

Harvard Ad Hoc Committee on Brain Death

In 1968, this committee of the [Harvard Medical School](#) published a report describing the following characteristics of a permanently nonfunctioning brain, a condition it referred to as "irreversible coma," now known as [brain death](#):

1. *Unreceptivity and unresponsivity*--patient shows total unawareness to external stimuli and unresponsiveness to painful stimuli;
2. *No movements or breathing*--all spontaneous muscular movement, spontaneous respiration and response to stimuli are absent;
3. *No reflexes*--fixed, dilated pupils; lack of eye movement even when hit or turned, or ice water is placed in the ear; lack of response to noxious stimuli; unelicitable tendon reflexes.

In addition to these criteria, a flat electroencephalogram (EEG) was recommended. The committee also noted that drug intoxication and hypothermia which can both cause reversible loss of brain functions should be excluded as causes. The report was used in determining patient care issues and organ transplants. The condition of irreversible coma, i.e., brain death, needs to be distinguished from the [persistent vegetative state](#), in which clinical presentations are similar but in which patients manifest cycles of sleep and wakefulness. [See [President's Commission](#) for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death* (Washington, DC: U.S. Government Printing Office, 1981)].