

barrier than doesn't hinder gas exchange whereas the embedded proteins allow controlled nutrient uptake.

The rate limit is affected by the surface area to volume ratio. A large ratio would be inefficient as it would take a long period of time for the necessary material to reach the centre of the cell. As a result, cells tend to have a very small ratio. However, a large surface area allows faster exchange of a greater volume of material; so many cells have projections called microvilli. This increases the surface area tenfold without having a large effect on the cell's volume.

There is a limit on the amount of surface area a cell can have. The surface area must be large enough to maintain a sufficient nutrient influx but if the volume starts increasing too much, the efficiency of a large surface area falls and so does the nutrient influx.

Preview from Notesale.co.uk
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