



## Geometry Has a New Shape: Scutoid

Recently, scientists discovered a new shape called “Scutoid” after studying the human epithelial cells.

- The scutoid looks like a twisted prism which has five sides on one end and six on the other and a triangular surface on one of its longer edges. It is the form that a group of cells in the body takes in order to pack tightly and efficiently into the curves of organs.
- The scientists named the shape "scutoid" after a triangle-shaped part of a beetle's thorax called the scutellum.
- They used microscopy and computer imaging to identify this shape.
- Till now, the epithelial cells were believed to be columnar or bottle-like shaped.

### Epithelial Cells

- Epithelial cells are the safety shields of the body. They are one of the four kinds of tissue that forms human body. The four basic types of tissues are: epithelial, connective, muscular, and nervous tissue.
- They line most surfaces in an animal's body, including the skin, other organs and blood vessels.
- They are a barrier between the inside and outside of the body and are often the first place that is attacked by viruses.
- Epithelial cells are specialized for absorption, secretion or to act as a barrier. Eg.-
- Epithelial cells secrete hormones into blood vessels, absorbs and transports nutrients from the foods and process it for energy.

### Significance

- This will encourage more efficient kind of cell packing, accurately mimicking nature's way to efficiently develop tissues.
- It is significant for the understanding of epithelial organs.
- This study opens the door to understanding how organs are formed during their development and what might be missing in some diseases in which this process is altered.
- Apart from biology, this is will have wide ranging applications in mathematics and other related fields.