure is going to indicate death, Rav Shlomo Zalman insisted on its complete and utter death and not just the functions indicated in the “brain death” criteria.]

8. Elaborating on Rav Shaul Yisraeli's Published Position

In the course of our discussion with Dr. Steinberg, we also raised two question relating to the published position of Rav Yisraeli, whom Dr. Steinberg had acknowledged as the main פוסק and

was either addressed by the doctors prior to their presentation to the Rabbanim or was not known or appreciated until a later date.

²⁴⁸ Subsection “Continuing Brain and Other Functions after the Onset of ‘Brain Death’,” and footnote #16 on that page.

²⁴⁹ See note #1. Even if one were to view the endocrinal portions of the Hypothalamus as not being part of the brain, in many cases the neural functions also continue following “brain death” as spelled out in Section II, “Medical Introduction” subsection “Continuing Brain and Other Functions after the Onset of Brain Death”.

authority on this matter for the Rabbanut at the time its פסק was issued: Rav Yisraeli seems to understand the טריגיא in יומא as saying a) that his skull was crushed, precluding any other major bodily injuries as the cause of his lack of respiration, and b) the proper way to understand that passage of גמרא is based on the “fact” that חז"ל knew of the possibility of a heart beating without respiration. This scenario is factually difficult prior to the advent of artificial respiration. No answers were suggested with regard to these issues, which Dr. Steinberg acknowledged were highly problematic.

9. The Relevance of the Patient's Status as a טריפה

Footnote #26 of the full version of the פסק of the Rabbanut mentions the fact that victims of auto accidents who are suitable candidates to donate organs are in the category of טריפה. This would seem to indicate that this too was a factor in the ruling. Dr. Steinberg insists that this is not correct; his understanding is that the ruling accepted “brain death” completely, and is not at all dependant on the donor being a טריפה, and this was just added as an additional possible סניף.

Even though the פסק says that it specifically is addressing accident victims and should be used for heart transplant purposes only, in practice the “brain death” criteria is used in many other cases. This, Dr. Steinberg explained, is done under the guidance of Rav Mordechai Eliyahu. This includes taking livers from stroke victims and shutting off respirators even when there is no possibility of transplant. Dr. Steinberg explained that the fact that the original פסק only dealt with heart transplants from auto accident victims is simply because this was the question that was asked, but by no means was the subject meant to exclude other possibilities. His understanding of the פסק was that it accepted “brain death” as criteria for death in all cases.

[When we approached Rav Mordechai Eliyahu (January 2007) he declared that he himself does not rule on this most difficult matter, but that instead he sends those who ask him about it to Dr. Mordechai Halperin. This need not be viewed as contrary to the role attributed to him by Dr. Steinberg, as Dr. Halperin is working at Rav Eliyahu’s directive.²⁵⁰]

[However, the simple understanding of the words of footnote #26 does seem to imply that this is a limitation in the פסק and not just an added factor. See comments of Rav Lazar Shapiro quoted in footnote at the end of this section on this matter]

10. Reliance on the Medical Establishment

Dr. Steinberg writes (page 48, section 3, and again on page 61, last paragraph) that “the reliability of doctors based on “brain death” is certainly no less than the declaration of death that was based on the classic criteria” (of cardiac activity and respiration).

[The question, however, is not whether doctors today are capable of a more precise measurement of physiological criteria, but rather whether in fact doctors and hospitals precisely follow the requisite procedures in their determination of death. As mentioned before, in practice, there are significant issues with the implementation of the “brain death” protocols. This, of course, does not affect the status of “brain death” in Halacha, but is quite relevant for its practical implementation.]

²⁵⁰ As will be described in the next subsection, Dr. Halperin has a somewhat different understanding of the Ruling of the Rabbanut and its limitations.

11. The Schneller Law and the Legal Force of the Rabbanut's Ruling

While this does not impact the halachic issues of “brain death” and organ transplantation, the protocol of the רבנות had until recently never been followed in Israel as a matter of policy. Their initial פסק stated that unless all conditions of the פסק will be followed, permission for heart transplants is not to be granted. The Health Ministry had consistently resisted one major condition of the פסק, namely, that a representative of the רבנות (appropriate יראי שמים doctors) be a part of the decision making process to insure that the patient is indeed dead. [This same concern has been expressed both in America and Great Britain, where recent studies of the guidelines that are set and used by leading medical centers in determining “brain death” were found to be inconsistent both on the theoretical and practical level, with many tests, apnea included, being performed inadequately and sometimes not at all.²⁵¹]

The Ministry (and the medical community in general) resented, and until recently had rejected the idea of Rabbinic control over medical practice.

However, oversight following the full protocols of the רבנות has been available to those who requested it, even prior to the most recent legal changes. Dr. Steinberg himself has served in this capacity when requested.

In March 2008 the Knesset passed the “Schneller” bill into law. While the passage of a law in the Knesset does not affect the status of “brain death” in Halacha in the least, it does have a number of significant ramifications. The new law finally enacts the Rabbanut’s requirement that its approved representative be part of the team declaring a prospective donor “brain dead.” It also legislates that no patient be declared “brain dead” without appropriate testing, to insure that spontaneous respiration has demonstrably ceased (generally through an apnea test). The legislation also provides protection for those individuals and families who do not accept “brain death” as death, legally guaranteeing that medical services will continue to be provided.²⁵²

While this ruling of the Rabbanut has great meaning for many in Israel, it must be carefully noted that it does not necessarily have such significance outside of Israel, since it is a clearly stated condition that without the participation of Rabbanut approved individuals in the medical team, pronouncements of “brain death” are not sufficiently reliable to act upon. While this has

²⁵¹ See Section II, “Medical Introduction”; subsection “Additional Concerns with the Implementation of the ‘Brain Stem’ Standard.”

