Water Balloons and Cell Surface Area to Volume Ratio

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| “Cell” size | Surface area (cm2) | Volume (mL) | SA to Vol ratio |
| Small |  |  |  |
| Medium |  |  |  |
| Large |  |  |  |

Conclusion:

As a cell gets larger, the amount of surface area (cell membrane) gets smaller **compared to** the amount of volume (cytoplasm and organelles).

Nutrients and wastes will not be able to cross the cell membrane fast enough and diffuse to the centre of the cell volume.

Solutions:

1. Fold the cell (use water balloon and latex glove water balloon comparison)
2. Divide the cell into 2 smaller cells

Segue into mitosis