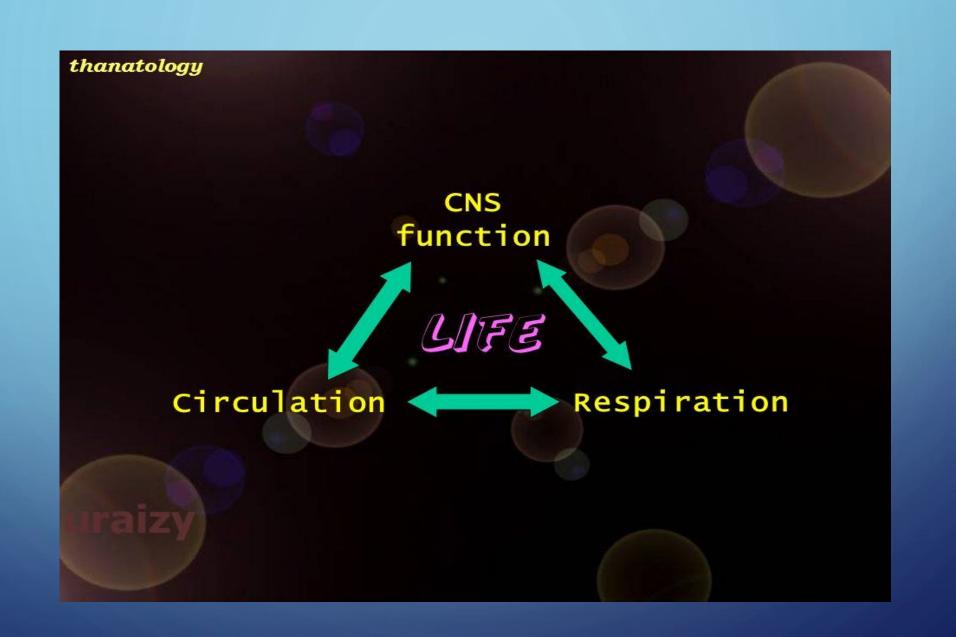


LEARNING OBJECTIVES

- Define thanatology.
- Define death.
- Describe stages of death.
- Describe medico legal importance of stages of death.
- Define mode of death.
- Describe different modes of death.

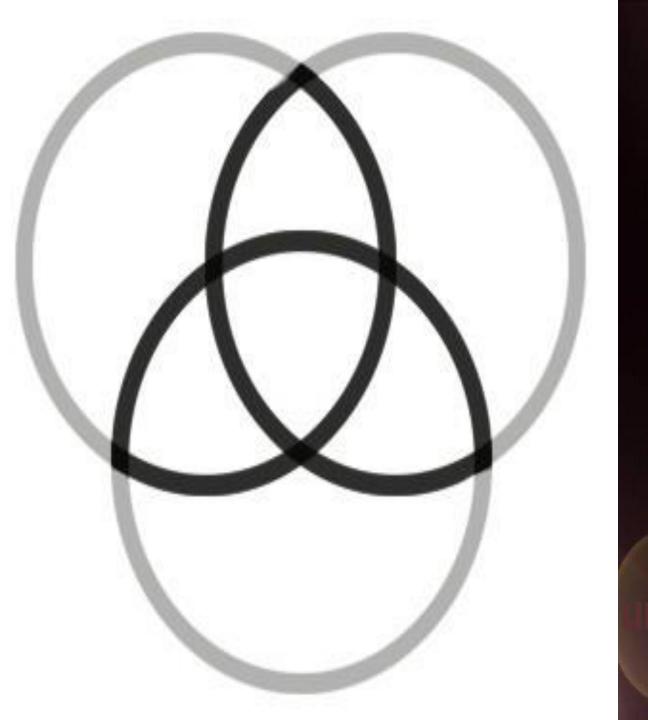
THNATOLOGY

- Thanatology is the scientific study of phenomena and practices relating to death.
- The medico legal study of death is called forensic thanatology.
- The onset of death ends life and makes the personality extinct.
- Life depends upon the integration of three vital systems namely respiration circulation and innervations also called tripod of life.



DEATH

- The persistent stoppage of any vital system eventually leads to irreversible loss of function of the others precipitating death.
- There are therefore three primary modes of death irrespective of the cause, mechanism and manner of death.



Tripod of death



raizy

STAGES OF DEATH

- Death occurs in two stages
- somatic, systemic or clinical and
- cellular or molecular.

The term death as commonly employed means somatic death.

• After somatic death, tissues and cells survive for a varying period depending upon their oxygen requirements. • When these individual tissues and cells die, it is termed cellular or molecular death. It occurs piecemeal.

- Brain tissue is most vulnerable to anoxia and dies first followed by death of other tissues.
- Biologically the process of death of various organs is spread over a period of time.
- The previous concept that the process of death occurs at a definite moment holds true only as far as systemic death is concerned.