²⁵² These three points and their accompanying explanations were provided in a written communication from Rav Dr. Mordechai Halperin, April 2008.

The law requires that the testing be done by two doctors who are not otherwise involved in the care of the patient. The clinical diagnosis must be verified by an examination using one of five different tools: the brainstem auditory evoked response test (BAER); the somatosensory evoked potential test (SEP), or tests that examine the flow of blood in the brain, including transcranial Doppler test (TCD); a computed tomography with angiography (CT-A) exam or a magnetic resonance imaging exam with angiography (MRA).

It should be noted that regardless of how some Orthodox opponents of the “brain death” criteria understood this exemption at the time the legislation was enacted; subsequently it has been interpreted to mean that artificial respiration will be provided, but hydration and nutrition will not be. As Dr. Steinberg mentioned while lecturing December 16, 2008 in Portland Oregon (as reported in the February 8, 2009 Jewish Review) that the legislation does not acknowledge two forms of death, it merely allows the family to maintain artificial respiration until cardiac arrest occurs; accordingly, doctors have refused to “feed a cadaver”.

recently changed in Israel allowing the fulfillment of their ruling, it is clearly not the case elsewhere, although it may be possible to make similar arrangements in some cases.

Even in the short amount of time since this bill became a law, it has indeed had a significant impact, being either a great success or a major problem, depending on one's point of view. On April 27, 2010 the Israeli daily Haaretz reported on information provided by the Israel Transplant Education Unit. This article stated that they had "found that between January and March 2010, for example, there were only 25 cases out of a total of 46 potential cases, according to clinical examinations, in which a patient was determined to be legally brain dead under the criteria outline in the 2009 law-a rate of just 54%." While the article continues and states that "Transplant experts say the low rate is due to technical problems related to the equipment used to verify cases of clinical brain death" thus implying that these indications of life were of no value, such in fact is not necessarily the case as seen from the rest of this article. It further states "In light of the findings, a panel of medical officials in the Health Ministry, which is tasked with monitoring the repercussions of the law concerning the diagnosis of brain death, resolved to update the criteria in order to increase the amount of organ donations." However, this should not be understood merely as a "technical problem due to the equipment used" as the article clearly states "In some instances, however, these examinations detect physiological processes still ongoing in patients who have been clinically declared brain dead."

This brings two major questions to the fore. Firstly, the fact that hardly a year before this information came out both the medical establishment and the Rabbanut seemed most satisfied with these criteria. It is most difficult to suggest that the Israeli medical establishment did not understand the workings or limitations of these tests. Secondly and most disturbingly, the article states directly that following the criteria established by the Rabbanut and the Health Ministry, signs of life have indeed been detected in patients considered "brain dead" based on clinical observations alone. This is not a mere "technical problem due to the equipment used", it is a sign of life according to the criteria established by the Rabbanut. How the Rabbanut will respond to these possible moves is yet unclear, as the possible reevaluation may or may not involve the Rabbanut.

Since data was not made available to us by either the Israeli Health Ministry nor the Transplant Education Unit, the question remains as to whether these new tests which they are contemplating moving to will be capable of detecting the signs of life that have been found with the existing battery of tests. If they are not, this will be a most disturbing prospect both from the point of view of halachic and medical ethics as well.

Rav Dr. Mordechai Halperin

Dr. Halperin served as the other medical advisor to the Rabbanut in this issue. As noted above, Rav Mordechai Eliyahu has stated that when questions regarding transplants come to him, he refers them to Dr. Halperin, giving him a most significant role in this process. The list of questions which the Vaad Halacha had prepared for Rav Mordechai Eliyahu was forwarded to

Dr. Halperin. [The following is based on his written replies to these questions²⁵³; subsequent conversations and additional written communications that have taken place as well.²⁵⁴]

The fundamental principle on which the ruling of the Rabbanut was based is that irreversible cessation of spontaneous respiration is the criterion of death, with “brain death” being a most reliable way to verify this. Nevertheless, the Rabbanut specifically limited its ruling to heart transplants and only in cases of accidents (not strokes). This level of caution, Dr. Halperin pointed out, was taken at the time for both practical reasons (success rates with other organs was much lower) and “theoretical” ones, namely that the application of this ruling was so new, and also in order to maintain practical control over the practice. He notes that this caution was well based, as events in Israel have borne out the Rabbanut’s concern (he did not spell out which events he was referring to).

Since the ruling of the Rabbanut was based on the irreversible cessation of spontaneous respiration, Dr. Halperin notes that it should not matter how this fact is proven; it could be through tests to the brain showing “brain stem death”, apnea tests, or any other test showing irreversible cessation of respiration. However, he does state that this only applies to a comatose patient (who is מוטל כאבן).

[It should be noted that this understanding could declare dead an end stage ALS patient incapable of spontaneous respiration or an accident victim with a severed spine which caused irreversible damage to the nerves leading to the lungs, thereby permanently preventing spontaneous respiration. This was seemingly not their intention, and was so clarified by Rav Yisraeli in subsequent writings.²⁵⁵ In these writings he distinguishes between cessation of respiration due to “brain death” and cases due to other, external causes. The problem with this approach is that on one hand it says that lack of spontaneous respiration is the sign of death, but insists that this is only true when the cause can be traced to the brain; while it is clear how the respiratory standard could be derived from יומא פה,²⁵⁶ there would not seem to be any basis in ש"ס ופוסקים to make the artificial distinction that it must be due to brain injury and not other causes. This objection to the combination of factors utilized in this ruling of the Rabbanut was first raised in 1991 in the תשובה issued by the majority of the Vaad Halacha of the RCA which rejected both “brain death” and cessation of spontaneous respiration (with a beating heart) as criteria for death.]

