

# *Establishing the Moment of Death in Transplantation Procedures\**

Yitschak Shilat

translated by David Fink, Ph.D.

## **I. Introduction**

The question of establishing the moment of death according to halacha is still a question of public interest. The question has become more pressing in the course of the last few decades because of the impressive advances in transplantation techniques, including heart, liver, and lung transplantation. Otherwise hopeless cases have been successfully treated, leading to vastly increased life-expectancy. There is therefore an urgent need to establish the halachic moment of death in a clear and definitive manner since only after that moment can the donor's organs be removed.

The question has been widely discussed. The Schlesinger Institute recently published a collection of articles under the editorship of Rabbi Dr. Mordechai Halperin dealing with the moment of death (Jerusalem, 5766). The collection contains basic articles which have appeared in Hebrew together with up-to-date surveys reprinted from the new edition of Rabbi Prof. Avraham Steinberg's *Medical-Halachic Encyclopedia*.

Controversy among the *posekim*, even in the most serious matters, is not surprising to anyone familiar with rabbinic literature. Halachic controversy exists in every area, including matters of life and death. Study of the Talmudic passages dealing with

martyrdom and "standing idly by while one's neighbor is endangered" suffices to demonstrate the existence of controversy from the days of the Mishna through the contemporary authorities.

In those historical periods when we had a supreme halachic authority accepted by Jews everywhere, such as the Sanhedrin in late antiquity, such controversies would be resolved and a binding halacha would be established for all Jews. Without such a supreme halachic authority, there are principles for correct halachic conduct. Such principles are of course halachic themselves. For example, when two rabbinic authorities, or two rabbinic courts, disagree in the absence of the Sanhedrin or prior to the decision of the Sanhedrin, it does not matter if they are contemporaries or from different times. If one decides "pure" and the other "impure" or if one decides "prohibited" and the other "permitted" and you do not know who is right, follow the stricter opinion in matters of biblical origin and the follow the lenient opinion in matters of rabbinic origin.

***There is therefore an urgent need to establish the halachic moment of death in a clear and definitive manner***

(Rambam, *Hilchot Mamerim* 1:5, following Tract. A.Z. 7a)

Another well-known principle permits any individuals or any community to follow the opinion of their rabbi or their local authority even if many disagree with him. This is the opinion of the Chazon Ish:

\* The original article was first published in Hebrew with extensive footnotes in the second addition of *Establishing the Moment of Death, Collection of Essays*. Rabbi Mordechai Halperin M.D. (Ed.) (Jerusalem, 2007) pp. 277-295.

The principle calling for strictness in matters of biblical origin applies only if none of the contending authorities is your rabbi. But if one of the authorities is your rabbi, follow him even if he is lenient. Your rabbi is the one to whom you are close and to whom you listen in most mitzvah matters... This rule applies both during the lifetime of your rabbi and after his death, as long as his opinions are known either through his writings or through his disciples. One may act leniently following one's rabbi even in matters of biblical origin and even if he is in the minority as long as no rabbinic court has adjudicated the matter and determined the halacha definitively. This is the meaning of what the Sages said (Tract. *Yevamot* 14a): In Rabbi Eliezer's locale they chopped down trees to make charcoal on Shabbat, etc. In Rabbi Yosi's locale they ate fowl and milk together.

(Chazon Ish, *Shevi'it* 23:1; *Y.D.* 150:1)

This article is firstly a brief summary of the well-established principles that permit, and therefore require, organ transplantation. Several great Torah scholars of our generation have permitted such procedures. They have explained the basis of their permissive ruling in the above-mentioned collection of articles published by the Schlesinger Institute.

In addition, I shall comment on the position of those quoted in the collection of articles as opposing transplantation and explain my objections to them.

However, my main purpose in this article is to shed some light on the topic from another point of view which has until now been considered relatively unimportant but which in my opinion has great halachic weight. My point revolves around the relationship between the prohibition of killing and the destruction of the image of God inherent in every man.

## II. Cardiac Death and Brain Death

Let us first examine the medical terms and concepts which pertain to our topic. Then we can proceed with the halachic analysis.

In the world of medicine there are two current standards for establishing death:

1. Cardiac death: terminal and irreversible cessation of the beating of the heart.
2. Brain death: terminal and irreversible cessation of brain stem function.

The brain stem is the lower part of the brain, connecting the brain to the spinal column and to other parts of the body and transmitting the instructions of the brain to them. Part of the brain stem is responsible, among other functions, for operating the muscles used in breathing. Breathing "control" therefore depends on the brain stem, without which autonomous breathing would be impossible.

The heart, on the other hand, has its own internal "control" center which regulates the heart beat. That is why the heart can continue to beat for a certain time even if disconnected from the brain and even if the heart is completely removed from the body.

If the brain stem is destroyed and ceases to function irreversibly, terminal and irreversible cessation of autonomous breathing results. It remains possible, however, to ventilate the lungs with a mechanical respirator in order to maintain the flow of oxygen into the blood system.

The gap in time between brain death and cardiac death is generally not long. Experience has shown that when the brain and the heart and the other parts of the body are no longer connected, it is difficult to maintain circulatory function for more than a few days, after which time the heart stops beating despite its internal "control." Cardiac function, as well as other systems in the body, depends largely on brain function. Other systems in the body therefore shut down shortly after brain death.

The duration of this gap in time is critical for transplantation procedures because most vital organs are fit for transplantation only when they are removed from a dead body whose cardiac and circulatory functions are being maintained artificially.

Shortly after cardiac death, most vital organs (aside from the kidneys) are no longer fit for transplantation. Since the preparation of the patient who is to receive a transplanted organ is itself a time-consuming surgical procedure, it follows that there is no practical way to transplant central organs after cardiac death.

Therefore, it is critical to establish whether brain death is a sufficient standard. We must tread carefully in this discussion, deviating from the truth neither to the left nor to the right. Unjustified strictness would prevent lifesaving in cases where patients require transplantations; unjustified leniency would lead to killing the donor. We need a clear-cut halachic decision in accord with the clarity of the rabbi's awareness and the depth of his prayers that he not err.

