

Organ Donation after Brain Death (Neurological Determination of Death - NDD)

BC Transplant is here to support you and your family

BC Transplant is here to support your family and to answer your questions as you face many of the end of life decisions that come with a sudden and tragic loss of a loved one.

Organ and tissue donation is the most precious, unique and selfless gift a person can give; it is the ultimate act of humanity, making the individuals and families who choose the opportunity, true heroes.

Is Organ Donation the Right decision for your loved one?

Has your loved one previously registered as an organ donor, or discussed their end of life wishes? A BC Transplant representative can check the provincial organ donation registry to confirm if they have registered their decision to be a donor.

Many people are in favour of organ donation, but have not formally registered with BC Transplant. Would organ donation be something that your loved one would want at this time?

What can you expect if your loved one is an organ donor?

Your loved one will be cared for with respect and dignity throughout the entire process.

A BC Transplant specialist will meet with your family to review the consent for organ donation, and to obtain medical and social history. BC Transplant will be available as a support and resource throughout the entire organ donation. During this time your loved one will remain on the ventilator in the Intensive Care Unit and will continue to receive medication.

Prior to proceeding with organ donation, extensive testing, such as blood work, chest x-rays, CT Scan, Echocardiogram, and Bronchoscopy may be required to further determine which organs are suitable to donate. Every donor is tested for infectious diseases such as HIV, Hepatitis B and C, and syphilis. Medical testing, recipient matching and coordination of surgical times can take 24 – 48 hours.

When organ donation occurs after Neurological Determination of Death, you are given the opportunity to say your good byes in the Intensive Care Unit, before your loved one is moved to the operating room.

Surgical recovery of the organs occurs in the operating room and can take up to 4-6 hours.

BC Transplant will ask if you wish to be contacted when the surgical retrieval of organs is completed. Sometime over the next week, your family will receive a letter from BC Transplant to thank you for donating and to inform you of the outcome.

What organs can be donated?

The option of what organs can be donated will be different for every patient, depending on their health and medical history. Patients who meet the criteria for NDD (Brain Death) can be assessed to donate:

- heart,
- lungs,
- liver,
- kidneys,
- pancreas, and
- cornea (eyes).

What is Neurological Determination of Death? (NDD)

Neurological determination of death (also referred to as “brain death”) means the brain has permanently lost all function and a diagnosis of death using neurological criteria has been determined.

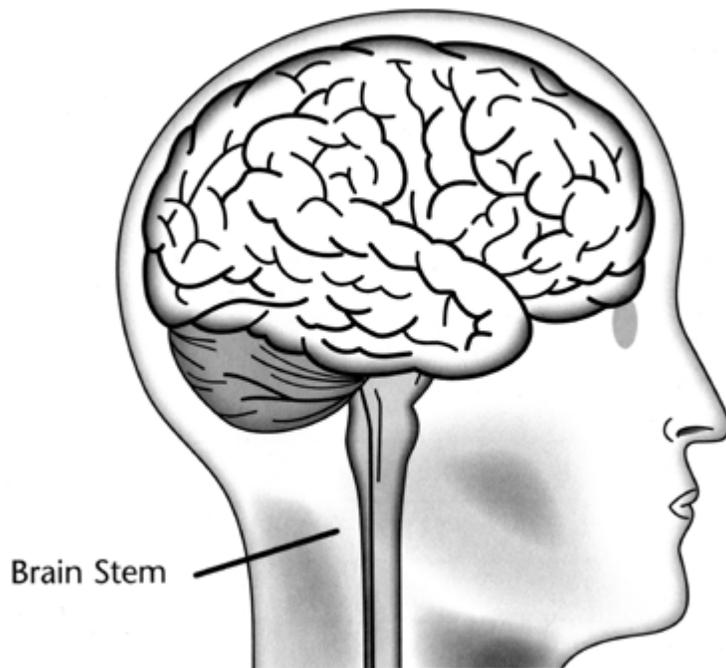
As a result of the severe brain injury or trauma your loved one suffered, the accumulation of fluid, blood, or a swelling of the brain cells has caused pressure to build inside the skull, making it increasingly difficult for life-giving blood and oxygen to flow into the brain. Since the bones of the skull create a space only slightly larger than the brain, the pressure increases, the brain soon has no place to expand. The pressure then builds rapidly to the point that all blood flow to the brain is completely blocked and as a result, all brain function ceases. Without the oxygen the blood delivers, the brain begins to die immediately. Once brain cells die there is no way to bring them back to life; the brain itself dies and no longer functions in any capacity – and never will again. When the brain dies, the person can no longer breathe, move, think or feel. Neurological death is permanent, irreversible, and there can be no hope of recovery.

