Israel - The Health Ministry intends to expand the number of medical examinations that are likely to determine with greater certainty whether a patient is brain dead. The move comes in response to the latest findings, which show a decrease of 40 percent in the ability of hospitals to declare an individual brain dead since a June 2009 law went into effect.

The wording of the legislation - formulated as a compromise between the Chief Rabbinate and the Israeli Medical Association - stipulates the conditions necessary in order to classify an ailing patient as brain dead.

It is only after doctors determine that a patient is in this state that they are permitted to request permission from family members to allow the organs of their loved one to be donated to needy recipients.

The original purpose of the 2009 law was to increase the number of organ donations by formally allowing the removal of organs from a deathly ill patient before his heart stops beating. It is essential for vital organs that are to be transplanted, such as the heart, lungs and liver, to be removed from a donor before his blood ceases to be pumped throughout the body.

Despite the original intent of the bill, it appears that abiding by the new criteria it sets out has led to a 40-percent drop in hospitals' ability to determine whether a patient is indeed brain dead.

A study initiated by the Israel Transplant Education Unit 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 outlined in the 2009 law - a rate of just 54 percent.

Transplant experts say the low rate is due to technical problems related to the equipment used to verify cases of clinical brain death.

In Israel, half of all families refuse to donate organs, usually citing religious reasons. In 2009, officials did report a slight increase (54.3 percent) of those who agreed to donate the organs of a brain-dead relative.

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.

By law, brain death can only be diagnosed and certified by two doctors who have undergone extensive training and are not involved in the care of the patient. Afterward, their clinical diagnosis must be verified by an examination using five different tools: the brainstem auditory evoked response test (BAER); transcranial doppler test (TCD); the somatosensory evoked potential test (SEP); and either a computed tomography (CT) exam or a magnetic resonance imaging (MRI), which examines the flow of blood in the brain.

In some instances, however, these examinations detect physiological processes still ongoing in patients who have been clinically declared brain dead.

The panel moved to add a procedure known as carotid angiogram, a test which looks for blockages in the neck arteries that supply blood to the brain. The test allows doctors to inject a certain substance which enables them to determine whether the lack of blood flow to the brain is acute enough to warrant a diagnosis of brain death.

The ministry will also allow doctors to use a single-photon emission computerized tomography (SPECT) scan, a method of nuclear imaging whereby a radioactive substance is injected into the blood so as to allow a three-dimensional mapping of the brain to determine its level of activity.