


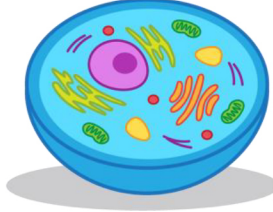
## TOPIC: ERYTHROCYTES

### Structure of Erythrocytes



◆ **Erythrocytes (Red Blood Cells/RBCs):** small, *biconcave-shaped* cells that \_\_\_\_\_ nucleus & many organelles.

- ▶ Biconcave shape: \_\_\_\_\_ the RBC's flexibility & surface area to volume ratio.
- ▶ Meshwork of cytoplasmic proteins, including \_\_\_\_\_, helps maintain RBC's shape.
- ▶ RBCs are packed with *hemoglobin* (\_\_\_\_), a protein that functions in gas transport.

ERYTHROCYTES	MOST OTHER BODY CELLS
	
<i>Smaller</i> in size (~7.5 $\mu\text{m}$ )	<i>Larger</i> in size (~25 $\mu\text{m}$ )
<i>Biconcave</i> shape	<b>Not</b> biconcave-shaped
_____ a nucleus & organelles	Contain a nucleus & organelles
Coated with flexible proteins ( <i>spectrin</i> )	<b>Not</b> coated with flexible proteins ( <i>spectrin</i> )
Packed with <i>Hemoglobin</i> (Hb)	<b>Not</b> packed with Hemoglobin (Hb)

### EXAMPLE

Which of the following statements about erythrocytes is false?

- a) They use mitochondria to make their own ATP.
- b) They are smaller than the average body cell.
- c) Their shape is flexible.
- d) They don't have a nucleus.

### PRACTICE

What is the primary function of the protein spectrin in erythrocytes?

- a) To allow efficient gas exchange of oxygen and carbon dioxide into and out of erythrocytes.
- b) To maintain the shape of erythrocytes and allow them to change shape when needed.
- c) To make ATP, as there are no mitochondria in erythrocytes.
- d) To hold hemoglobin molecules in place.