### III. The Talmudic Passage in Yoma and the Moment of Death

Here is the principal talmudic passage dealing with our topic:

The possibility of lifesaving supersedes Shabbat. If someone might or might not be trapped under a collapsed structure and, assuming that he is there, might or might not be alive, we violate Shabbat to excavate him. If he is found alive, we continue the excavation. If he is found dead, we leave him [until after Shabbat].

(Mishna, *Yoma* 83a)

In the Talmud (*Yoma* 85a) the question is asked: "If he is found alive, we obviously continue the excavation. So why, then, did the law have to be stated? And is answered: we continue the excavation even if he will live only briefly."

The Talmud continues:

The Sages taught: How far does one check? To his nose. Some say: to his heart. (This is Rashi's reading. But according to the reading of Rabbenu Hananel, Rabbi Alfasi, and Rabbenu Asher, some say "to his navel.")

(If there were several people trapped under the collapse, and) the higher ones were found dead, do not say that the ones trapped lower down are also already dead.

***Life resides in the nose, as it is written "In whose nose was the breath of life (Gen. 7:22)"***

It once transpired that they found the upper ones dead and those lower down were still alive.

Perhaps these authorities agree with those who taught: Where does the fetus

begin growing? From its head, as it is written "You took me from my mother's womb (Psalm 71:6)" and it is written, "take your hair and cast it away (Jer. 7:29)."

Abba Shaul says: From its navel which sends its roots in every direction. One might say that (the first view agrees with) Abba Shaul because Abba Shaul spoke only with regard to the first formation as everything develops from its middle. But regarding lifesaving even Abba Shaul would agree that life resides in the nose, as it is written, "In whose nose was the breath of life (Gen. 7:22)."

Rav Pappa said: This dispute pertains only if the examination proceeded from the feet toward the head. But if he is examined from the head down then checking his nose is sufficient, as it is written "In whose nose was the breath of life (Gen. 7:22)."

(Tractate *Yoma* 85a)

Rashi explained: "This dispute pertains only if the person was examined from the feet towards the head" - the dispute between those who say that one checks to his heart and those who say that one checks to his nose. According to one opinion, checking his heart will determine whether he is alive if his "soul beats there." According to the other opinion, one checks to his nose because sometimes life can be perceived in his nose when it cannot be perceived in his heart.

According to Rashi, those who require checking to his heart are interested in determining whether he has a perceptible pulse. But according to Rav Pappa, who taught that everyone agrees that it is sufficient to check the nose of a victim if the examination begins at the head, it follows that absence of breathing determines death even though the Sages must have known what is known to any trauma clinician, namely that there are cases where the patient is not breathing but still has a pulse. If pulse by itself were an essential indication of life, it would be insufficient to rely on the absence of breathing at the nose in establishing the victim's death.

It appears, however, that when Rashi mentioned checking whether "his soul beats there," he was actually referring to a method of checking respiration. He meant that one checks the area of the chest to see whether the victim is breathing. If the victim's chest rises and falls, there is a dispute whether such a determination is sufficient or whether one needs to check the victim's nose specifically since everyone agrees that checking the nose is more reliable as "sometimes life can be perceived in his nose when it cannot be perceived in his heart."

Therefore if the examination begins at the head, everyone agrees that checking the nose is sufficient.

[Rashi's phrase "sometimes life can be perceived in his nose when it cannot be perceived in his heart" also indicates that he is not referring to what we call pulse because there is no respiratory pulse. In *Resp. Haham Tsevi* (No. 77, s.v. *u-mishnato*) it appears that Rashi was indeed referring to what we call pulse since the pulse is sometimes very shallow and cannot be detected in the chest area. Therefore, one must further check the victim's nose to determine whether there is any breath. Even according to this understanding, it is clear that Rashi can still adhere to respiration as the definitive criterion.

But those who require checking the heart when beginning at the legs are of the opinion that a beating heart indicates that there might be indications of breathing. The absence of cardiac beating would indicate that the victim is surely not breathing.

Those who require checking the nose are of the opinion that checking the heart is unreliable because breathing is possible with no signs in the heart.

This responsum of the *Haham Tsevi* is discussed further *infra*, sect V.]

Whatever Rashi might have meant, the reading of Rabbenu Hananel, Rabbi Alfasi, and Rabbenu Asher "to his navel" corresponds to the reading of all known manuscripts of the Talmud (see *Dikdukei Soferim*). This reading is also explicitly supported by the Palestinian Talmud (*Yoma* 8:5) as well as implicitly by the Babylonian text: "Abba Shaul says:

***The conclusion to be drawn from the Talmud is that terminal cessation of breathing is the sign that a person has died***

From its navel it sends its roots." Now it is clear that checking the area of the navel can only be related to respiration, not cardiac function. According to this, the principal reading of the text, the Talmud mentions no sign of life other than breathing.

According to the *poskim*, we must check the nose of a victim caught under a collapsed structure. Maimonides wrote (*Shabbat* 2:19): If someone is under a collapsed structure and found alive, one excavates him even though he is crushed, cannot recover, and will only live a brief time. If they checked his nose and found no life, he is left where he is because he is already dead.

The *Tur* and the *Shulchan Aruch* (O.H. 329:3-4) wrote: If someone is under a collapsed structure and found alive, one excavates him until his nose is exposed even though he is crushed and cannot live more than a moment. If no life is perceived at his nose, he is surely dead whether his head or his feet were uncovered first.

Today, it must be emphasized, modern medicine has methods like mouth-to-mouth resuscitation which restore autonomous breathing to a patient whose respiratory function has failed. It follows that a victim must be excavated even if he has no sign of breathing at his nose because if the cessation of breathing occurred shortly before he was found, there is a chance to save him. The rule is: the possibility of lifesaving supersedes Shabbat.

