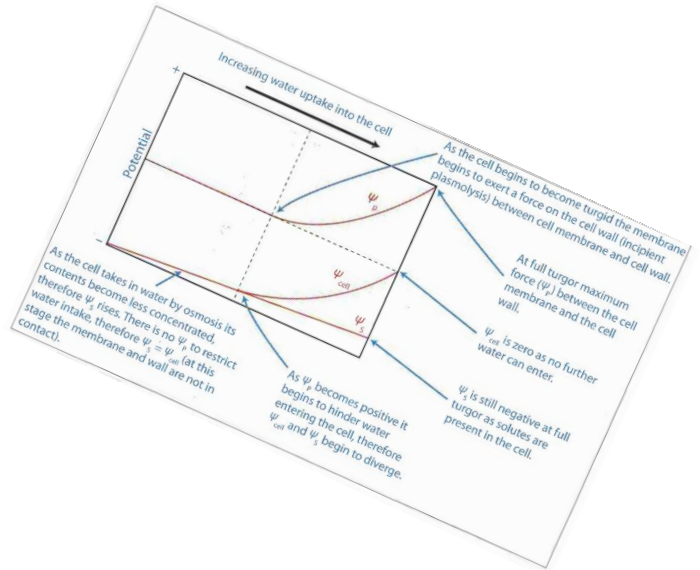


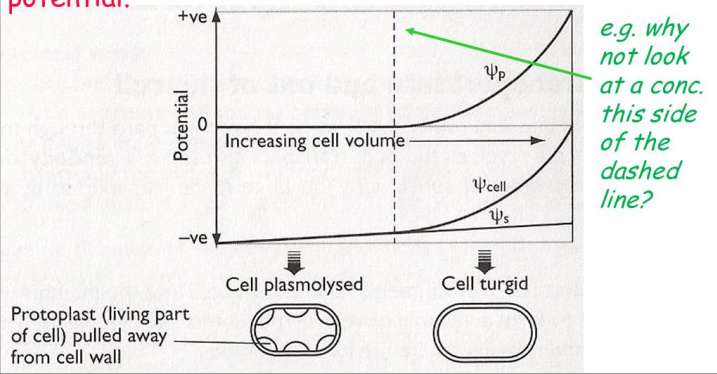
# DIFFICULT THINKERS... (use your water potential graph to help you)

When estimating water potential of a plant cell...



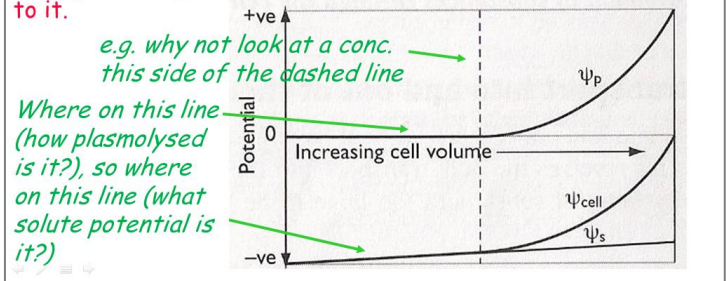
Why can't we just look at turgid cells at a particular conc. to estimate the water potential?

They have a pressure potential value, which is hard to estimate, and therefore it is hard to calculate water potential.



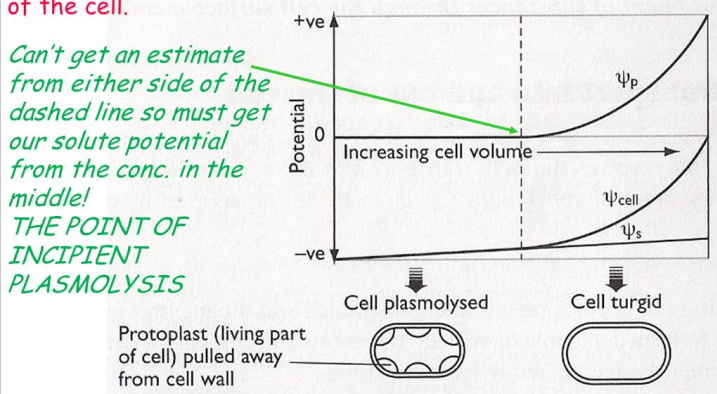
Why can't we just look at plasmolysed cells at a particular conc. to estimate the water potential?

Once a cell is plasmolysed, yes the pressure potential is zero, but the solute potential continues to be affected by the external solution. Therefore, if you look at a plasmolysed cell, you have no way of knowing how "plasmolysed" it is i.e. where on the solute potential line that cell is found. Even though it is in a specific sugar concentration, not all cells will be isotonic to it.



Why look at the point of incipient plasmolysis?

At this point the pressure potential has just become zero so we are sure that the plant cell has just become plasmolysed. Therefore the solute potential is equal to the water potential of the cell.



Can the water potential of the cell ever be 0 but not be pure water?

Yes. In a turgid cell, the water potential will be zero even though there is solute in the solution of the cell. Remember that water potential is the TENDENCY of water to enter the cell - at full turgor, it will tend not to enter because of the high pressure pushing back from the cell wall and stopping any more water from entering.

Remember that solute potential is the POTENTIAL of water to enter; yes, it has the potential to enter because of the solutes but it will tend not to because of the high pressure potential.

