

STRETCHING AND FLEXIBILITY

Flexibility has been defined as the range of motion possible about a single joint or through a series of articulations. The maintenance of full non-restricted range of motion has long been recognized as essential for successful physical performance and injury prevention. The goal of any effective flexibility program should be to improve the range of motion at a given joint by increasing the extensibility of the musculotendinous units that produce joint movement. A number of factors may limit the ability of a joint to move through a full, unrestricted range of motion.

BONY STRUCTURE

May restrict the endpoint in the range. However, in many instances we rely on bony prominences to stop movements at normal endpoints in the range.

FAT

May also limit the ability to move through a full range of motion. The fat may act as a wedge between two lever arms, restricting movement.

SKIN

Might also be responsible for limiting movement (i.e. some type of injury or surgery involving an incision or laceration of the skin, particularly over a joint, will gae inelastic tissue formed at that site).

CONNECTIVE TISSUE

Ligaments and joint capsules do have some elasticity, however, if a joint is immobilized for a period of time, these structures tend to lose some elasticity and actually shorten, this condition is most common after surgical repair of an unstable joint or long period of inactivity.

MUSCLE AND TENDONS

Along with their surrounding fascial sheaths, are most often responsible for limiting range of motion. When performing stretching exercise for the purpose of improving flexibility about a particular joint, you are attempting to take advantage of the elastic properties of muscle. Over time, it is possible to increase the elasticity, or length that a given muscle can be stretched.

With the exception of bony structures, all the factors that limit flexibility may be altered to increase range of joint motion. This may be accomplished using the two types of flexibility: static and dynamic. Static flexibility, important for injury prevention, refers to the degree which a joint is passively (without contraction) moved to the endpoints in the range of motion. There are many sport situations in which a muscle is stretched beyond its normal active limits. If the muscle does

not have enough elasticity to compensate for this additional stretch, it is likely that the musculotendinous unit will be injured. Dynamic flexibility is important in athletic performance. It refers to the degree to which a joint can be moved by a muscular contraction, usually through the midrange of movement. Dynamic flexibility is essential in sport activities that an extremity be capable of moving through a non-restricted range of motion.