Of great significance to this study, Dr. Halperin responded to our question regarding the role of the presumed ruling of Rav Moshe Feinstein.²⁵⁷ He stated that the Rabbanut’s understanding of his ruling was the primary reason that they ruled to permit organ transplants. This was based on

²⁵³ Received September 2007.

²⁵⁴ Winter 2007-08, Spring 2008.

²⁵⁵ See above subsection on Rav Yisraeli’s opinion and also subsection on Rav Dr. Steinberg’s opinion, part 3 and footnote #241.

²⁵⁶ See Section III “Analysis of Yuma 85a” and also Section V, “Responses of Leading American Poskim to Questions Posed by the Vaad Halacha”, on the opinion of Rav Mordechai Willig.

²⁵⁷ He also writes this in his article גלויי דעת-תורה בענין מיתת המוח, available on-line at the website of the Schlesinger Institute for Medical Halachic Research. In that article, he writes that the other prime source of their ruling was the above quoted responsum of the חתם סופר. It is quite striking that the meaning of each of these two major sources used by the Rabbanut are both subjects of great controversy.

their understanding of his written responsum²⁵⁸ (אגרות משה יו"ד ה"ג סי' קל"ב), the explanation provided by his son in law, Rav Tendler,²⁵⁹ and the "Bondi letter."²⁶⁰

Dr. Halperin also addressed the opinion of Rav Shlomo Zalman Auerbach. He noted that Rav Shlomo Zalman also accepted the idea that if every cell in the brain had died the person would be considered dead.

[However, it is also true that throughout his life, Rav Auerbach refused to permit the removal of organs from "brain dead" patients whose heart continued to beat. One of the reasons for this is because this theoretical possibility of "every cell in the brain having died" does not happen in the time frame in which organs are removed for transplant and also because it is impossible to verify.²⁶¹ Accordingly, it is not possible to quote Rav Auerbach as accepting "brain death" as it is commonly understood.]

Dr. Halperin also addressed the role of the various "other factors" that may have played a role in this ruling.²⁶² He responded that indeed, due to the novel nature of this ruling the Rabbanut did utilize the fact that accident victims are in the category of טריפה;²⁶³ accordingly, they did not permit transplants from stroke victims (as they are likely not in the category of טריפה).

Regarding the claim that another reason the Rabbanut permitted the removal of organs was that the procedure is never performed by one doctor (thus being a case of שנים שהרגו); Dr. Halperin stated that this was not a factor in their ruling. In fact, he stated that from a factual point of view this is most likely not correct, as the main procedure is performed by one doctor who does all of

²⁵⁸ See Section VI "The Opinion of Rav Moshe Feinstein", subsection "The Written Record" part 3 which addresses the various interpretations and questions regarding this responsum.

²⁵⁹ This is also stated explicitly in the formal ruling of the Rabbanut.

²⁶⁰ See Section VI "The Opinion of Rav Moshe Feinstein", subsection "The Written Record" part 5 and "The Oral Record" part 1, where the authorship and authenticity of this letter is discussed.

²⁶¹ See Section VII "The Rulings of Other Leading Poskim" subsection "Rav Shlomo Zalman Auerbach."

²⁶² Shortly after the Rabbanut issued the ruling permitting heart transplants, Rav Lazar Shapira ז"ל, nephew of Rav Avraham Shapira, came to teach for a year at RIETS. At that time he reported that there were two other factors that played a role in this ruling. These two factors were that a) the donor who had been in an auto accident was injured so significantly that he was now in the category of a טריפה, b) since such an operation is never performed by only one doctor, it would enter the category of שנים שהרגו. The issue of טריפה is indeed addressed by the ruling of the Rabbanut in their longer document in footnote #26; the issue of שנים שהרגו is not mentioned anywhere in their writings. It should be noted that Rav Lazar Shapira was not a member of the group involved in this ruling, so it must be assumed that his comments only reflect what he had heard from others.

The issue of טריפה can be seen in more detail in רמב"ם (הל' רוצה פ"ב הל' ה'), and with further elaboration in רמב"ם (הל' רוצה פ"ד הל' ו'). For the issue of שנים שהרגו see שו"ת ציץ אליעזר (ה"י סי' כ"ה פ"ה אותיות ב'-ד').

²⁶³ According to the few minority opinions that permit killing a טריפה to save another life, this would permit taking organs even if the person were still alive (see מנחת חינוך מצוה רצ"ו); some infer that such is also the opinion of the (סנהדרין עב:) ואין צריך לומר בסיעה של בני אדם והיה ביניהם טרפה שימסרוהו ואל יהרגו שהרי ההורגו פטור who writes (סנהדרין עב:). See (ה"י סי' כ"ה פ"ה) who questions whether this conclusion is necessarily correct. The opinion of the overwhelming majority is expressed by the (תנינא ח' הו"מ סי' נ"ט) נודע ביהודה (תנינא ח' הו"מ סי' נ"ט) who writes (תנינא ח' הו"מ סי' נ"ט) אני תמה על תמיהתו ואטו מי הותר להרוג את הטריפה להציל את השלם זה לא שמענו מעולם, ומה בכך שעל טריפה אינו חייב מ"מ איסור בידים עושה להרוג הטריפה ואפילו שבת מחללין על חי שעה, strongly rejecting any possibility of taking the life of any person, regardless of their condition or prognosis, for the sake of saving another.

the removal of the heart,²⁶⁴ with the other members of the medical team only participating in a more secondary role.

²⁶⁴ This would also be true if the death was caused by the injection of potassium into the heart to cause it to stop beating.

