

Effects of ultrasound inflammation and repair process :-

Acute stage : The effect of stable cavitation and acoustic streaming appears to increase calcium ion diffusion across the cell membrane. This is of great importance since calcium as a second cellular messenger can have a great effect in increasing

the production and release of wound healing factor.

Proliferative (Granulation stage): This begins approximately three days after injury and is the stage at which connective tissue framework is laid down by fibroblast for the new blood vessel.

Ultrasound is of great help at this stage as it stimulates fibroblast to produce more collagen.

Ultrasound treatment during first two weeks after injury accelerates bony union but if given to an unstable fracture during the stage of cartilage formation it delays the bony union.

Remodelling stage: This stage can last months to year until the new tissue is as near as (in structure) as possible to the original tissue.

At this stage ultrasound improves extensibility of mature collagen as in case of scar tissue.

This occurs by promoting the reorientation of fibres. The beneficial changes appear to occur more when treatment is started in inflammatory stage.