

## # Physical Principle

When ice is applied to the skin heat is conducted from skin to ice in order to melt it.

To change its state, the ice requires considerable amount of energy (latent heat of fusion), to raise the temperature of 1 gm of ice at  $0^{\circ}\text{C}$  to 1 gm of water at  $37^{\circ}\text{C}$  requires 491 J whereas, to raise 1 gm of water at  $0^{\circ}\text{C}$  to  $37^{\circ}\text{C}$  requires 115 J.

So, when trying to cool the tissues it is important to use ice during the treatment and not just cold water.