The conclusion to be drawn from the Talmud is that terminal cessation of breathing is the sign that a person has died (because if he is not dead it is correct to violate Shabbat to lengthen his life, even though he will certainly die soon). Can we further conclude that the moment that breathing stops is the moment of death? Apparently, such a conclusion does not necessarily flow from the halacha based on the Talmud because it is possible that death precedes the cessation of breathing and the cessation merely constitutes a sign that the person is already dead. However, the proof text adduced in the Talmud "*In whose nose was the breath of life (Gen. 7:22)*" does indeed imply that the moment of death coincides with the moment of cessation of breathing because the verse refers to the breath of life. This means that as long as a person is breathing, he is alive. Similarly, the Torah says regarding things living on dry land that "*all creatures with the breath of life in their nostrils upon the dry land... died.*"

If a person is halachically dead when he stops breathing, it follows that terminal cessation of breathing is the definition of death. It is obvious that in cases of temporary, reversible cessation of breathing it is possible that the patient might recover his ability to breath. In such cases, the patient is not to be considered dead. As mentioned above, whenever techniques exist to restore breathing, Shabbat is superseded to save the patient's life. Death is terminal, irreversible cessation of the ability to breath.

Now, medical science establishes with absolute certainty, both on the basis of the theory of

physiology and on the basis of practical experience in thousands of cases without any exception, that destruction of the brain stem means terminal and irreversible loss of the capacity to perform autonomous breathing. In this situation, there is no mechanical respirator which can restore autonomous breathing. The respirator's pump can force air into the patient's lungs, causing them to rise and fall; artificial breathing can take place, preserving blood circulation and cardiac function for a time. But autonomous breathing will never be restored. (On the other hand, in cases where cessation of breathing is not due to the destruction of the brain stem, artificial respiration might save the patient's life, enabling the body to continue functioning until autonomous breathing can be restored when the body overcomes the disease from which it is suffering.)

Artificial respiration can surely not be considered breathing. It is not "*the breath of life in his nostrils.*" The mechanical ventilator pumps oxygen rich air into the patient's lungs. After an exchange of materials which takes place in the lungs, carbon dioxide rich air is pumped out of the lungs. In a person's "nostrils," *i.e.*, in his facial orifices through which the air passes, there is no perceptible breath of life because the air passes to and from the ventilator through a sealed tube. It therefore seems reasonable that the case of a mechanically ventilated cadaver does not correspond to what the Torah calls "*the breath of life in his nostrils.*"

A further proof can be adduced from the Mishna:

A person conveys no ritual impurity until his soul departs, even if his arteries are cut open and even if he is on the verge of death... Similarly, an animal conveys no ritual impurity until its soul departs. If they are decapitated, they are impure even if they are still twitching as the tail of a lizard twitches.

Tractate *Ohalot* (1:6)

According to this Mishna, decapitation constitutes death even if the body continues to move. In *Iggerot Moshe* (Y.D. 3:132), Rabbi Moshe Feinstein compares the state of brain death and the severing of the connection of the brain to the rest of the body with decapitation where even subsequent artificial respiration and circulation of blood do not constitute life.

#### IV. The Contemporary Controversy

There have been two stages in the public debate over establishing the moment of halachic death: (1) Around two hundred years ago at the end of the 18th century the law in the Duchy of Mecklenburg in Germany required delaying burial for three days after a physician had certified death. The delay was intended to prevent errors, and some wanted to accept the three day delay in burial as halachically correct. In opposition, several great *poskim at the end of the 18<sup>th</sup> century and the beginning of the 19<sup>th</sup> century* claimed that we can rely only the signs of death established by the Sages, and delaying burial violates the halacha. (2) The question of establishing the moment of death has arisen a second time in our days in connection with transplantation procedures, especially heart transplantation. The failure of early heart transplantation led to initial, widespread rabbinic opposition. The rabbis spoke of “double murder,” since the procedure killed both the donor and the recipient. In the course of time, however, there occurred two great medical advances enabling: (a) clear and absolute determination of irreversible brain death pursuant to which there is no autonomous breathing; and (b) transplantation procedures became more successful and lengthened life (due to the introduction of a drug to suppress rejection of the transplanted organ).

As a result of these developments it became possible to remove the beating heart from a brain-dead donor. Although the donor is indeed brain dead, his heart continues to beat due to the oxygen provided by a mechanical respirator. In view of this,

it is of critical importance to determine whether brain death is halachically considered death.

***Artificial respiration can surely not be considered breathing. It is not “the breath of life in his nostrils.”***

The Chief Rabbis of Israel, Rabbi Shapiro and Rabbi Eliyahu, set up a special committee of great Torah scholars and medical specialists to analyze this issue. The committee was chaired by Rabbi Shaul Yisraeli and in the year 5747 concluded that brain death is to be considered death allowing the removal of organs for the purpose of transplantation into the body of patients with life threatening conditions. This conclusion resulted from a series of detailed and extremely reliable tests which proved beyond a doubt the irreversible condition of the brain stem.

Rabbi Moshe Feinstein essentially concurred with this position even though a number of his published responsa left some doubt regarding his opinion (see *Iggerot Moshe* Y.D. 2:146, H.M. 2:72, Y.D. 3:132). In a letter written subsequent to his published responsa he explained his final opinion: “Although the heart is still able to beat for a number of days, as long as the patient has no autonomous breathing he is nonetheless considered dead as I explained in *Iggerot Moshe* Y.D. 3:132.”

Rabbi Feinstein’s son, Rabbi David Feinstein, and his grand son-in-law and editor, Rabbi Sh. Rappaport, similarly testified that this represented his opinion correctly.

The final opinion of Rabbi Sh.Z. Auerbach also recognized complete brain death as being equivalent to decapitation. However, he viewed “brain death” as currently defined as a state of dubious death (*safek met, safek goses*).

On the other hand, some great contemporary *poskim* (Rabbi E.Y. Valdenberg, Rabbi Sh. Wosner, and Rabbi Y.Sh. Eliashiv) are of the opinion that without cardiac death, that is cessation of beating, no one can be considered dead.

Their principal sources are: Rashi in *Yoma* 85a, *Resp. Chacham Tsevi* 77, and *Resp. Chatam Sofer* Y.D. 338. We shall discuss their proofs based on these sources below.

