

# STRETCHING THE FACTS: PART I

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Stretching has long been considered an integral part of most any fitness or performance training program. From competitive athletes to senior adults, everyone is generally encouraged to stretch to improve “flexibility” as a means to move and perform better. However, this universally accepted practice has come under question in recent years and has thus far failed to be able to provide solid research that supports the notion that stretching provides any long term increase in performance or has any benefit for injury reduction. In fact several studies and experts have suggested that many stretching methods and techniques often taught are not just ineffective, but can actually be detrimental to joint function and promote increased risk of injury.

Now before we all panic and stop performing or teaching any form of stretching we must first gather the facts, analyze the research, and look closer at anatomical design, joint structure, muscle physiology, and the neurological factors associated with stretching. To immediately say “stretching is bad” shows just as much ignorance of the topic and demonstrates the same dogmatic tendencies to stereotype all exercise modalities as it would be to continue to hold to the traditional belief that “stretching is good”. In truth, as with any form of exercise, we can not simply classify stretching as good or bad. After deeper analysis we find that certain types of stretching provide a higher risk of injury and offer less probability of benefits than others. This is particularly true when we compare methods of “passive” stretching versus those of “active” stretching which we will discuss more in part 2 of this series and after first reviewing what the current research is showing.

Recent studies aimed at determining the benefit of pre-event stretching have shown little if any promise for either enhancing performance or decreasing risk of injury. Behm's 1. studies' showed that stretching provided almost no measurable lasting change in range of motion. In fact most all subjects showed range of motion return to pre-stretching levels after just five minutes following any of the prescribed protocols. Conversely, they did however demonstrate a significant reduction in muscle force output for almost every individual tested for at least 20 minutes following the stretching. A few individuals continued to show dampened force output for several hours following the stretching. Such findings were also reported in Fowle's 2. studies as well as those done by Taylor and Associates 3. Such research suggests that if pre-event stretching does not offer increased range of motion and also reduces muscle force output, that it is not a good recipe for either enhancing performance or preventing injury.

Studies done by Kokkonen 4. also confirmed loss of muscle force production associated with stretching and also discovered that the prescribed pre-event stretching routines also negatively affected muscle-endurance as well. This new knowledge makes traditional pre-event stretching practices not only ill-advised for strength and power type athletes, but also for endurance athletes as well. Rosenbaum and Henning 5. confirmed such findings through their well documented and peer reviewed EMG studies. They also did

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routines which utilized movement patterns that closely mimicked the sport specific movements they were about to perform. Their findings showed actual increases in force output and also demonstrated measurable improvement in both passive and active range of motion following the designed warm-up routines. Such studies suggest a huge advantage for completely dumping pre-event stretching in lieu of adding more specific pre-event warm-up movements for improving performance and decreasing risk of injury. A recent study by Sheir 6. which analyzed 138 of the most credible and recent published researches pertaining to stretching also provides some alarming news. Following completion of his research, Sheir concluded that there was no proof of measurable performance enhancement associated with pre-event stretching and that a staggering 8-out-of-12 of these researches suggested there to be a possible higher risk of injury for those who engaged in any of these stretching protocols.

Several of these authors and other experts have concluded that stretching, particularly of a passive nature, should be performed only post-exercise as perhaps part of a cool-down protocol to help with relaxation of the muscles and to provide for an overall calming effect or stress release for the individual. Such placement of stretching would then have a beneficial affect and have less chance of risk even if there was no actual lasting benefit from stretching. It is also important to know that all of the afore mentioned researches utilized primarily “passive-stretching” techniques and lacked comparisons of the effects that might be experienced with “active-stretching”. A more in-depth description and comparison of these two general types as well as hybrid techniques of stretching will be discussed in the next article.

The facts are that we must learn not to over generalize risk or benefit associated with any exercise modality such as stretching. Rather we should be asking “WHY” we are stretching in the first place. Is the goal to attempt to create physiological change and improve tissue “flexibility”? Or is the real goal aimed towards enhancing joint “mobility” and increasing joint function? These are related yet different goals and both will likely take more than stretching to accomplish. We must also consider “WHAT” are the factors that may have altered tissue “flexibility” or limited joint “mobility”? Many of these factors will not be corrected by stretching and need to be identified prior to planning any exercise or treatment plan.

Therefore, until we clearly know the WHYS and understand the WHATs we should be conservative with any prescriptions pertaining to stretching and hesitate before aggressively attacking the body with certain methods as we should with any fitness modality or therapy. A comprehensive assessment should be completed in order to not only identify flexibility and range of motion deficits, but rather to create an entire blueprint of all individual joint function as well as determine postural deviations and general movement pattern compensations. Only then can we make informed decisions and develop more complete fitness and treatment programs to address all factors that may be impeding movement and hampering performance. You may wish to try the TELOS A.I.M. (Advanced Integrated Movement) Assessment that provides this type of information so you can discover your own personal strengths as well as the weaknesses and limitations that rob you of optimal performance.

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