TISSUE

- Nervous tissue
- Muscular tissue
- Cornea
- Skin
- liver
- Kidney
- Heart

VIABILITY PERIOD AFTER DEATH

few minutes

6 hours

6 hours

12 hours

15 min

45 min

upto 01 hour

 Molecular death is accompanied by cooling of the body and • changes in the eye, skin and muscles • it is generally complete within three to four hours of somatic death. • Diagnosis of somatic or clinical death is not always easy in the following conditions

- soon after death when the body is likely to be warm
- suspended animation
- coma following excessive doses of sedatives or hypnotics especially barbiturates

MEDICOLEGAL IMPORTANCE OF STAGES OF DEATH

• The distinction between somatic and molecular death is important for two reasons

- Disposal of the body and
- Transplantation.

• DISPOSAL OF THE BODY: in the rare instances when the body is disposed off soon after somatic death, spontaneous movements of the hands and feet may occur. This may give rise to doubt that the person was not actually dead but was prematurely disposed off.

- TRANSPLANTATION: the viability of transplantable organs falls sharply after somatic death. A liver must be taken within 15 minutes a kidney within 45 minutes and a heart within an hour.
- A person whose brain may have been injured irreversibly can now be kept alive by maintaining circulation of oxygenated blood to the brain stem by artificial means.
- Such a patient, after appropriate brain stem reflex testing can be declared dead legally, and organs required for transplantation can be removed.

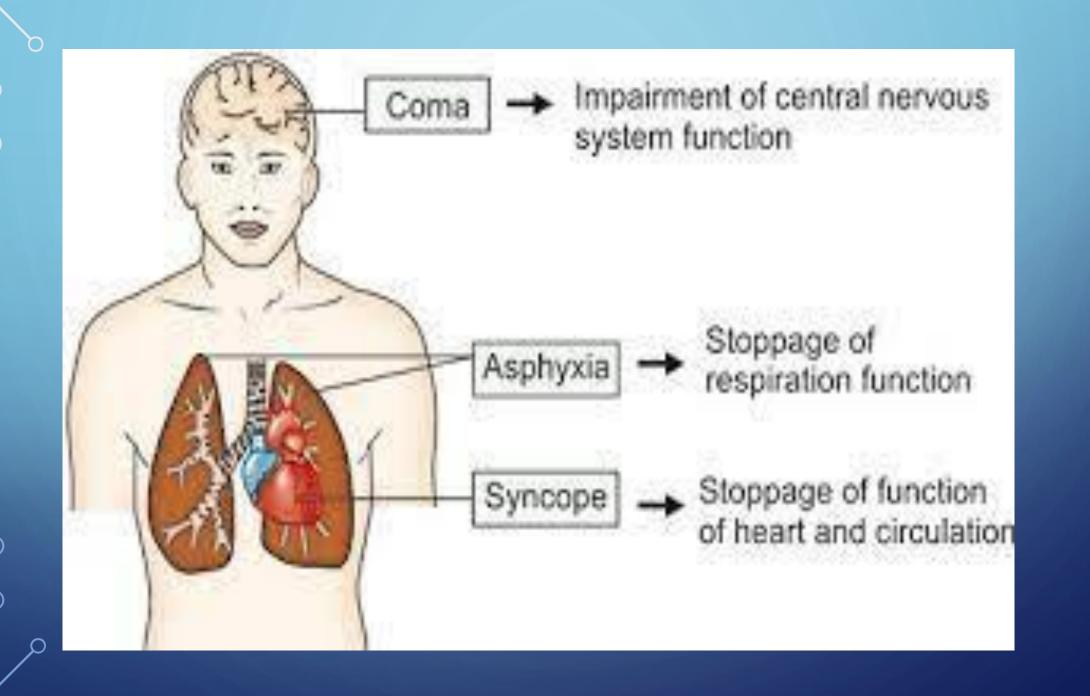
MODES OF DEATH

• MODE: stoppage or failure of vital system

Asphyxia stoppage of function of the lungs

Syncope stoppage of function of the heart

Coma stoppage of function of the brain



COMA

failure of function of brain and irreversible damage to its vital centers

- CAUSES:
- Raised Intracranial Pressure, due to injuries to or diseases of brain and meninges
- Poisons such as opioids and alcohol 3.
- Metabolic disorders like Uremia
- **POST MORTEM FINDINGS**:- edema and congestion of brain and membranes

SYNCOPE

- Death due to failure of function of heart resulting in decrease flow of blood to brain and leading to hypoxia of brain.
- CAUSES:
- Heart diseases
- Diseases of blood
- Hemorrhage
- Poisoning due to digitalis, aconite, potassium.
- **POSTMORTEM FINDINGS:** Viscera appear pale and capillariesappear congested.

A syncopal type of death may result from reflex cardiac inhibition due to
Vagal stimulation
Ventricular fibrillation due to cardiac problems or spontaneous sympathetic discharge.

• POSTMORTEM FINDINGS: non specific

ASPHYXIA

Death due to failure of respiratory system.

- CAUSES
- Lung diseases e.g pneumonia
 Paralysis of respiratory centers as in Opioid poisoning
- Breathing of irrespirable gases
- Traumatic asphyxia
- **POSTMORTEM FINDINGS:-** Cyanosis, petechial hemorrhages, visceral congestion, pronounced lividity and sometimes cardiac dilatation, injury mark on neck.

Gazak-Allah khairan (MAY ALLAH REWARD YOU WELL)