The idea of death can be a very sensitive topic for many. The exact time that a person has passed away is also a very delicate and, more importantly, controversial topic in both the Jewish and secular worlds. According to Judaism, the human life is infinitely valuable. It is so valuable, in fact, that if someone were to prevent a person from living for even a single moment, he would be considered a murderer. It is for this very reason that the point at which a person dies should be carefully and thoroughly defined. This definition must follow not only halacha (Jewish law), but it must constantly be redefined and aligned with new medical knowledge, procedures, and standards [1]. So, how is death defined by halacha? According to Rabbi Soloveichik, halacha defines death by the cessation of three vital processes: respiration, cardiac activity, and brain activity [2]. It is debated, however, if halacha recognizes brain death alone, even though there is continued cardiac activity [3].

One first must consider the medical and legal views of death. Let us first examine the legal view. The legal view of death incorporates the medical views on the subject. In 1981, the Uniform Determination of Death Act was passed by the President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. This Act clearly defined when it is permissible to declare a patient dead. It read, “An individual who has sustained either: 1) irreversible cessation of circulatory and respiratory functions or 2) irreversible cessation of all functions of the entire brain, including the brainstem. The declaration of death must be made in accordance with acceptable medical standards.” In other words, no matter what the reason is for the cessation of breathing or the heart pulsing, the patient is deemed dead. The second and newer requirement refers specifically to the brain. The requirement is that the whole brain must stop working - both the upper left and upper right hemispheres, as well as the brain stem [4].

There is a list of guidelines for defining death the President’s Commission. These guidelines require irreversible loss of function within the heart, lungs, and brain. Cessation of the heart and lungs is examined through commonly accepted medical procedures. Irreversibility within this cardiopulmonary category is described as complete cessation of function, in addition to the patient being unresponsive to any treatments. Neurological cessation includes complete malfunction of cerebral and brain stem processes. Brainstem malfunction is determined when a doctor asserts that gag reflexes and certain eye reflexes, known as cephalic reflexes, are damaged. This examination also includes apnea testing, which confirms that there is no ability to breathe. The apnea testing ensures that there can be no possibility of spontaneous breathing, which is controlled by the brainstem; thus, the apnea test confirms the death of the brainstem. Irreversibility within the neurological category consists of three factors: there is no chance of recovery, unresponsiveness to treatment, and a cause for the dysfunction of the brain is clearly defined and is adequate enough to explain the reason for brain dysfunction. It is important to rule out any possible medical conditions that mimic brain death, such as drug overdose and kidney failure. So long as the patient demonstrates cessation and irreversibility in either the cardiopulmonary or the neurologic categories, the patient is legally dead [4].

One may wonder what kind of testing can confirm brain death. Three criteria indicative of brain death are: (a) coma and total non-reactivity to painful stimuli; (b) total absence of brain stem reflexes; and (c) total absence of spontaneous respiration, or apnea [5]. Various technologies are used to assess brain death. One method, though it cannot be used as a sole diagnostic source, is through an electroencephalogram, or EEG, which measures only the electrical activity in the upper brain. It is for this reason that an EEG cannot completely confirm brain death, as it excludes measuring the electrical activity within the brainstem. However, the EEG can be of some probative value if the test is performed by a physician who has had many years of experience with the EEG. Yet another test, done by performing cerebral blood flow studies to confirm that the brainstem is dead, determines whether the brainstem is functioning.
brain and brainstem are receiving an adequate degree of blood flow. This is done through cerebral angiography, which injects dye into the four major blood vessels leading to the brain. Once the dye is injected into these veins, it is possible to determine if there is any blood flow to the brain. This procedure, though quite accurate in diagnosing brain death, is not commonly used, as it is impractical, and puts the patient at risk, as it involves transporting him outside his room to another part of the hospital [4].

How is brain death defined *baladically*? Is it possible under *baladic* that brain death alone can be sufficient evidence of human death? It was not until about thirty years ago that the accepted Jewish concept of death included brain death. Before this point, one was considered dead when the heart had stopped beating and the person stopped breathing. This thought is related to a Talmudic (Yoma 85a) discussion stating that it is permissible and obligatory to desecrate *Shabbat* to save a human life. The example used is of debris falling onto a person during *Shabbat*.

If a building collapses on the *Shabbat* and someone may be trapped in the rubble, one must desecrate the *Shabbat*, if necessary, to try to save the victim. If one finds him alive, one extricates him and tries to save his life. If he is found dead, one leaves him there until after the *Shabbat*. How far does one dig to determine whether the victim is dead or alive? Up to the nose! An additional view is up to the heart. The main sign of life is in the nose, as it is written: ‘all in whose nostrils is the breath of the spirit of life’ (Genesis 7:22).

