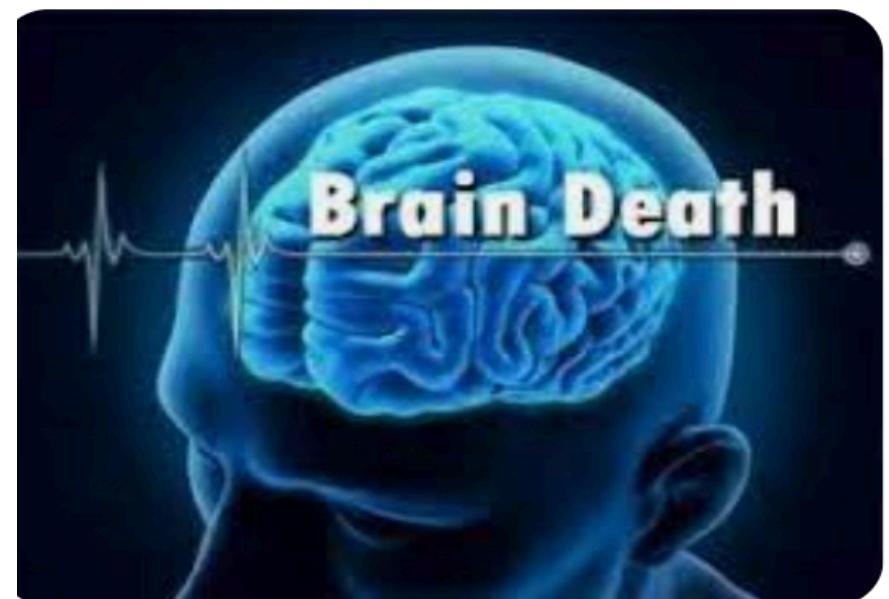


# Lecture 8

## Brain Death

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2025\_2026



تحديث من خلال

# *Brain Death*

- Defines as the irreversible cessation of either circulatory and respiratory functions or all functions of the entire brain ,including the brainstem.
- An evaluation for brain death should be considered in patients who have suffered a massive ,irreversible brain injury of identifiable cause established by history ,clinical exam ,lab testing or neuro imaging ( CT scan or MRI).



**\* It is not the same as a coma or brain damage because there's no chance of recovery and it is irreversible.**

**\* Once brain death is confirmed the person is legally deceased and life support is removed unless organ donation is an option.**



# Causes of Brain Death

- 1] Severe head trauma from accidents or head injuries.
- 2] Internal brain injuries like strokes or aneurysms.
- 3] Lack of oxygen ( anoxia or ischemia)  
from events like a heart attack (Cardiac arrest )  
or drowning that leads to irreversible brain damage.
- 4] Brain infections like meningitis or encephalitis.
- 5] Brain tumor that cause swelling and pressure.

# Diagnosis of brain death

**A- is based on the demonstration of :-**

**1. Coma** :The patient must exhibit irreversible ,unresponsive coma with a known cause sufficient to explain the loss of brain function.

**2. Absence of Brainstem Reflexes:**

- This includes no pupillary response to light ,corneal , oculocephalic( doll's eyes ) ,oculovestibular ( caloric) gag and cough reflexes.

**3. Apnea** :The absence of spontaneous respiratory effort during a formal CO<sub>2</sub> challenge( apnea test).



## **B- Clinical examination**

- Typically by one or two doctors ,to confirm the absence of all neurological function ,This involves:

Prerequisites :Ensuring confounding conditions like severe hypothermia ,low blood pressure, hypoglycemia ,or the presence of sedating drugs have been ruled out.

## **C- Ancillary Tests( if needed)**

- Tests like an electroencephalogram( EEG )to check for electrical activity or a cerebral blood flow study ( cerebral angiography ) may be used to confirm the diagnosis especially if a complete clinical exam is not possible.

## D. Lazarus 'Sign

- \* Brain-dead patients may occasionally exhibit spontaneous , brief movements of the limbs or torso ,known as Lazarus 'sign.
- \* These are spinal reflexes ,not evidence of brainstem activity and are often triggered by hypoxemia or spinal cord ischemia after ventilator disconnection.

## E. The Potential Organ Donor

- \*The diagnosis of brain death often precedes the opportunity for organ donation.





THANK YOU!



WPS Office تحميل من خلال