## V. Responses to the Claims against Brain Death

1. In section III above we dealt with the passage in Tractate *Yoma* and Rashi's commentary. We saw there that Rashi's words "the master says that one discerns life at the heart, where the soul beats" prove, even if Rashi refers to heart beat, only that when the pulse has stopped a man is certainly dead. But Rashi does not say that without the absence of pulse death is not present. Indeed, the opposite is implied by Rav Pappa's conclusion that everyone agrees that when checking begins at the head checking the nose is sufficient. According to this, cessation of respiration is sufficient, even when the pulse continues.

Rabbi E.Y. Valdenberg explained the position of the Sages that death depends on the cessation of breath of the nose as really intending a strict position when cessation of breathing occurs after the heart stops beating (*i.e.*, cessation of both the pulse and the breathing are required). Rashi explicitly formulated this idea in his commentary on *Yoma* (*ibid.*): The master said "to his nose" because life is occasionally noticeable at his nose but not his heart." This is the point of the Talmud in requiring no more than checking the nose when the victim is found erect because in such a case it is to be assumed that there is no sign of life at the heart.

But I beg to suggest that Rabbi Valdenberg's explanation is not consonant with the facts because

in the absence of a pulse no respiration is possible. It is therefore impossible to consider cessation of breathing as an additional, strict requirement. According to the understanding of Rashi presented in the *Haham Tsevi*, as adduced by Rabbi Valdenberg himself, we have already concluded that there is no proof that cessation of the pulse is required.

Rabbi Sh. Wosner wrote:

***The Chief Rabbis of Israel, Rabbi Shapiro and Rabbi Eliyahu, concluded that brain death is to be considered death allowing the removal of organs for the purpose of transplantation into the body of patients with life threatening conditions.***

Regarding the passage in Tractate *Yoma*... it is obvious that they said to check as far as his nose. Even according to this opinion, not only the breathing of the nose is intended. Rather, they said to check as far as his nose, for if he is found under a pile of rubble and his body is crushed and his brain entirely severed he is definitively dead. Thus one checks as far as his nose by examining his temples and the tendons of his neck for, as is well known, the beating of the heart is

observable there. If there is no beating at his temples or in the tendons of his neck, the victim's death can be established by examining the absence of breathing at his nose... We need not fear for the extraordinary possibility that after all these tests have been done, life in the heart will subsequently be observed.

(*Assia* 42-43 pp. 92-94, 1987)

If one checks the victim from the head down, Rabbi Wosner requires examining the pulse at the neck. In my humble opinion, this cannot be the sense of the passage because the nose is higher than the neck.

Further, his requiring examination of the temples is not mentioned anywhere in the Talmud. Why should such an examination be required without a talmudic source?

Furthermore this position requires another innovation namely that examination of the pulse at the temples is not equivalent to examination of the pulse at the heart, for according to the opinion that one examines a victim from the legs up to the heart it is sufficient to examine the heart. But if one examines from the head down it is not sufficient to examine the pulse at the temples. Rather, everyone agrees that one must check “as far as the nose.”

Furthermore, both Rabbis Wosner and Valdenberg espouse a novel, non-obvious understanding. According to their understanding, checking up to the nose of a victim caught under collapsed rubble relies on the likelihood that absence of breathing at the nose indicates cessation of beating of the heart even though they simultaneously assert that cessation of cardiac function is part of the definition of death. In their opinion we ignore the possibility that the victim’s heart is still beating.

In addition, consider the following essential point. According to Rabbenu Hananel, Rabbi Alfasi, and Rabbenu Asher, “up to his navel” is the correct reading. This reading is supported by the Palestinian Talmud and the simple meaning of the context. The Talmud mentions nothing about the heart and its beating. Indeed, it discusses only the checking of breathing.

2. Regarding the responsum of the Haham Tsevi (number 77): This responsum deals with the kashrut of a chicken which seemed to have no heart. Haham Tsevi discussed the question at length and demonstrated that in fact neither person nor animal nor fowl can live without a heart because life depends on the heart. It follows that the chicken in question surely had a heart which was lost after cutting it open.

The position of Haham Tsevi that it is impossible to live without a heart is obvious from a scientific point of view because the heart is the source of circulation and without circulation neither the brain nor any other organ can live. Without a functioning heart, the organism dies.

Haham Tsevi adds, however: “because all agree that the seat of a creature’s vital spirit is in the heart, as I shall explain. The organs cannot live or be nourished without the vital spirit which resides in the heart (s.v. *ve-ani*).”

Further: “It is well known that the heart is the seat of the vital spirit (s.v. *ve-ha-rav*).” He also wrote (s.v. *ma*) that the gentile scholars disagree regarding the source of mobility of the limbs. According to Galen, the source is in the brain; according to Aristotle, it is in the heart; and according to Maimonides, Aristotle had it right: “Even those who ascribe the source of motion to the brain must agree that life depends only on the heart. No one ever rejected this view.”

***The Talmud mentions nothing about the heart and its beating. Indeed, it discusses only the checking of breathing.***

Following the opinion of Haham Tsevi, Rabbi Valdenberg wrote\*\*:

The ancient gentile scholars disagreed regarding the dependence of life on the brain or the heart. Galen established that life depends on the brain; Aristotle believed that life depends on the heart. Our great Teacher, Maimonides, decided the issue in favor of Aristotle. As long as there is life in the heart, the creature is considered to be alive. It is clear that we adhere to Maimonides’ decision; his opinion is final and binding upon us. Haham Tsevi in his responsa (number 77) definitively established Maimonides’ opinion as normative and added that even those who believe that motion originates in the brain

\*\* See: Rabbi Eliezer Yehuda Valdenberg, *The Prohibition of Heart and Liver Transplantation*, Establishing the Moment of Death, ed. M. Halperin, p. 207, 2007; republished from *Assia* book 7 pp. 149-162, 1993



agree that life depends on the heart because no one ever rejected this view.

First of all, there is an internal contradiction in his position because he begins by writing that the gentile scholars disagreed about life depending on the heart or the brain. But he ends by writing that this controversy relates to the source of mobility and that all authorities agree that life depends on the heart.

The principal question, however, is what they meant when they said that the heart is “the seat of life.” Does the moment of death in humans indeed depend on the heart? Later we will deal with this question.

