Stretching the truth

We all know we should stretch as part of a warm-up, right? Have you ever stopped to wonder *how* we know this is such an important part of preparation for exercise?

There are a number of "facts" that are shared just because we have heard them so often. Unfortunately, the frequency of times something is said does not make it fact! Anecdotal evidence that has cascaded from one generation to the next is nothing more than hearsay; a subjective interpretation, possibly trying to vocalise something that is unseen, which helps the human body cope better (the brain likes logic and order).

This article is not about imposing my views on stretching; in fact throughout my sporting life I have been religious in my warm-up routines and they have always included stretching. The key for us is to be open-minded and to accept what we thought the benefits of stretching are, actually have yet to be proved!

So why do we stretch?

When we are young, with most children's experience of exercise coming through school lessons, it will be because of blind obedience; we do because we are told to. There is also the influence of TV and social media, where stretching being a good thing to do is inferred by top professionals in all sports.

Some people stretch as part of a daily routine. It helps them transition into the day, they feel more able to be productive at work. In this instance stretching is part of a holistic approach- not completed because of any specific sporting or physiological expectations that are directly related to the act of stretching.

Nuzzo (2020) stated the following:

> *Flexibility has been researched for over 100 years. Its track record is unimpressive, particularly when viewed in light of other components of physical fitness. Flexibility lacks predictive and concurrent validity value with meaningful health outcomes. Consequently it should be retired as a major component of fitness.*

Based on this, there will be editors all around the country updating Examination PE course guides and textbooks!

Other people stretch because it makes them feel better; or they *believe* it is helping them in some way. It is important not to underestimate the power of the mind. The counter-claim here is that rather than just 'stretching' for stretching's sake, it will automatically happen when, for example, a strength training session in the gym requires a limb to be worked through its full range of motion (dynamic stretching v static stretching).

The only seemingly clear and least controversial effect on stretching is that it does seem to increase flexibility. If this is your goal, and you include this type of training regularly, then stretching is likely to work for you! The next question is then, “how many people really **need** more flexibility to perform better or to complete the demands placed on them on a daily basis?”

As with all areas like this one, you could find a number of research papers that could eloquently argue both sides, and therefore personal bias will play a role in which side you share a greater affinity with.

Stretch tolerance may be key to flexibility; the amount an individual’s body will allow a muscle to extend or elongate from its resting position (its potential). The muscle does not actually grow and get longer, but the inter-play with the nervous system allow the brain to calculate the degree of perceived danger and then decide whether it is “happy” to allow the elongation, or whether it is too far out of its comfort zone, in which case the stretch reflex will trigger(2).

For most people, especially when it come down to injuries, the important aspect is not how much flexibility there is, but the control within that flexibility (especially at end range). Although we may normally view muscles as our means of propulsion- overcoming inertia and allowing us to generate movement, there is an equally, if not more important realisation when it comes to preventing injury.

Muscles can only pull and their partners in crime (antagonists) which do the opposite action need to be seen as decelerators of movement. For example, anatomically when the hamstring activates, the leg bends (flexes) at the knee. Functionally, the hamstring needs to decelerate the action of the quadriceps that when activated, straighten (extend) the leg.

If the required strength is not present at those end ranges, and the limb is not being controlled by muscular action, but overpowered by momentum, injury can occur.

As is stated in this article
https://www.painscience.com/articles/stretching.php#sec_%3C##%3E

stretching has a poor effort-reward ratio. Therefore, for the majority of us who squeeze fitness into a busy working day, it is not worth the time! As long as a warm up begins slowly and incrementally builds in intensity as you start your session, injury risk will be minimised. Remember jogging on a treadmill or using a rower as part of a warm up has us flexing and extending our legs for example through the movements being made. By definition, there is stretching happening!

References:

1 Nuzzo JL. The Case for Retiring Flexibility as a Major Component of Physical Fitness. *Sports Med*. 2020 May;50(5):853–870. PubMed #31845202

2 Blazevich AJ, Cannavan D, Waugh CM, *et al*. Range of motion, neuromechanical, and architectural adaptations to plantar flexor stretch training in humans. J Appl Physiol (1985). 2014 Sep;117(5):452–62. PubMed #24947023