Neurological death is death.

How is the diagnosis reached?

Two physicians who are experienced in caring for patients suspected of neurological death will perform a standard series of tests designed to assess the function of the brain.

The Brain



Physical examinations are conducted that detect brainstem reflexes such as gag, cough, physical movement, and the changes in the eyes (pupils) when exposed to light.

Apnea testing is done to determine if the patient will breathe while temporarily disconnected from the ventilator (breathing machine). A patient who is brain dead will not breathe during this test because the breathing control center in their brain has died.

Sometimes additional testing, like a CT scan of the brain or a brain flow study that checks for blood flow to the brain is also used to help determine the diagnosis of neurological death.

The tests are conducted in such a manner so as to leave no room for error. Once those brain functions are gone they never come back

What happens when neurological death is determined?

Once your loved one has been declared brain dead, plans are made to stop the ventilator (breathing machine). **If organ donation is being considered, your loved one will stay on the ventilator and continue receiving medications until all arrangements for organ donation are made.**

It is at this time that you will be approached with the opportunity to donate your loved one's organs and/or tissues. Members of the medical team and BC Transplant representatives can answer questions and provide counsel during this time.

How can your loved one be dead while there is still a heart beat?

It can be confusing and upsetting to be told that your loved one is dead when you can see the chest rise and fall and the heart is beating.

Your loved one is not alive, it is the ventilator and medications, not the heart and lungs that are sustaining the body's vital functions. As long as life support is being provided, the heart will continue to beat,

People talk about miracles—has anyone ever recovered from brain death?

There has never been a recorded case of someone recovering from neurological death. When death is determined by neurological criteria, the brain tissue has permanently died and cannot be healed.

Determining time of death.

Once neurological death has been pronounced, the time of death is declared. You may receive a call from the coroner at some time over the next few days.

What if you have more questions?

During this time of tragedy, BC Transplant is here to support you and your family; answering any questions or concerns you may have, at any time of day.

Toll Free Information Line: 1-800-663-6189

Lower Mainland: 1 (604) 877-2240

www.transplant.bc.ca

Glossary

Aneurysm – a weakness and dilation of a blood vessel (similar to a balloon) which as it expands has the potential for rupture. Rupture of an aneurysm in the brain causes a stroke.

Angiography (Angio) – a test to confirm absence or presence of blood flow.

Ancillary Testing – a specific test to determine the absence or presence of blood flow in the brain

Apnea – not breathing.

Brain Hemorrhage - leakage of blood from the blood vessels into the brain itself.

Brainstem Reflexes – reflex actions such as pupil response to light, cough, gag, breathing and movement. The absence of brainstem reflexes indicates the brain is no longer able to send messages to the body to make it work - to breathe and to perform other vital functions. Therefore, brain stem death or neurological death is death.

Bronchoscopy – a procedure to visualize inside a patient's airways and lungs.

CT Scan - a special X-ray technique that uses a computer to incorporate multiple X-ray images into a 2 dimensional cross-sectional image.

Coma – a deep, prolonged and sometimes irreversible unconsciousness. A Coma is **not** the same state as brain death.

Declaration of Death - the time a patient is declared dead. Once Neurological Death is determined, this is the time of death even while the patient is still on the ventilator.

Diagnosis – the process of identifying a disease from its signs and symptoms.

Echocardiogram (Echo) – an ultrasound of the heart that shows how the heart muscle and valves are functioning.

Magnetic Resonance Imaging (MRI) – a special imaging technique used to show internal structures of the body.

Neurological – having to do with the brain and/or other parts of the central nervous system.

Spinal Reflexes – body movements that are caused by electrical impulses conducted by, or originating from, nerves or the spinal cord rather than the brain.

Stroke – a sudden loss of consciousness, sensation, and voluntary motion caused by rupture or obstruction of an artery in the brain.

Ventilator – a machine which mechanically assists a patient's breathing, or takes over this function when they cannot breathe.

Healthcare Team:

ICU Nurses: _____

ICU Doctors: _____

BC Transplant Donation Coordinator: _____

Social Worker: _____

Pastoral Care: _____

Other: _____