

# New tool may help improve organ donation rates

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A new tool may help neurologists predict which coma patients may be candidates for organ donation, according to a study published in the April 27, 2010, print issue of *Neurology*, the medical journal of the American Academy of Neurology.

Organ donations must take place within 60 minutes of when the heart stops beating. Coma patients and other people with irreversible brain injuries are often potential organ donors because their other organs are usually healthy.

"Neurologists must often predict whether the patient will be a candidate for [organ donation](#), but the existing tools are not designed for people with critical [brain disease](#) or they require the patient to be taken temporarily off ventilator support to conduct the test," said study author Alan Yee, DO, of the Mayo Clinic in Rochester, Minnesota. "This new test is a significant improvement because it can be conducted before the patient is taken off breathing support and is designed for people with critical brain disease."

For the study, Yee and his colleagues analyzed the information from all patients during a seven-year period from the neurologic [intensive care unit](#) at the Mayo Clinic whose life support was withdrawn. Those who were brain dead or who did not have support for breathing were not included in the study.

A total of 149 comatose people were included in the study. After the

withdrawal of life support, the heart stopped beating within 60 minutes for 75 people.

The study identified four factors that make it more likely that a person with irreversible brain damage will be a candidate for organ donation. The four factors are: no corneal reflex, no cough reflex, no motor response or extensor motor response, and high scores on the oxygenation index.

For the corneal reflex, people blink when the cornea is touched with a small piece of cotton or dripping water solution. People who do not have a corneal reflex are more likely to be candidates. People who do not have a cough reflex also are more likely to be candidates. For the cough reflex test, a chemical irritant is placed near the patient to see if the cough reflex will expel the irritant.

Responses to painful stimulation can also be tested. People who have no motor movements in response to pain and people who have extensor movements on their own or in response to pain are also more likely to be candidates for organ donation. Extensor motor response is a reflex movement of straightening the arms and legs.

People who have a score of greater than 4.2 on the oxygenation index, which is a test of how well the lungs are functioning, are also more likely to be good candidates for organ donation.

The study found that people with all four factors were 93 percent more likely to die within 60 minutes of withdrawal of life support than people with none of the factors. People with one of the four factors were 65 percent to 76 percent more likely to die within 60 minutes.

"This research will need to be validated with further studies, but it would be a valuable tool that could help improve organ donation rates after

cardiac death and also help optimize the allocation of medical resources," said Yee.

Provided by American Academy of Neurology

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