

Unit 4 – The Natural Environment and Species Survival

FORENSIC SCIENCE

What can be used to estimate time of death?

- Rigor mortis
- Body temperature
- State of decomposition
- Entomological evidence

What is the natural human core body temperature range?

-36.2C to 37.6C

What graphical shape does the cooling of the body follow?

-Sigmoid curve

What factors can affect post-mortem cooling?

- Body size
- Body position
- Clothing
- Air movement
- Humidity
- Temperature of surroundings
- Immersion in water will cool the body much more rapidly

RIGOR MORTIS

What sequences of events occur during rigor mortis?

- The muscle cells become starved of oxygen causing oxygen-dependent reactions to stop.

How does this change respiration in the cells?

- It changes to anaerobic respiration and produces lactic acid.

How does this affect the pH of the cells and what is inhibited?

- The pH of the cells falls
- Enzymes are inhibited therefore inhibiting anaerobic respiration.

What happens to the ATP production?

- It is no longer produced meaning that muscle contraction is no longer possible.

How do the muscles become fixed?

- The bonds between the muscle proteins become fixed.

How do the proteins become fixed?

- They can no longer move over one another to shorten the muscle.
- Therefore fixing the muscles and joints.