

# STRETCHING THE FACTS: PART II

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Historically, stretching has long been as much of a corner stone of any fitness, Golf or sports performance training program as strength training and cardiovascular conditioning. However, as presented in the last article in this series, recent research has shown little support for providing actual measurable performance benefits associated with stretching. Some of the research also presented insinuated that stretching may actually contribute to increased risk of muscle injury and potentially may promote joint instability and joint degeneration. However, it was also pointed out that most all of this research were directed towards traditional “passive stretching” and did not typically even research the possible benefits and risks associated with other forms of stretching.

There are several different types and subtypes of stretching and numerous techniques touted for their uniqueness or effectiveness. However, all of these can be described as either “passive” or “active” stretching or some type of combination. Passive stretching simply means that the muscles targeted for lengthening are forced to do so as a result of applying a force or load from an external source. Common examples can be accomplished by simply leaning over and allowing gravity to flex the hips to stretch the hamstrings. You can also choose to lie on your back and use the arms to pull the leg towards the head or have someone else provide a similar passive stretch for the hamstrings. A contrasting example of an “Active” stretch would be to simply stand and use the hip flexors themselves to lengthen and stretch the opposing hamstrings of the same leg. These two basic types are pictured in the diagram below to better demonstrate the differences. Either type can done for virtually most every muscle of the body/.

Perhaps the answer to why passive stretching has failed to provide hard data for improvements in performance or deliver measurable changes in joint range-of-motion (ROM) is due to a lack of understanding of why there is a lack of ROM in the first place. ROM limitations are most often assumed to be correlated to a muscle’s degree of “flexibility” or “extensibility” which are the most common words used to describe the muscle’s “elasticity”. Elasticity relates to a muscle’s ability to stretch to “maximal length” easily and then return to normal “resting length”. It is also wrongfully assumed that if the muscle’s elasticity is low that simply passively forcing it to lengthen often enough through regular stretching would correct that. We must consider that muscles do not arbitrarily lose their inherent elasticity for no reason or decide independently to become tight and change their physiology without good cause and consent of the entire neuro-muscular system. Reduced elasticity can be a result of a traumatic injury, chronic stress, repetitive misuse, or compensation for a functional muscle imbalances or related muscle weakness.

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The fact is that when a muscle first begins to exhibit stiffness, it is due more to neurological control than changes in physiological makeup. Muscles are purposefully recruited to create motion just as often as they are called to decelerate motion. Therefore it is just as plausible that any ROM limitation may be initially due to muscle weakness as opposed to muscle tightness. When a muscle for any reason begins to fail at producing enough force to create and stabilize optimal ROM, opposing muscles are recruited to protect the joint from moving into a position of weakness and resultantly become “tight”. This means that specific treatment and strengthening of the weak muscles will be the key for regaining optimal ROM. In this common scenario it also becomes clear why passive stretching alone would not correct the developed muscular imbalance or restore ROM and why utilizing an “active” type of stretching would be more appropriate. Active stretching requires voluntary work from the weak agonist muscles to perform the movement that would also lengthen the tight antagonist muscles.

However, regardless of the original cause there are always muscular imbalances and resultant muscular tightness associated with limited ROM. Therefore there is still a potential benefit to perform both active and some controlled passive stretching or use of combined techniques to help resolve the imbalances and improve ROM. The obvious conclusion from the facts presented is that any specific techniques of stretching need to be combined with properly selected strengthening exercises in order to be the most effective. As discussed in a previous article in this series specialized tissue treatments designed to release adhesions, breakup scar tissue or re-activate weak muscles will also most likely be needed for maximizing ROM and achieving optimal performance. This comprehensive approach has shown great results when all elements are combined effectively and not only improves movement and enhances overall performance, but also greatly reduces the incidence of future injury. We invite you to come experience TELOS Fitness Center’s comprehensive system of assessment, treatment and training we have termed Ortho-Kinetics<sup>®</sup>. You can start simply by calling our Member Experience representatives at 972-386-2580 and schedule your A.I.M. (Advanced Integrated Movement) Assessment.

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