Sec. X: Donations from Live Donors

The Torah clearly mandates active and personal involvement in the saving of lives, as it is written, גמרא²⁶⁶ “You may not stand by the blood of your neighbor.”²⁶⁵ The גמרא²⁶⁶ elaborates on this obligation, stating that one must even expend money in the course of saving lives. Surprisingly absent from these discussions is the very real question of risking one’s own life to save another’s.²⁶⁷ Given that the cases mentioned by the Talmud involve rescuing from drowning, saving from an attacking wild beast, and protecting from bandits, it would certainly seem that this question should have been addressed, but there does not appear to be any comment in the Talmud. The מאירי²⁶⁸ explicitly spells out that this obligation does not extend to risking one’s own life to save that of one’s neighbor.

However, writing in the בית יוסף, Rav Yosef Karo²⁶⁹ quotes from the תלמוד ירושלמי that this obligation does extend to placing oneself into possible danger in order to save another. He explains that since this danger to the rescuer is “only” a possibility and the other person is in certain danger, the Torah has obligated us to accept such a risk.²⁷⁰

The סמ"ע²⁷¹ points out that this understanding mentioned by Rav Yosef Karo (in the בית יוסף) is not recorded in the שו"ע as it is not the ruling of the רמב"ם, ר"ף, רמב"ם, רא"ש וטור. Accordingly, he writes, the silence of the בבלי on this matter is because it rejects the idea that one is obligated to risk one’s life to save another’s, even if the danger is not certain.²⁷²

The רדב"ז²⁷³ seems to follow the approach quoted by Rav Yosef Karo (in the בית יוסף), explaining that the obligation would depend on the level of the risk. Accordingly, in cases where it is more than likely that the rescuer is jeopardizing his life, or even if the possibility of emerging safely is equal to the risk, he rules that there is no obligation for the rescuer to risk his life. The reason for this is that we would then employ the rule of מאי חזית דדמא דידך סומק טפי. However, if it is more likely that he can successfully save his fellow without endangering his own life, he is indeed obligated to take this smaller risk to do so.

While this opinion is not espoused by the majority of ראשונים and is not codified in the שו"ע, it is most important for the perspective that it offers. If this opinion (which is not accepted as authoritative) states that one must endanger one’s life to save another if the statistical risk to the rescuer is less than 50%, this means that the accepted הלכה rules that even if the risk is “small,”

²⁶⁵ ויקרא י"ט:ט"ז

²⁶⁶ סנהדרין עג.

²⁶⁷ It should be noted that the מנחת חינוך (מצוה תכ"ה אות ג') wrote that the normal exemption from מצוות based on פיקוח נפש does not apply in battle, as mortal danger is inherent in the idea of war. Accordingly, no proofs can be applied to any other מצוה based on that case.

²⁶⁸ מאירי סנהדרין עג.

²⁶⁹ בית יוסף ח"מ סי' תכ"ו

²⁷⁰ This would certainly fit in with the idea of מאי חזית דדמא דידך סומק טפי, since in this case things are not equal in terms of the risks that the two people are facing.

²⁷¹ ח"מ סי' תכ"ו ס"ק ב'

²⁷² This interpretation may also be supported by the fact that Rav Yosef Karo quoted this ruling of the ירושלמי in the בית יוסף but did not codify it in the שו"ע.

²⁷³ שו"ת הרדב"ז ח"ב סי' רי"ח (אלף תקפ"ב)

still, there is no such obligation to expose oneself in order to save another. However, this is not to say that according to the accepted הלכה that lacking a guarantee of safety there is never an obligation to rescue one's neighbor. Rather, those activities whose statistical risks are negligible to the point that they are not thought of as "risky," are precisely the activities that the תורה has obligated even though there may be some slight risks. For a qualified lifeguard there still remains a risk to jump into a pool to save a drowning swimmer, yet it would be more than difficult to suggest that he is not obligated to do so, as common sense does not group this with "dangerous activities."

Given this difficult balance, there could well be a tendency for such a person to go to an extreme when evaluating whether to take such risks. It was for this reason that the הפץ חיים²⁷⁴ and a number of other פוסקים cautioned not to be overly meticulous when making this evaluation.²⁷⁵ [This last piece of analysis has been introduced here as it may serve as an important backdrop for certain forms of donations.]

It should be noted that even according to the opinion that states that one is obligated to enter possible danger to save one's neighbor; this does not extend to giving up a limb or an organ. As the רדב"ז himself writes,²⁷⁶ the תורה never obligated a person to give up a limb of their body, even if it will result in saving the life of another, and even if there is no mortal risk to the one giving the limb.²⁷⁷

This תשובה is the most important primary source quoted by all contemporary authorities when dealing with the issue of live organ donors. Given the medical standards of today, organs will not generally be taken if the medical team feels that they are subjecting the donor to undue risk. But based on the words of the רדב"ז, even when the risk factor is small, there would never be an obligation for a living person to give a limb or organ, even if his refusal to do so would result in the death of another.

[While the very idea that organs are being removed from a live donor is itself a serious concern, nevertheless, the acute shortage of cadaver organs and the often larger potential problems involved in the removal of organs based on "brain death" from the perspective of הלכה serve to make this a much needed and often desired option.]

