

Effects of exercise on **Musculo-Skeletal System**

1. **On Muscles-** During exercise, the weight or stress given to the muscle create resistance. Contraction of muscle against which resistance increases the synthesis of muscle protein which enable the muscle to increase in size. Continuous exercise coupled with weight bearing activities causes hypertrophy of the muscles leading to more solid contractions resulting in greater muscle strength.
2. **On bones-** During exercise, continuous physical stress stimulates osteoblastic deposition and calcification of the bones. Osteoblast are cells responsible for formation of bones while calcification is the process where there is build up of calcium salts causing the bones to harden so inducing physical stress to the exercise helps in developing stronger bone tissue.

3. On Ligaments- Ligaments are strong bonds of connective tissues that attach bones to bones. They are made up of collagen fibres that give them their strength. They usually encapsulate the joint to provide additional strength and stability to joint movement. Without exercise, the ligaments can loosen up, exercise can help in to maintain their power and durability

4. On Tendons- Tendons form the ends of muscles which hold the muscle to the bone. The fibres of the tendons are long and are very strong that they can transmit immense forces without damaging themselves. Exercise can increase their strength and prevent them from becoming physically injured.

5. On Cartilage- Cartilage is semi smooth tissue that forms a covering at the ends of the bones. It provides support by protecting the bones against weight bearing activities. Cartilage should be engaged with joint movement and weight bearing exercises to remain healthy. Such exercises keep the cartilage from becoming thin and damaged which can make them vulnerable to injury or degenerative joint diseases.

6. On Joints- Joints hold the bones together while allowing movement between them. The Degree of joint movement is called range of motion. Exercises for the joint include ROM exercises that develop the extent of joint movement without feeling any discomfort.