Thus, one should break *Shabbat* and take the debris off the person’s body, even though it is most likely that the person is, indeed, dead. In other words, the possible preservation of life trumps the rules of *Shabbat*. It is only until the rescuer is sure that the victim is dead that the rescuer can no longer break the laws of *Shabbat*. The rescuer can be certain that the victim is dead by removing the debris until the victim’s nose is unobstructed and then can determine whether the victim is breathing or not. The later view of this case mentioned that the body should be removed of the debris up to the chest; if the rescuer does not find a heartbeat, the victim is considered dead. This, however, is the less supported view, as sometimes a heartbeat can be so faint that it goes unnoticed [3].

As noted by Rav Avraham Steinberg, there are various rabbinic interpretations of this pivotal Talmudic passage [5]. Some rabbinic authorities maintained that a person is clinically dead and is considered a corpse when it is clearly evident that respiration has ceased. The notion of defining death by the absence of respiration can be rooted to a statement in the Torah that reads, “…all in whose nostrils is the breath of the spirit of life [Genesis 7:22].” Interestingly, as the roots of Hebrew words often hold the secrets to their definitions, the Hebrew word for soul, *neshama*, very much resembles the Hebrew word for respiration, *neshima* [1]. The other Talmudic view of “up to the heart” has been interpreted as “up to the navel,” perhaps an indication of abdominal respiration, rather than cardiac activity. Other Rabbis maintained that cessation of respiration is only one criterion that then must be combined with other clinical signs, such as the cessation of heartbeat and peripheral pulses. Accordingly, death may be defined as the termination of respiratory and cardiac functions. Some consider cessation of respiration to be the definition of death and therefore if there is no breathing, the person is legally dead. Others consider termination of respiration to be a symptom of death, but the definition of death is really cardiac function. Another opinion is that although respiration is the main sign of life, if other signs of life are observed in other organs, the lack of respiration by itself cannot establish death. In other words, the Talmudic passage from *Yoma* is interpreted differently by different rabbinic authorities [5].

How is brain death viewed according to *baladicha*? Rav Steinberg noted that brain death represents the “irreversible cessation of brain and respiratory functions” and has many diverse causes, including head trauma, malignant brain cancer, metabolic disturbances, massive intracranial bleeding, and the failure of vital organs [5]. It is beyond the expertise of this writer to explore the various rabbinical opinions regarding brain death. Most rabbinic discussions, however, revolve around another Talmudic passage (Ohalot 1:6): “People who are beheaded, however, convey impurity as corpses, even if they are still moving convulsively. The latter is considered only a postmortem reflex action, like the tail of a lizard which moves convulsively.” Rav Steinberg cited the Rambam (Tum’at Met 1:15) who continued, “So, too, someone with a broken neck with most of it severed, or whose back is ripped open like a fish, or who is decapitated, or whose body is cut in half at the abdomen conveys ritual impurity even if one or more organs or limbs are still shaking” [5].

Again, rabbinic decision makers maintain various positions. Some Rabbis concluded that any person close to death, lacking cognition, and who cannot survive is considered dead. Other Rabbis required full decapitation, so that the brain and body are no longer connected, indicating that any subsequent convulsive shakings were not indicative of life. Here, the stress is on the state of the body: an intact body is indicative of life, whereas decapitation alone is not indicative of death, but rather is important in issues of the laws of purity and impurity, as such an individual is considered to be a corpse. Finally, there are those who maintain that decapitation is an absolute and irreversible indication of the de-
struction of brain functioning. Any patient with absolute and irreversible destruction of the brain, even if not actually decapitated, is defined as dead or as “physiologically decapitated.” This correlation between decapitation and modern cases of brain death is accepted by Rabbi Dr. Moshe David Tendler and others but is not accepted by all [3].

In compliance with the Talmudic (Yoma 85a) definition of death being that a person cannot spontaneously breathe and appears to be dead, permanent and complete damage to the brain covers this definition of death. Rabbi Moshe Feinstein, who strongly supported the traditional Jewish view of death being the termination of breathing, asserted that “by injecting a substance into the vein of a patient, physicians can ascertain that there is no circulation to the brain - meaning, no connection between the brain and the rest of the body - that patient is legally dead in Judaism because he is equivalent to a decapitated person.” The procedure being referred to is a cerebral angiography, the test to measure blood flow to the brain. Dr. Fred Rosner, following this logic, noted that brain death is the only reasonable definition of death [3].

Both halacha and medicine modified their definitions of death to include brain death or interminable brain cessation as a critical factor in the determination of death. Both agree with the basic idea that death can be defined as either the permanent failure of cardiac activity and respiration or the complete cessation of brain activity. Both also seem to take upon the extra stringency of making sure that all three vital processes must be nonfunctional in order for a human to be legally and medically considered dead.

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