Kidney

The use of kidneys from live donors is not just an alternative to the use of cadaver organs, whether they are removed following "brain death" or cardiac death²⁷⁸ (when taken in the first

²⁷⁴ משנה ברורה (סי' שכ"ט ס"ק י"ט) "אולם צריך לשקול הדברים היטב אם יש בו ספק סכנה ולא לדקדק ביותר שאותה שאמרו המדקדק עצמו בכך בא לידי כך"

²⁷⁵ עי' פתחי תשובה (חו"מ סי' תכ"ו ס"ק ב') שכתב "אולם צריך לשקול הענין היטב אם יש ספק סכנה ולא לדקדק ביותר. וכמ"כ כתב העה"ש (שם סע' ד') "הפוסקים הביאו בשם הירושלמי דחייב אדם להכניס א"ע לספק סכנה כדי להציל חברו, והראשונים השמיטו זה מפני שבש"ס שלנו מוכח שאינו חייב להכניס א"ע, ומיהו הכל לפי הענין, ויש לשקול הענין בפלס ולא לשמור א"ע יותר מדאי"

²⁷⁶ שו"ת הרדב"ז ח"ב אלף נ"ב (תרכ"ז)

²⁷⁷ אגרות משה and פתחי תשובה (יו"ד סי' קנ"ז ס"ק ט"ו) This opinion is accepted as authoritative as is seen in (יו"ד ח"ב סי' קע"ד-ד')

²⁷⁸ The cardiac death referred to here is not what is referred to as DCD (Donation after Cardiac Death or Non-Heart Beating Organ Donations), when a non-brain dead, brain injured patient, deemed hopeless is removed from life support thus leading to his death; this practice is itself a major question not within the scope of this paper. The

thirty or forty minutes following death), but there are a number of very significant benefits as well. These advantages include the possibility for a better match, the ability to plan the date of the surgeries, allowing for better preparation for the recipient, the fact that hospital stays tend to be shorter, and that the dosages of medicines tend to be lower.²⁷⁹ Most significantly, the success rate of live donor kidney transplants is significantly higher than those utilizing cadaver kidneys.²⁸⁰

Based on this פסק of the רדב"ז²⁸¹ it is accepted as normative that there is never an obligation to surrender or donate a limb or organ, even to save the life of another. Following this ruling, in the earlier years of transplants a considerable hesitation was seen in certain rabbinic writings, not only in terms of it not being a Mitzvah, but even in terms of its permissibility.²⁸² A significantly different approach was taken in 1967 by Rav Moshe Feinstein, who ruled²⁸³ that even though there is no obligation to give an organ; one is permitted to donate an organ to save a life, even when there might be a significant risk to the donor.

Recognizing the increased safety of such procedures,²⁸⁴ as early as 1980 Rav Ovadia Yosef ruled²⁸⁵ that it is not only permissible to give a kidney, but is a מצוה as well. However, he too ruled that even given the limited risks of kidney donation, it does not become a חיוב.

Given the medical realities of today it can safely be said that even those פוסקים who had previously expressed reservations would certainly agree that one is not only permitted to donate a kidney, but doing so is a great מצוה. Accordingly, it is clear from the words of Rav Ovadia Yosef and those of many others as well, that live donations should be strongly encouraged in those cases where it is considered medically prudent. About cases like this, the רדב"ז wrote אלא מדת הסידות ואשרי מי שיוכל לעמוד בה.

At the same time, given that there is such a strong and compelling מצוה, it should be remembered that since it is not an absolute obligation, the informed consent of the donor is an absolute requirement for this and all other live organ donations.

cardiac death spoken of here is a natural cardiac death; it should be noted that this scenario may remain more theoretical than practical.

²⁷⁹ Dr. Stuart Greenstein, Yeshiva University, Sept. 11, 2006. Dr. Ron Shapiro, Director of the Kidney, Pancreas and Islet Transplant Program at the University of Pittsburgh Medical Center, oral communication 2010.

²⁸⁰ The one year graft survival rate for live kidney transplants is 95%, for cadaver kidneys, it is approximately 10-15% lower.

²⁸¹ See footnotes #276 and #277.

²⁸² In a השובה dated תשכ"א (1961), Rav Yitzchak Weiss (ה"ג סי' מ"ו) addressed this question, assuming that the donor is indeed subjecting himself to significant mortal risks. Accordingly, he ruled that it is impossible to say that it would be a מצוה to donate a kidney. Using even stronger language, Rav Waldenberg (ה"ג סי' מ"ה) ruled that given the danger of kidney donations, one would be forbidden to be a donor. It is important to note that in the last few lines of that responsum he does modify his words, stating that הוצאת כליה וכדומה מהאברים הפנימים מאדם אע"פ שהוא בריא כרוך בסתמא בספק סכנה, על כן אין להתנדב על כך בסתמא...אא"כ סגל חבורה של רופאים מומחים יחליטו אחרי עיון מדוקדק שהדבר לא כרוך בספק סכנת נפש למנדב.

²⁸³ אגרות משה (י"ד ח"ב סי' קע"ד) וז"ל "ואף שכתבתי דאף שאין האדם מחוייב להכניס עצמו לספק סכנה בשביל הצלת נפש חברו מ"מ רשאי דל"ד לשאר לאוין שאסור מאחר דניצול עכ"פ נפש מירא"ל"

²⁸⁴ The mortality rate for live kidney donors is approximately .03%.

²⁸⁵ שו"ת יחיה דעת (ה"ג סי' פ"ד). While the singular term מצוה is used, it would seem that a number of different מצוות would actually be fulfilled. Aside from פיקוח נפש, this would include כמות ואהבת לרעך כמוך, גמילת חסדים, and השבת אבדה.

Liver

From a medical point of view, these procedures are generally regarded as entailing a significantly higher risk, and in fact are performed far less often. Nevertheless, even though the statistical risks to the liver donor may be greater than those of the kidney donor, it is certainly a relatively small percentage²⁸⁶ and the process is generally not undertaken in cases that medically are deemed too risky. Accordingly, the same halachic concepts would apply. The only issue that might differ would be how strongly to encourage this procedure. However, given that most live liver donors are close family members, the issue of outside encouragement tends not to be such a pressing concern.

