

CELL SWELLING



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By
Ms. RUPALI RUPASMITA ROUT
ASSISTANT PROFESSOR

CELL SWELLING

Cell swelling, also known as cellular edema, occurs when cells take in more water than they can effectively handle. This can lead to an increase in cell volume and can cause the cells to become damaged or even die.

CAUSES: There are several causes of cell swelling, including:

Osmotic imbalance: This occurs when there is an imbalance in the concentration of solutes between the intracellular fluid and extracellular fluid. For example, if the concentration of solutes outside the cell is higher than inside the cell, water will flow into the cell, causing it to swell.

Hypoxia: This refers to a lack of oxygen reaching the cells. In hypoxic conditions, cells may take in more water as a way to compensate for the lack of oxygen. This can lead to cell swelling and eventually cell death.

Toxin exposure: Exposure to certain toxic substances, such as alcohol, can cause cell swelling. Alcohol, for example, can interfere with the normal functioning of cells and lead to the accumulation of fluids inside the cells.

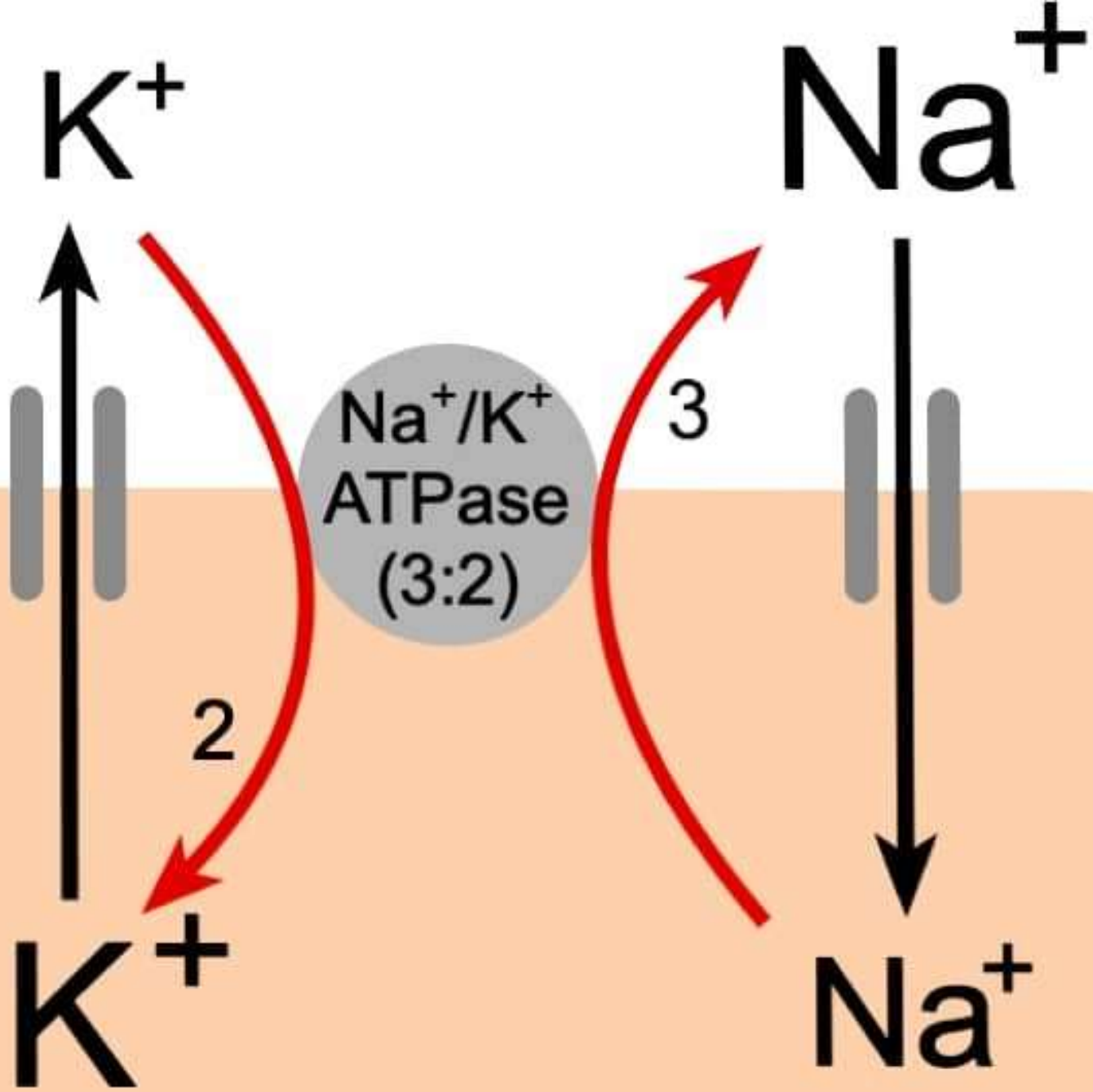
Infection: Infection by certain bacteria, viruses, or parasites can cause cells to swell. This is often due to the presence of toxins produced by the infecting organism that damage the cells and lead to fluid accumulation.

Trauma: Physical injury or trauma can cause cells to swell as a result of inflammation and fluid accumulation. This is a normal part of the healing process, but if the swelling becomes excessive, it can cause further damage to the cells.

PATHOGENESIS:

- Normally, the Na⁺ K⁺ ATPase pump allows potassium into the cell and sodium out.

- Na^+ K^+ ATPase does not function properly as a result sodium ion accumulation occurs inside the cell,
- It causes rising of water level with in the cell.
- It also causes a drop in the potassium ion level within the cell.
- Then cell swelling occurs.



Cardiac Cell

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