Further, Haham Tsevi wrote:

Breath departing from the heart is apparent through the lung as long as the heart be alive. It is perfectly clear that there is no breath without life in the heart, from which and for the purpose of which there is breath. Thus wrote Rabbi Abraham ibn Ezra on the verse “he breathed into his nose the spirit of life (Gen. 2:7)”: *The reason the verse mentions “nose” is because man lives by his nose because the nose removes warm air that gets its warmth from the heart and brings in fresh air.* Ibn Ezra implies that life depends on the nose because the nose expels hot air from the heart and brings in cool air to cool the heart. Without a heart, there is no respiration.

(s.v. *u-mishnateinu*, end)

Haham Tsevi is claiming, and from the scientific point of view he is entirely correct, that respiration is impossible without the heart. When the talmudic sages determined that breathing is a sign of life, they relied on the underlying fact of cardiac function. (The correctness of the theory of respiration as conceived in the days of Rabbi ibn Ezra and Haham Tsevi is irrelevant.)

Further, all this proves only that cardiac death is certainly death. But we have not yet proven that death cannot be defined by terminal cessation of breathing prior to cardiac death.

(3) Let us now turn to the responsum of Hatam Sofer (*Y.D.* 338). In its first part, this responsum deals with the permissibility of delaying burial in order to verify the fact of death. According to Hatam Sofer, not a single Torah authority is lenient in this regard. The only reason some people delay burial to verify the fact of death is a royal edict requiring such delay. But this is not the Torah position. According to Torah law, it is prohibited to delay burial unnecessarily. If you ask how the talmudic sages knew exactly when death occurred, the answer is:

The measure of death was necessarily transmitted to us. Perhaps there was a tradition among the early natural scientists which has since been forgotten by contemporary physicians.

The talmudic Sages relied upon those early scientists in many Torah matters, as explained in Tractate *Shabbat* (folio 85a). There they referred to the verse “do not trespass your neighbor’s border as established by those of old (Deut. 19:14).” Or, if they had no tradition from the early scientists, they must have received a tradition defining the measure of death as passed on by the sages since the revelation at Mount Sinai. Or perhaps they relied on their understanding that the verse “all who have the spirit of life in their noses” implies that life depends on the breath of the nose, as is clear in Tractate *Yoma* (folio 85b), Maimonides, *Tur*, and *Shulchan Aruch*.

It is very interesting that Hatam Sofer suggested that the halacha regarding the moment of death could have been based on one of three sources: (a) knowledge gleaned from the natural

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scientists; (b) knowledge based on a tradition originating with the revelation at Mount Sinai; (c) biblical exegesis.

The reason for this rests in Hatam Sofer's uncertainty regarding the validity of the exegesis of the verse "all who have the spirit of life in their noses" for the verse only states that all who breathe are alive. But the verse seems not to state that absence of breath is a certain sign of death. How, then, can we say that checking up to the nose is sufficient? Rather, Hatam Sofer tells us, the traditionally transmitted halacha originating from Mount Sinai establishes breathing as a criterion. Knowing that, the Sages associated the knowledge with the verse. Alternatively, the Sages knew what they knew on the basis of the wisdom of the early scientists and accordingly associated that knowledge to the verse.

In any event, Hatam Sofer did not decide the matter because it is still possible that the halacha truly derives from the verse implying that breath is a sufficient and necessary condition for life.

Hatam Sofer adds:

It is untenable to claim, as my dear friend has, that a victim caught under collapsed rubble is different because the verse "all who have the spirit of life in their noses" is referring to such a case. Further, the converse is well known, namely that in apparent sudden death there is more concern of error because of the panicked nature of the event. This is similar to the case of paralysis, generally called a stroke. Never the less once breathing stops, it is no longer permitted to violate Shabbat to save the patient. It necessarily follows that the rule applies to all deaths: the measure of death has been accepted in Judaism since our becoming a holy nation; all the winds in the world will not displace us from following the rules of the Torah.

Hatam Sofer is clearly referring to irreversible cessation of respiration because he himself adduced

the examples "apparent death" where breathing stopped for a short time due to panic or due to passing paralysis. In these examples, breathing might be restored. But irreversible cessation of respiration is the criterion of death accepted in Judaism, and all the winds in the world will not displace from this rule.

***in order to verify that the cessation of breathing is not temporary, we consider the patient's general condition.***

We are led to the conclusion that contemporary scientific knowledge which regards brain death and irreversible cessation of respiration as equivalent to death squares perfectly with the opinion ascribed by Hatam Sofer to the ancient natural scientists.

Now Hatam Sofer quotes Maimonides (*Hilchot Aveilut* 4:5) prohibiting closing the patient's eyes as his soul departs. "Instead, one waits a short time lest the patient have merely fainted." Hatam Sofer proves from the use of the phrase "a short time" that Maimonides did not mean hours or days. Rather, he required a brief waiting period because some cases of apparent death with cessation of breathing and pulse can persist for a short time after which the patient recovers.

On the other hand, Hatam Sofer quotes Maimonides (*Guide* 1:42) as mentioning certain diseases, such as paralysis or hysteria, where no breathing is apparent and no determination of death can be made for a day or two.

This seems contradictory. If there are cases where respiration can appear to cease for a day or two and where, therefore, no determination of death can be made, why is it sufficient to wait a brief time "lest the patient have merely fainted?"

The answer seems simple: Consider a patient who is not suffering from any of the rare conditions like paralysis or hysteria, or an unidentified victim caught under the rubble of a collapsed building.

Cessation of breathing for a short time in such a case is sufficient evidence of death. In such a case we need not be concerned with the improbable situations described above. In general, therefore, a short waiting time is sufficient to establish that cessation of breathing is irreversible rather than temporary.

It is clear that a brief wait is mandatory in order to check all the patient's signs to the best of our ability, lest the death be only apparent and not real. Temporary cessation of breathing is reversible. Therefore Hatam Sofer writes:

But after he appears to be stone dead without pulse, if subsequently the respiration arrests, we follow the principles of the Torah and consider him dead. Therefore, we do not delay his burial.