Blood and Platelets

Unlike the various organs that are needed for transplantation, blood and platelets have the capacity to regenerate in a relatively short amount of time and there is no danger to the life of the donor. Accordingly, both Rav J. David Bleich and Rav Mordechai Willig have ruled²⁸⁷ that in cases where there is a *חולה מסוכן בפנינו*, there is a full-fledged obligation to donate. This would include cases when a patient is undergoing surgery and his specific blood type is needed for transfusion, or when platelets are needed for a leukemia patient.

In cases where there is no *חולה מסוכן בפנינו*, there would still be a *מצוה* to give but not a *חיוב*.

Bone Marrow

Like blood and platelets, the taking of bone marrow is a safe procedure, and like other cases of live organ donor transplants, it is only performed in cases where there is a *חולה מסוכן בפנינו*. Accordingly, it would seem that there would be a *חיוב* to be a donor.²⁸⁸

However, even though the removal of marrow is not dangerous, it can be quite painful and often requires general anesthesia. It is reported that Rav Elyashiv²⁸⁹ had ruled that the risk entailed

²⁸⁶ Studies vary, showing mortality rates as low as .2% and others .5%-1.0%. "A Study of Liver Transplants from Living Adult Donors in the United States," in the *New England Journal of Medicine*, February 27, 2003 showed a mortality rate of less than 1.0%. These numbers are statistically higher than the mortality rates for kidney donors, but from a purely halachically point of view, negligible. Accordingly, it would seem that such judgments should best be made by medical experts given that live organ donors have provided informed consent.

It should be noted that Dr. Thomas Starzl, pioneer and leading authority in liver transplantation, is of the opinion that donation of the larger lobe of the liver (done when the recipient is an adult) is excessively risky, with a .5% mortality rate, and should not be performed. The donation of the smaller lobe (done for children) has a far lower mortality rate and is an appropriate procedure in his judgment. [Oral communication with the Vaad Halacha, 2010]

²⁸⁷ Rav J. David Bleich and Rav Mordechai Willig, oral communications, Nov. 2006.

²⁸⁸ Rav Shlomo Zalman Auerbach is quoted in (ח"ד סי' שמ"ט ג'-2) saying that marrow donation is a *מצוה*, but he did not address the question of whether it is a *חיוב*; the case there concerned a family member, so it is likely that the question of being an obligation did not come up. However, Rav Auerbach is also quoted in (ח"ד אה"ע סי' פ' אות א') in a letter sent to Dr. Abraham saying "however it is necessary to explain to him that this is indeed a *Mitzvah*, and if the chances of saving his life are greater than 50% it is necessary to beg and plead with him that he should be strong enough to fulfill this *Mitzvah* of *Pikuach Nefesh*, however, at the same time he should not be pressured. . . however, if the reason for his hesitation is fear of possible pain, it is possible to obligate him to suffer that pain in order to save another life if there are no other donors."

with anesthesia is significant enough that there is no חיוב to be a bone marrow donor, just as there is no obligation to be a live organ donor. It is the opinion of both Rav Bleich and Rav Willig²⁹⁰ that this risk is so minimal²⁹¹ that it should not be factored into the decision. Accordingly, they have ruled that a compatible donor would be fully obligated to give his marrow. This is true even though there may be some residual pain and lost work time²⁹² following the procedure.

Needless to say, one cannot be a marrow donor without prior testing. Even in cases where there is a חולה מסוכן בפניו it is impossible to say that there would be an obligation to be tested, as the odds of being a match are so small.²⁹³ Nevertheless, given the gravity of the situation when there is a patient in need, it is highly meritorious to be tested. Accordingly, it would be most proper for the organized Jewish community to both encourage and even facilitate bone marrow testing so that when there are patients in need, appropriate matches can be found. Recently there have been a number of such testing drives which have resulted in several lifesaving matches.

²⁸⁹ See Section V of this paper, “Responses of Leading American Poskim to Questions Posed by the Vaad Halacha” subsection “Live Organ Donations” for further details on this ruling.

²⁹⁰ *Ibid.*

²⁹¹ In America the mortality rate of general anesthesia is approximately one in 250,000 – this includes all patients, including emergencies, accidents, and critical care patients. Donors tend to be younger and healthier and would have a much lower risk. It is presumed that Rav Elyashiv based his ruling on data from institutions where the rate of risk was far higher. It should be noted that as recently as 25 years ago this rate was far higher even in America, with one (and some studies saying two) in ten thousand dying; this reported ruling of Rav Elyashiv is not a recent one, and quite likely based on these older statistics.

The morbidity rates of otherwise healthy patients are also quite low, although generally higher than the mortality rate. Nevertheless, this would not seem to present any issue in Halacha as such risks are still statistically extremely low.

²⁹² As the above cited quote from עג סנהדרין indicates, one must spend money to save his fellow. If the beneficiary is financially capable, in that case the רמ"א (י"ד סי' קנ"ב סע' י"ב, וע"ע סמ"ע וש"ך חו"מ סי' תכ"ו ס"ק א') rules that he must compensate the expenses of the one who redeemed him from captivity. Assumedly, this would also apply to time needed to recuperate following the procedure if the donor is unable to work. In cases where the recipient is not in a position to compensate the donor for his lost work time, it would go a long way in facilitating this great מצוה if the community could help provide this compensation if this is necessary to help enable the procedure.

²⁹³ It should be noted that Rav Moshe Feinstein ruled (אגרות משה יו"ד ה"ב סי' קנ"א) in a similar manner, that there is no obligation for a person to study to be a doctor or a lifeguard in order to save lives, since it is only once a person has the ability to save lives that there is an obligation do so. In the case of bone marrow testing, where matches are statistically so rare, the words of Rav Moshe would seem even truer, that no such obligation exists. At the same time it should also be noted that since marrow testing only involves a brief one time test, a case might be made to say that there would be a stronger obligation than the above cases which involve extensive education and/or training.

