

## Brain death

Brain death is not the same as coma, because someone in a coma is unconscious but still alive. Brain death occurs when a critically ill patient dies sometime after being placed on life support. This situation can occur after, for example, a heart attack or stroke. The heart continues to beat while the ventilator delivers oxygen to the lungs (the heart can initiate its own beating without nerve impulses from the brain) but, despite the beating heart and warm skin, the person is dead. Since the brain has stopped working, the person won't breathe if the ventilator is switched off.

### Signs of brain death

Some of the signs of brain death include:

- The pupils don't respond to light.
- The person shows no reaction to pain.
- The eyes don't blink when the eye surface is touched (corneal reflex).
- The eyes don't move when the head is moved (oculocephalic reflex).
- The eyes don't move when ice water is poured into the ear (oculo-vestibular reflex).
- There is no gagging reflex when the back of the throat is touched.
- The person doesn't breathe when the ventilator is switched off.
- An electroencephalogram test shows no brain activity at all.

### Brain death is not the same as coma

Brain death differs from other states of unconsciousness in important ways. For example, coma is similar to deep sleep, except that no amount of external stimuli can prompt the brain to become awake and alert. However, the person is alive and recovery is possible. Brain death is often confused with a persistent vegetative state, but these conditions are not the same either. A persistent vegetative state means the person has lost higher brain functions, but their undamaged brain stem still allows essential functions like heart rate and respiration to continue. A person in a vegetative state is alive and may recover to some degree, given time. Brain death means the person has died.

### Anguish for the family

Because life support machines maintain the person's breathing and heart rate, they are warm to the touch. This gives the illusion that the person is still alive. Family members may hold a false hope that the person is just comatose and could wake up with time or treatment. It is important for the medical staff members to fully explain that brain death is final, and that the person is dead and has no chance of ever regaining consciousness again.

### Organ donation is possible

In some cases, a person who is brain dead may be a candidate for organ donation. If the person was a registered organ donor, or if their family knew of their wish to be an organ donor, their death is declared but the ventilator is left on. Drugs that help preserve the internal organs are still given. The dead person then undergoes an operation to remove viable organs such as kidneys. After the operation is complete, the ventilator is switched off. Funeral arrangements can then be made by the family.

### Where to get help

- Your doctor
- Neurologist
- Victorian Organ Donor Service - LifeGift Tel. (03) 9349 2278
- Australians Donate Tel. (08) 8351 5222

### Things to remember

- Brain death occurs when a critically ill patient dies sometime after being placed on life support.
- In some cases, a person who is brain dead may be a candidate for organ donation.

**This page has been produced in consultation with, and approved by:**

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