This means that in order to verify that the cessation of breathing is not temporary, we consider the patient's general condition. If he is lying still as a stone without reacting to any stimulus, and if he has no pulse and no signs of breathing, we wait a brief time to verify his condition, then we know that the cessation of breathing is irreversible and the patient's death can be established.

On the other hand, if the patient has a pulse, or if his body displays mobility, we cannot establish his death on the basis of the absence of breathing because he might start breathing again.

It is clear that Hatam Sofer does not mean that the condition of being "stone dead" is a necessary condition for establishing death because the Mishna (Tractate *Ohalot* 1:6) makes clear that a person who has been decapitated, but who is still convulsing, is not yet considered "stone dead" although he is indeed already dead.

Haham Tsevi (s.v. *u-mishnateinu*) adduces a proof from Tractate *Sota* (folio 45b) that a person who is decapitated while running will continue running a brief time until he collapses. Therefore, just as the requirement of being "stone dead" is not an essential condition for establishing death in every case, similarly the requirement of cessation of pulse is not necessary in every case. In our days, when

ventilating machines maintain the patient's pulse even after the death of his brain stem, cessation of pulse is not a necessary condition even though autonomous respiration will never be restored.

In such a case Hatam Sofer did not require total cessation of pulse. Continued pulse is merely an indication of the possibility of restoring respiration in routine cases.

## VI. The Image of God and the Prohibition of Murder

Let us return to the position of Haham Tsevi, who said that everyone agrees that the seat of the vital soul (*i.e.* the vegetative soul) is in the heart. What, exactly, is the vital soul?

Maimonides wrote:

You must know that man has a single soul with many distinct faculties. Since some of those actions are called souls, it might be thought that man has multiple souls. Physicians believed this until the chief of physicians declared that there are three souls; the natural (nutritive) soul, the vital (sensitive) soul, and the psychic (imaginative) soul. At times they are called potentials and diverse parts so that they are said to be parts of the soul. This nomenclature is used by many philosophers.

(*Comm. Shemona Perakim, ch. 1*)

According to Maimonides, as opposed to the physicians he mentions, man's soul is one. In fact, one ought not speak literally of "the natural soul," "the vital soul," etc. Rather, one should speak of the soul's diverse forces. Maimonides accepted the division of "natural force," "vital force," etc. associating their source and venue to the three principal organs: the liver, the heart, and the brain. See *Guide* 3:46 (end); *Pirkei Moshe* in *Refu'ah* art. 7:15 (ed. Muntner, publ.: Mosad ha-Rav Kuk, p. 94).

The "natural force" is a force for metabolic exchange, nutrition, and procreation. It exists both

***Man's image  
of God rests  
therefore in the  
brain.***

in animals and plants. The “vital force” is a force of motion, attraction, and repulsion. It is characteristic of all animals. The “psychic soul” is a force of thought, education, memory, and consciousness. It is especially characteristic in man, but exists in part in lower animals as well.

Maimonides also believed that inhaled air is absorbed in the three principal organs: the liver, the heart, and the brain. The absorption is in the form of what he calls “fumes” which influence the functioning of these central organs. Thus Maimonides:

For what the physicians call “spirits” are subtle fumes found in the bodies of living creatures. They originate, and they have their principal substance, from inhaled air. The “fume” found in the blood of the liver and in the ducts growing from it is called the “natural spirit.” The “fume” found in the blood of the heart and the pulsing ducts is called the “vital spirit.” And the “fume” found in the belly of brain and its derivatives in the neural sinuses is called the “psychic spirit”... The natural spirit is denser than the vital spirit, and the vital spirit is denser than the psychic spirit. As the air changes a bit, so the corresponding matters of the soul change accordingly. Loss of [quality of] air leads in so many people to spiritual loss. This explains why people experience panic, failure of understanding, and loss of memory even though their vital and natural activities are unchanged.

(*Hanhagat ha-Bri'ut*, sect. 4, p. 65 in the Muntner ed.)

Maimonides associates the power of thought and understanding to the seat of the “psychic spirit,” namely the brain. This accords with the

Talmudic view (*inter alia* in Tract. *Yevamot* 9a.), where the expression “he has no brain in his head” means “he has no intelligence, no power of thought.”

The term “psychic force” or “psychic spirit” (in Arabic *nafsaaniya*), as opposed to “natural” or “vital,” indicates the superiority of the force ascribed to the brain over the forces ascribed to the heart and liver because the force ascribed to the brain is “the force in man with which he cogitates, with which he contemplates, with which he acquires wisdom, and with which he distinguishes between good and bad (*Shemona Perakim*, ch. 1).”

Further, the intellectual force together with acquired knowledge constitutes the active intellect which is identified with “the form of man” The spirit of all flesh is the form which God gave it, and the superfluous knowledge found in man’s spirit is the form of a man perfected by knowledge. Regarding this form the Torah says “Let us make man in our image” (*Hilchot Yesodei ha-Torah* 4:8; cf. *Shemona Perakim*, ch. 1, end; *Guide* 1:1).

Man’s image of God rests therefore in the brain. Maimonides writes, however, in his *Guide* 1:39 (as quoted by Haham Tsevi) that life begins in heart for all creatures which have a heart. All the organs, including the liver and the brain, receive their force from the heart (see *Comm. Avot* 2:8, *Intro. to Mishna*, p. 31; my comments, *ibid.*, p. 298). In modern terms, we would say that the heart is the source of circulation and that all the organs depend on blood supplied by the heart.

Now let us compare Maimonides with the *Zohar* (also quoted by Haham Tsevi).

Come and see! When the Holy One, blessed be He, created man in the world, he made him similar to what is supernal. He gave him force and power in the middle of

***It seems that we should conclude from the verse that brain death, which is the nullification of the divine image in man, constitutes halachic death even if circulation of blood continues to parts of the body lower than the head.***

his body, where the heart resides. This is the power and sustenance of the whole body; from there all the body is sustained. The heart seizes and holds tight to a higher place in the brain in the head which resides above. These are thus connected.

(Zohar Num. 161a)

Note that the Zoharic discussion pertains to the actual body of man. Following that, the *Zohar* discusses the lower world, and then the aggregate of all worlds.