Sec. XI: Summary of the Sources and Rulings Cited on the Matter of Cardiac, Brain and Respiratory Death

Medical Information

While it is a given that a proper medical understanding is a prerequisite for addressing these issues, since most of the Halachic literature was written in the 1970's and 1980's, it was most necessary to review the current state of medical knowledge and how it has changed since that time, both in theory and in practice. The rather simplistic lay explanation that with "brain death" the brain has been rotted away or fully liquefied, mentioned in some of the Halachic literature, is rarely if ever correct. Additionally, in a certain percentage of cases, noticeable signs of life do continue in a "dead brain." As pointed out in the report of the President's Council on Bioethics, the idea that following "brain death" the integration of vital functions ceases, is not only incorrect as the brain is not the integrator of (all) vital functions, but that this concept had been portrayed in an exaggerated way in order to create a rationale to establish "brain death" as the standard for human death.

Aside from these "theoretical" concerns regarding the status of the brain and body at the time of "brain death," the issue of testing and confirmation has come under scrutiny in the past few years. It has been found that both in terms of established policies and fulfillment of these rules, there is often little consistency found in the practices of major medical institutions. Additionally, with the almost total acceptance of these ideas in the medical community, the proper implementation of these confirmatory tests has become something that cannot be taken for granted. With an eye to the immediate future, the increasing acceptance of the practice of DCD (Donation after Cardiac Death, also called Non-Heart Beating Organ Donation, whereby a non-brain dead patient is removed from artificial respiration so that his heart will stop, rendering him an "acceptable" candidate to be a cadaver organ donor) gives added cause for concern that meeting the specific technical criteria of "brain death" will be deemed less of a necessity for the removal of organs.

Yoma 85a

All sides in this debate seem to find support in the various interpretations and textural variations of this section of the Talmud and its parallel passage in the Talmud Yerushalmi. Some phrases or opinions seem to mitigate more strongly for a respiratory criteria of death, while others see the permanent loss of respiration only as a sign that death has taken place but not as the determinant of death. At the same time, others find strong support for the role of cardiac activity in the determination of death, particularly based on the words of Rashi.

Ohalos 1:6, Chulin 21a

Supporters of "brain death" have pointed to these sources as indicating that not only does literal decapitation indicate death, but so too "virtual decapitation" which is seen when a brain has fully died. This goes well beyond the concept of the loss of organized brain functions, as it views a "dead brain" as equivalent to having been decapitated, a clear sign of death. This concept was

accepted, at least in theory, by both Rav Moshe Feinstein and Rav Shlomo Zalman Auerbach. At the same time, each of these two indicated that this would entail a standard of brain destruction not found in the time frame in which organs are currently removed for transplant, and likely not found for a significantly extended period of time as well.

Further analysis of these sources questions whether there is any basis for comparing “brain death” to decapitation, as the injuries spoken of may be more based on blood loss and not specifically focus on the connection between the brain and the body. This is further seen in the rejection of either a severed spinal chord or the majority of the flesh of the neck as indicative of death, as both injuries are required by the Talmud. It was for this last reason that Rav Yosef Shalom Elyashiv saw this source as rejecting the singular role of the brain in determining death.

Responses of Leading American Poskim

Six leading Poskim whom members of the RCA often turn to were asked a series of questions pertaining to transplants and determination of death. Two of them (Rav J. David Bleich and Rav Mordechai Willig) rejected reliance on either “brain death” or permanent cessation of spontaneous respiration *בתורת ודאי*, meaning that based on Torah sources these are absolutely not acceptable criteria of death and to remove organs at this time would be an act of shedding blood. Three others (Rav Aharon Lichtenstein, Rav Michael Rosensweig and Rav Hershel Schachter) rejected reliance on these criteria *בתורת ספק*, meaning that removing organs at this time would be a possible act of shedding blood, also strongly forbidden by Torah law. One (Rav Gedalia Schwartz) did not reject the “brain death” criteria. However, Rav Schwartz was most concerned with the lack of control frequently found in these situations and therefore expressed his strong discomfort with organ donor cards that he believes only contribute further to this lack of control and deliberation necessary for such decisions.

Rav Moshe Feinstein

In our work we separated the written work from the oral reports of what Rav Moshe said. In all three of the responsa where he directly addressed the question of organ donation for transplant, Rav Moshe prohibited such donations. It is clear that at least the first two of these responsa were written based on significantly different medical assumptions than those made today, while in the case of the third one the matter is less than fully clear. Nevertheless, from the foundations Rav Moshe laid out in these early responsa it does clearly seem that he has closed the door on the very concept of “brain death.” In another responsum (*אגרות משה יו"ד ה"ג סי' קל"ב*) written during the time in between the last two mentioned above, addressing the issue of removing a patient from life support (and not addressing matters of transplant), there is significant controversy regarding what Rav Moshe said and meant. Some, including his son in law, Rav Moshe Tendler, insist that in this responsum Rav Feinstein does support “brain death.” Others, including Rav Shlomo Zalman Auerbach, do not understand his words this way, instead viewing them as a stringency to be applied before removing certain accident victims from life support. Whatever interpretation is given, all agree that Rav Moshe was not addressing organ transplants in this responsum. Accordingly, any attempt to find support in his written work for organ donation requires some extrapolation and cannot be directly attributed to rulings found in his writings.

Far greater controversy exists regarding a posthumously published letter, where strong support for organ donation is expressed. While it was sent on Rav Feinstein's stationary, whether it indeed is an expression of his opinion and rulings has been hotly contested, with significant reason to suggest that this was not his work.

