

## **To be S t r e t c h e d or not to be stretched?**

**A stretching program, in conjunction with a warm-up, has long been an accepted method of preparing persons musculoskeletal system for physical activity. Stretching is often prescribed for rehabilitation, injury-prevention, imbalance-correction, and to improve athletic performance. Yet despite its' popularity and prevalence, there is limited scientific knowledge regarding the mechanisms and effects of stretching, on flexibility in general from most 'fitness professionals' in the typical gym or fitness center. I will help clarify some of information.**

**Flexibility is considered to be one of the key functional elements for complicated coordinated movement. The skeletal muscles are primarily required for the generation, and recuperation of pain free movement energy. The neuromusculoskeletal system's integrity is associated with the length, stiffness and adaptability of each individual muscle in the human body. Imbalances in any of these areas may lead to other muscles becoming involved in movements to a greater or lesser extent than would normally be required, leading to muscular imbalances, pain, or even injury.**

**So think of our chair born society. We get up in our box beds, get in our boxcars, sit at our box desks, and then eat our boxed lunch. We use our computer for hours on end, sitting in poor posture. This position (forward head, forward flexed, rounded back, rounded shoulders) SIT UP STRAIGHT! leads to muscular imbalances. These imbalances lead to faulty joint and muscle movements. Our system is not working efficiently, and muscles responsible for stability or strength are performing tasks out of their "normal" role. Flexibility is an integral part of any fitness program and is essential in the pursuit of optimal human performance, as well as injury prevention and rehabilitation." The suggested reasoning for this is that adequate flexibility permits the required joint range of motion (ROM) during activity; in addition to injury prevention should a limb be subjected to greater than normal range. (Turning, bending, taking groceries out off your trunk and placing them on the ground) By comparison, limited flexibility may lead to muscular or joint compensations (as referred to above), direct injury within the musculotendinous (muscle & tendons) unit and always leads to pain. A loss of extensibility in soft tissues (muscle) may lead to restricted range of motion of a joint.**

**This loss of extensibility may be the result of either micro trauma or simply inadequate flexibility. Stretching correctly is therefore recommended, to competitive, recreational, and above all sedentary individuals as a means of increasing muscle extensibility and joint range of motion. Stretching exercises can be self-administered or applied manually by Professional Trainers. If someone has an area of tightness within a muscle, or a muscular imbalance, then they have an increased susceptibility to exercise-induced injury. Stretching could be effectively used to release the tightness in the muscle and return any comparatively shortened muscles to a near normal length. It would not be appropriate to begin exercise immediately following a stretching session, as the body's proprioception will have been affected. I recommend as example to include a walking and light jogging period on level ground prior to a running session. For an exercise session with weights, I recommend exercising with light hand weights in all planes of motion to warm up the system and decrease chances of joint or muscle injuries. Associated with the effectiveness of a flexibility training intervention, the underlying mechanisms and physiology are poorly understood. The exercise professional and scientist alike must surely find it an arduous task to make recommendations for improving flexibility, if they do not understand how flexibility is actually improved. So what can be taken from this article and the scientific literature in general?**

**Well, it can be said that there are a number of reasons for improving flexibility. The first step for the weekend warrior, the office worker, or anyone involved in a fitness regimen is to start considering flexibility training in a similar manner to how other resistance and cardiovascular training is considered. To improve flexibility around a particular joint, will help balance the body, and alleviate muscular tightness. This muscular tightness if not alleviated (stiffness) can, and will lead to a many orthopedic and muscular concerns.**

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