The heart supplies force and life to the whole body. But the superior part of man is the brain. Brain and heart are connected. In our terms: the heart, which is the source of circulation, gives the power of life to the whole body, including the brain. But the seat of human consciousness is the brain, not the heart.

What is the prohibition of murder? Why does the verse instruct us that “*he who strikes an animal shall pay,*” but “*he who smites a man shall be put to death?*” The Torah answers this question first time it mentions murder: “*he who sheds the blood of man -- by man shall his blood be shed for He made man in the image of God (Gen. 9:6).*”

In the Tosefta (*Yevamot* 8:5) we find:

Rabbi Akiva says: anyone who sheds blood nullifies the image, as it is said “*he who sheds the blood of man -- by man shall his blood be shed.*”

In the Midrash (*Gen. Rabba* 34:14) we find:

Rabbi Akiva expounded that anyone who sheds blood is considered to have lessened the image. What is the reason? “*He who sheds the blood of man -- by man shall his blood be shed.*” Why? “*because He created man in the image of God.*”

We see here that the Talmudic sages, following the explicit words of scripture, associated

the prohibition of murder with the nullification of the divine image of man. Although the *tanna'im* in general differed on the question of expounding the reason underlying scripture, in a case where scripture explicitly states a reason everyone agrees that that reason is of halachic significance. See Tractate *Sanhedrin* 21a and parallels.

***Perhaps one ought say that the connection between soul [neshama in Hebrew] and breathing [neshima in Hebrew] implies that the seat of consciousness, namely the brain, is also the source of man's capacity to breath.***

Now it is clear that the foundation of the prohibition of murder is the removal of the divine image from man. This means destroying the life of the brain. However, like the rest of the body, the life of the brain depends on the supply of blood from the heart. That is why murder is called “shedding blood,” as it is written: *he who sheds the blood of man -- by man shall his blood be shed.*

It seems that we should conclude from the verse that brain death, which is the nullification of the divine image in man, constitutes halachic death even if circulation of blood continues to parts of the body lower than the head.

Now it is clear why the Mishna in *Ohalot* establishes that decapitation is tantamount to death despite continued convulsions and despite continued pulse and circulation of blood. The reason is that the body is considered alive only as long as the head is attached. In the words of the *Zohar*: *The heart seizes and holds tight to a higher place in the brain in the head which resides above.*

## VII. The Seat of the Soul

Furthermore, the ancient medical and philosophical use of terms like “vital soul” residing in the heart, “natural soul” residing in the liver, and their association with passions and drives cannot stand the test of reality. Consider the case of heart transplantation where we knew the recipient before and after the procedure. His personality does not change at all! He exhibits the same thoughts, the

same emotions, the same drives, the same consciousness. He remains the same Jewish soul we knew before the transplantation.

On the other hand, a trauma to the brain, heaven forbid, can profoundly alter the victim's consciousness, emotions, desires, etc. The victim of brain trauma (Heaven forefend!) is called in every day parlance "not the same man." This is well known.

Transplantation operations, new in our generation, have provided an unambiguous proof that the heart is merely a "mechanical" pump which circulates blood. The liver is merely an instrument which cleans the blood. It is understood that the life of the body depends on both the heart and the liver because without fresh blood flowing to the organs life is impossible. But a man's personality resides entirely in his brain, not his heart and not his liver.

One could even say that the "personality" of lower animals, their emotions, memory, etc., reside in their brains. In animals too death is the disassociation of the head from the body, as the Mishna in *Ohalot* says: Similarly animals and fowl convey no ritual impurity until their souls depart. If they are decapitated, they convey impurity even though they are still convulsing.

Killing an animal is of course not murder because murder is the nullification of the divine image which is unique to man.

We should also contemplate the words of the Torah regarding man's essence. In Genesis 2:7 we learn: *And God formed man from dust of the earth and breathed into his nostrils the spirit of life. And he became a living soul.* Changing a lump of matter into a living being is described as breathing the spirit of life into his **nostrils**. The emphasis is on the connection between the concepts "spirit of life" and "soul of life" on the one hand, and the concept of respiration on the other.

Why is life described by means of respiration? Simply stated, the life of the body depends on the supply of blood to the organs "because the blood is the soul (Deut. 12:23)." But blood by itself is insufficient. The blood must contain oxygen, which

it obtains through the lungs which inhale oxygen. It follows that the process of respiration supplies something basic which life requires: oxygen.

This is the Creator's primary mercy in sustaining all his creatures: *He breathed into his nostrils the spirit of life.* The Midrash (*Gen. Rabba* 14:9) says regarding this verse:

Rabbi Levi said in the name of Rabbi Hanina: for each and every breath a man takes he ought praise his Creator. What is the reason for this? "*Every soul shall praise the Lord; every breathing shall praise the Lord.*" [The biblical word for "soul" is based on the Hebrew root meaning "breath".]

Man's soul is, however, spiritual in addition to being respiratory. The spirit of man is "the spirit of speech (Onkelos)" or "knowledge and speech (Rashi)," not simply air. Breathing is a **sign** of life, but not the **essence** of life. Therefore, the expression "*and man became a living soul*" means, as Onkelos translates, that man acquired the power of speech because the life of man can primarily be ascertained by his capacity to speak and react. It follows that "*He breathed into his nostrils the spirit of life, and man became a living soul*" was accomplished by introducing living breath into the speaking creature because speech is the breathing of air. Perhaps one ought say that the connection between soul [*neshama* in Hebrew] and breathing [*neshima* in Hebrew] implies that the seat of consciousness, namely the brain, is also the source of man's capacity to breath.

## VIII. Summary and Halachic Analysis

Let us return to the halachic analysis with which we began. We have seen that the Sage's sign for establishing the moment of death is the cessation of breathing. This was learned from the verse "*all who have the spirit of life in their nose.*" Further, we have seen that the Mishna in Tractate *Ohalot* establishes that even if a person's arteries are cut open, even if he is on the verge of death, he is considered to have the status of a living person. But if he is decapitated, he is considered to be dead.

