

DELVING DEEP INTO THE ANATOMY OF THIS OFTEN-MISUNDERSTOOD TISSUE

FASCINATING FASCIA

In his book, *The Philosophy of Osteopathy*, Andrew Taylor Still, the founder of osteopathy, wrote "By its action (the fascia) we live and by its failure we ... die." This is a rather bold statement, written in 1899, about a bodily structure that has only recently come to mainstream attention. So, what is this connective tissue called fascia he wrote about, and what function or role does it fulfil in our body?

The word fascia comes from Latin and means band or bandage. It is a type of connective tissue, composed mainly of collagen and elastin fibres. It is found everywhere in the body and can take on many different forms. It wraps itself around individual muscle fibres, whole muscles and holds groups of muscles together. It forms tendons and ligaments, and surrounds and supports internal organs, blood vessels and nerves. It also forms the meninges around the brain and spinal cord. It is what gives you your unique posture and allows your body to function holistically by orchestrating the smooth operation of all your body's systems. Fascia also has some unique properties that are relevant to bodybuilders which, if understood correctly, can help sculpt the ultimate physique.

FASCIA'S ROLE IN BODYBUILDING

Fascia serves to provide structures that transmit mechanical tension, whether generated by muscular activities or external forces throughout the body. It also serves to reduce friction between muscles and muscle compartments by providing a sliding and gliding environment for the muscles. In the form of tendons, fascia transmits the forces created when muscles lengthen to the bones. The sacro-tuberous ligament, which attaches the hamstring group onto the sacrum can, for example, take a load of 7000kg. Fascia also forms a protective layer around nerves and blood vessels as they pass through muscles.

Experienced bodybuilders will tell you that it's more important to use correct form than to try and lift heavy weights that your body is just not ready for. This is sound advice because, when

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lifting weights, the heavy compressive forces can tear the thin, sensitive fascia that surrounds each muscle fibre, which creates adhesions. Fascia needs to be free from any restrictions to be able to get rid of toxins from the tissues. This is a vital function that allows cells to take in nutrients for growth and then expel the waste products.

The collagen fibres in fascia also attract and orient water molecules in a very specific way to enable the gliding action of muscle fibres during contractions (known as sliding filament theory). When 'dialling in' for shows athletes will generally drop water as part of their show prep to give them that clean, crisp look. This practice dehydrates the fascia, making it more brittle and doesn't allow for the gliding action required for muscle contraction (think of it as trying to rub two pieces of sandpaper together). This puts a bodybuilder at a higher risk of cramping as the body protectively produces muscle spasms. This is often the case after a long afternoon of posing and being on stage, so rehydrating your body as quickly as possible after a show is of vital importance to restore and maintain the health and function of your fascia.

There are also currently a few training methods being employed amongst bodybuilders that aim to manipulate the fascia, in the hopes of eliciting more growth. Training programmes such as Hany Rambod's FST-7 and Marius Dohne's FSF training are proving to be extremely effective, but not always for the reasons you may think.

The reason these fascial-manipulation techniques have been so successful is that hydration in fascia is encouraged by gently stretching it. Besides nutrient uptake and toxin and waste removal, fascial hydration is important because bound water layers on the collagen fibres provide proton conduction pathways for rapid intercommunication throughout the body, which enables the organism to function as a coherent whole. What this means is that fascia is an important communication system.

Current research suggests it's a communication system quicker than the nervous system. As such vast amounts of sensory information can be exchanged at hyper speed between the body and the brain. This function is helpful in injury prevention. If you are getting under a 10 plate squat or maxing out on a deadlift, the severe tensions in your body can quickly be communicated to the brain, and appropriate preventative action can be taken. It also plays a role in movement and so helps us establish whether correct form is being used when training.

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STRUCTURE OF SKELETAL MUSCLE

FASCIA LAG IMPACTS GAINS

Experienced bodybuilders will tell you that it takes patience and time to build a competitive physique. The reason for this lag effect is that the collagen in fascia has a half life of between 300 to 500 days and, just like bone, fascia will adapt to the mechanical stresses placed on it. Positive stresses such as correct form when lifting weights, when imposed on fascia, will mould the fascia according to the forces. So, although you will start to see and feel results within a few weeks after you start training, a body with decent symmetry and posture should take between a year and 18 months to achieve. This can even be applied to injuries and rehabilitation of the body. So, if you are just starting out on your bodybuilding career, training consistently, having patience and making small amounts of progress are important factors in being a successful bodybuilder.

In a state of health, fluid should be able to flow freely from one fascial compartment in the body to the next. When fascia tears, constricts or is compressed this fluid movement is restricted and hampers our ability to build a competitive physique. So the tried and tested advice of using proper form, drinking plenty of water, resting, and training with patience and determination will help your fascia function optimally. Just add some stretching into the mix and within 18 months you'll be well on your way to creating a body that can stand proudly on stage.

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