

Good report on diffusion through the cell membrane

[Environment](#), [Water](#)



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The solution A contained polysaccharides and monosaccharide at the beginning of the experiment. At the end of the experiment, the cell contained the same contents, both monosaccharide and polysaccharides. However, the cell was rigid due to movement of water molecules from the solution in the beaker through the cell membrane of the dialysis tube to the solution inside the cell.

At the beginning of the experiment the solution in the beaker was yellow in color (This signified the presence of iodine). On the other hand, the cell content was clear. However, at the end of the experiment the contents in the cell turned purple in color. Iodine is used to test presence of starch upon color change from yellow to purple. The apparent change in color signifies diffusion of iodine to the hypertonic solution contained in the cell.

The solution in the beaker was hypotonic as compared to the solution in the cell. This is because the iodine molecules moved from the hypotonic solution in the beaker across the semi-permeable membrane of the dialysis tubing to the content of the cell. This is confirmed by the orange-brown color of the cell solution which was previously a clear concoction. This indicates that the contents of the cell had large particles that could not move through the cell membrane. As such, the orange-brown color is a confirmation of the presence of polysaccharides that cannot be moved through the cell membrane.

Yes, the cells isolated from the body would swell up like it happened with the model cell. This is because, the cytoplasm in the body cells contains glucose, sodium and other particles which would render the cell hypertonic compared to the solution in the beaker. Movement of water molecules would thus occur

from the region of higher concentration in the beaker to the region of lower concentration in the cell across the cell membrane.

However, the cells in the body do not swell up to a point of 'lysing' any time you drink water. This is because; the movement of water molecules will be controlled by the concentration of water inside and outside the cell. There is thus a balance that ensures that the cell does not lose much water and at the same time, does not gain excessive amount of water.

The relative concentration of water inside and outside the body cells is at equilibrium. As such diffusion will only take place when this equilibrium is lost. Thus, the cell membranes will only allow water into or out of the cell depending on this equilibrium.

Glucose and iodine would be the readily absorbed substances in the intestines. Starch would not be absorbed and would require further digestion to break the constituent polysaccharides into smaller molecules that can permeate through the cell membrane. Monosaccharide such as glucose and the small molecules of iodine will be readily absorbed as they can permeate easily through the cell membrane.