As explained above, the reason for this could be not only because a decapitated person no longer breathes, but also because severing of the brain from the body constitutes a loss of life and loss of breath is merely an indication of death.

In the commentary of disciple of the Gaon of Vilna on the Mishna in Tractate *Ohalot* we find:

**Even if his arteries are severed:** such that he cannot live any more. Nonetheless he does not convey ritual impurity because his mind is lucid.

**Even if he is on the verge of death:** such that his mind is not lucid. He does not convey ritual impurity because he might continue to live.

*the essence of life is  
consciousness, and  
breathing is merely  
a sign of life.*

This means that if a person's arteries are severed, it is impossible to return him to life. Within a short time his cardiac and respiratory functions will cease due to loss of blood. Nonetheless for the time being, he is conscious and lucid.

On the other hand, a person on the verge of death is unconscious or only partially conscious but there might be a small chance that he can return to life. As the Sages have said that the "majority of those on the verge of death die." Although the majority die, some survive.

The Gaon of Vilna says that a person whose arteries are severed is not considered to be dead because his mind is lucid, and a person on the verge of death is not considered to be dead because his condition is reversible. It follows that a person who has irreversibly lost his consciousness is considered to be dead.

This is a more far-reaching conclusion than that of the great contemporary authorities mentioned above who admit destruction of the brain stem as a criterion of halachic death because if only parts of the upper brain are destroyed while the brain stem continues to live, the patient can still breath even

though he is unconscious and will never regain consciousness. According to the conclusions drawn from the commentary of the Gaon of Vilna, such a dieing patient is halachically dead, unlike the opinion of the other great authorities who require cessation of breathing in order to establish halachic death.

In any event, even if we refrain from relying on the implications of the commentary of the Gaon of Vilna, his interpretation supports the idea we developed above, according to which the essence of life is consciousness, and breathing is merely a sign of life.

In section III above we referred to the opinion of Rabbi Moshe Feinstein (*Iggerot Moshe Y.D. 3:132*) who compares the state of brain death to decapitation. In his last letter on this matter, mentioned above in section IV, he explicitly said that death depends on the loss of the capacity to breath, not on death of the whole brain: "even if the heart can still work for a few days, as long as the patient has no autonomous breathing capacity, he is halachically considered to be dead.

In his ultimate opinion, Rabbi Sh.Z. Auerbach also tends to accept the idea that brain death is tantamount to decapitation. But he limited this in two ways: (a) In his opinion the whole brain must die for the comparison to be valid. Death of the brain stem alone is insufficient; (b) As long as it is not definitively known that the whole brain has died, a brain dead patient has the status of *safek* (doubt) because he might be halachically dead and he might be halachically on the verge of death. It follows that he may not be moved for non-therapeutic purposes.

Rabbi Sh.Z Auerbach's requirement that the whole brain be dead, not only the brain stem which is responsible for respiration, proves that he felt that the concept of decapitation is unrelated to the concept of respiration. Instead, decapitation counts as death because the center of life and consciousness is in the brain.

This opinion, however, is questionable because if one is concerned with the loss of life and

consciousness, what difference does it make if the whole brain dies or not? In any event, death of the brain stem alone means irreversible unconsciousness and unconsciousness is the state in which a person has no capacity to act willfully and no capacity of conscious thought. If so, even in cases of destruction of less than the whole brain there is no living consciousness. According to the Gaon of Vilna, such a dieing patient is to be considered halachically dead.

And if one is concerned with the state of respiration, why is the absence of autonomous respiration and the impossibility of restoring it insufficient to categorize the patient as halachically dead in accord with the sole sign mentioned by the Talmudic Sages, cessation of breathing?

Rabbi Auerbach required a strict position in viewing the patient as dubiously on the verge of death, thus prohibiting moving him for non-therapeutic purposes. Rabbi A.A. Shapiro has commented on this position in two ways: (a) Examinations performed to verify brain death are likely to be of benefit to the patient because they might reveal signs of life, thereby enabling the medical staff to treat him and perhaps restore him to life; (b) A brain dead patient attached to a ventilating machine does not exhibit signs of being on the verge of death (*goses*; see Rema, *Even ha-Ezer* 121:6; *Choshen Mishpat* 212:2). Therefore, he does not have the status of a person on the verge of death.

We can conclude that the permissibility, and indeed the great obligation, of donating organs from a brain dead donor for transplantation in lifesaving procedures is well founded and sturdy. There is no reason to object to anyone who relies on the great authorities who established this position for they are the ordained chief rabbis of Israel, as Hazon Ish wrote (see *supra*). On the contrary, it is very meritorious for a person to save a life even after his own death, and it is a great mitzvah for the family of the donor which gives their consent for the procedure.

## International Responsa Project

**Subject: Euthanasia**

**Date:** April 2007

**Q:** *There is a patient who is on a ventilator for two weeks. She is completely sedated and her blood pressure is maintained by an adrenaline infusion pump, to raise the blood pressure. The question asked is if the doctor can stop this adrenaline because the patient is beyond being healed.*

*In the guidelines by Professor Steinberg it says in 6a, "to gradually lower dopamine dosage."*

*Bechavod rav*

**A:** Shalom,

From halakhic point of view the following issues have to taken into account:

The patient is terminal, *i.e.*, his life expectancy is less than 12 months;

The treatment is intermittant in nature, *i.e.*, there is a need to re-start the dose or the mode of treatment periodically;

The amount of suffering.

From the details of the question it seems that the patient is indeed a dying patient with *chayye sha'ah* only.

The dopamine is by nature an intermittant treatment so that when the dose finishes one is permitted not to add another amount of it.

The issue of suffering is a debate between the *poskim*. According to R. Eliashiv the suffering has to noticeable, *i.e.*, we should see actual signs of suffering in the dying patient. Also according to his opinion the treatment has to be such that causes suffering otherwise it is not permissible to withhold it. Hence, according to this opinion the dopamine ought to be continued. According to R. Feinstein and R. Auerbach any patient who is dying is by definition suffering even if doctors don't realize it. Also the suffering is regarded by mere contiuous life of suffering regardless of the mode of treatment. Hence by this opinion one is permitted not to resume the next dose of dopamine.