The oral record of what Rav Feinstein said and ruled seems even more conflicted and confused. Rav Dovid Feinstein, Rav Moshe's son, is on record as saying he has no knowledge that his father ever accepted "brain death", and specifically avoids answering that question when asked in interviews. He does state that his father accepted permanent cessation of spontaneous respiration as a criteria of death. As mentioned above, Rav Tendler, his son in law, does state that Rav Feinstein did accept "brain death" as criteria for death. Rav Moshe Sherer, the late president of Agudath Yisrael of America, stated that he had numerous conversations with Rav Feinstein and he was clearly against accepting "brain death" as criteria of death. Interviews with others close to Rav Moshe also lead to this same conclusion.

The Rulings of Other Leading Poskim

In this section of our work we addressed the rulings of a number of other leading rabbinic authorities whose work were not otherwise addressed in these pages.

Rav Shlomo Zalman Auerbach spent many years studying these issues and after considerable time and fine tuning of his opinions, ruled that it is forbidden to remove organs from a "brain dead" patient. There is considerable confusion regarding his opinion because he did indicate that if each and every cell of the brain had died and that fact could be ascertained, then such a person would indeed be considered dead. However, such is not the case in patients who are called "brain dead" in current medical practice, and even if it were, such verification is not possible. In his writings he clearly rejected the cessation of respiration as a criterion for death as well.

Rav Eliezer Yehuda Waldenberg ruled strongly against organ donation, either based on "brain death" or cessation of respiration.

Rav Ahron Soloveichik also rejected "brain death" as a criterion of death. Strikingly, he did accept the role of the brain as a vital organ in addition to the respiratory and circulatory systems, the result of which could perhaps be a delay in a declaration of death pending the failure of all three organ systems.

Rav Shmuel Wozner strongly rules that the beating of the heart is a sign of life that is insisted on by the Talmud and as such rejects both the "brain death" and respiratory criteria.

Rav Yosef Shalom Elyashiv has issued numerous public statements, the most recent being Adar of 5769 (2009), in which he strongly rejects all possibilities of organ donation based on "brain death" or the cessation of spontaneous respiration, ruling the removal of such organs as an act of bloodshed.

Rav Yosef Dov Soloveitchik

Rav Binyamin Walfish, former executive vice president of the RCA, reported that in late 1983 or early 1984 he met with Rav Soloveitchik who at that time accepted the "brain death" criteria. The Rav was not actively involved in public affairs at that late date in his life, but when Rav

Walfish reported this information publicly, the Rov's brother, Rav Ahron Soloveichik and the Rov's son in law, Rav Isadore Twersky strongly insisted that the Rov had never ruled this way and sent a letter expressing this idea to the president of the RCA. Rav Haym Soloveitchik also rejected the idea that his father ruled this way. More recently, two of the Rov's grandsons, Rav Mayer Twersky and Rav Yitzchok Lichtenstein, both reported having several conversations with their grandfather in which he clearly could not accept "brain death" nor could he understand how anyone else felt that they could. Notably, Rav Moshe Tendler also stated that in the many conversations with the Rov on this matter, the Rov never accepted his position on "brain death."

The Chief Rabbinate of Israel

The Rabbanut of Israel issued a ruling permitting heart transplants following brain death in 1986. The primary rabbinic participants were the two chief rabbis, Rav Avraham Shapira and Rav Mordechai Eliyahu, as well as Rav Zalman Nechemia Goldberg and Rav Shaul Yisraeli. Their primary medical advisors were Rav Dr. Avraham Steinberg and Rav Dr. Mordechai Halperin, both musmachim as well as physicians. It is clear that one of the main reasons that they ruled to permit heart donations was the belief that this was the ruling of Rav Moshe Feinstein, something which our research has found to be questionable.

Each of the two medical advisors wrote extensively, were spoken with, and in the case of Dr. Halperin, an ongoing dialogue was maintained. Dr. Steinberg played significant roles in the process and as such his work, both written and oral was analyzed. Clearly a strong advocate for organ donation following cessation of spontaneous respiration, his work was found to be most provocative, but far from compelling, particularly regarding the interpretation of Rashi and the *התם סופר*. Additionally, at a number of junctures Dr. Steinberg's understandings differed in significant ways from the Rabbanim who issued the ruling.

Rav Shaul Yisraeli, described as the leading authority in the ruling, wrote several articles on this subject. His understanding of the Talmudic texts was found to be based on societal and scientific assumptions that do not find support in either rabbinic or medical literature. His Halachic conclusions are based on these assumptions and were therefore found to be difficult to accept.

Rav Mordechai Eliyahu stated in dialogue that he does not really deal with this issue of "brain death" or transplants on a practical level, sending such cases to Dr. Halperin. Several of the medical assumptions in Rav Eliyahu's writings do not seem to fit with commonly accepted knowledge and practice. His acceptance of "brain death" is significantly based on the assumption that Halacha accepts the standards of the doctors of the generation; according to this idea they have authority not only to describe the health or prognosis of a patient but to establish criteria and perhaps definitions of life and death as well.

Rav Zalman Nechemia Goldberg did not write on the subject of "brain death" or transplants and has generally not been actively involved in this matter. When spoken with in the course of our research it became clear that in his involvement in this 1986 ruling he was not provided full and sufficient medical knowledge. A number of both public and private statements from Rav Goldberg show clear and strong support for the concept and practice of organ donation, but at the same time he does not take a stand on the criteria of death, whether it should be cardiac, respiratory or brain.

Rav Avraham Shapira did not get a chance to pen a written response to us before his passing, but he had written on the subject a number of years ago. In his writing he clearly accepts cessation of respiration as the criterion of death, but other than his medical sources, he does not clearly make his case from Halachic sources. While offering a most novel suggestion that all mention of the need for cardiac death was a rabbinic standard that was added to the Torah standard of respiration, he neither proves nor explains why such a standard should have been added.