

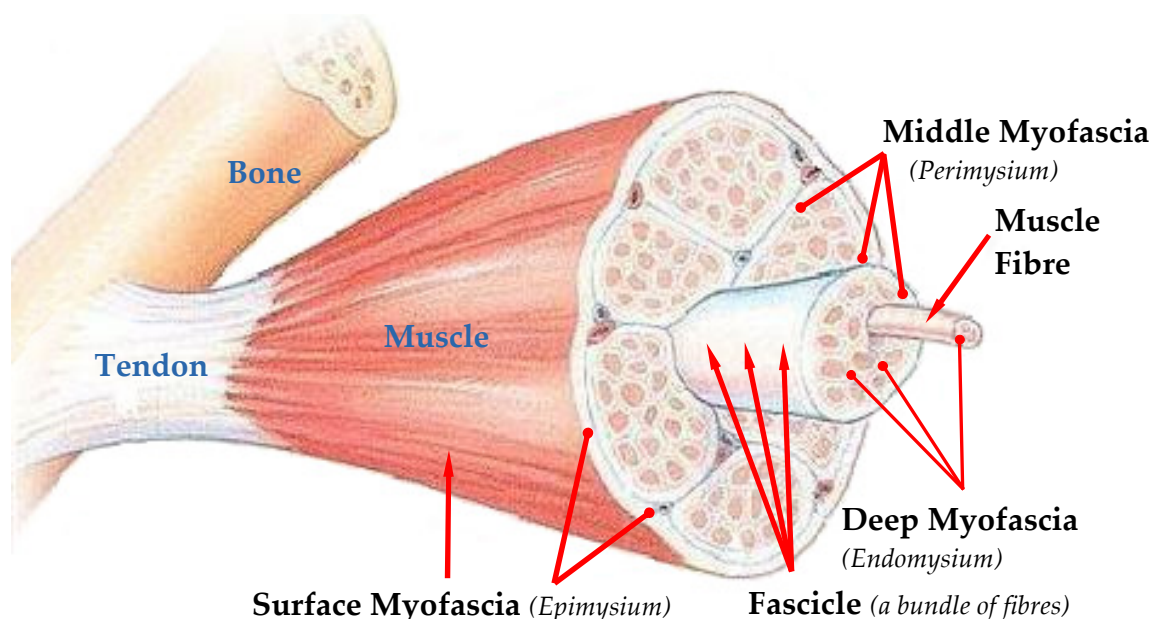
Myofascia & Myofascial Release: What Are They?

The *myofascia* is the fibrous network interweaving & encasing individual muscle fibres, groups of muscle fibres and whole muscles. Normal muscle function requires it to be soft & pliable.

(a) Introduction

The *myofascia* is comprised of three different layers of *connective tissue*, each covering a part of the muscle structure like a *sheath*. See (c) What is Connective Tissue? overleaf. If you have ever cut up stewing meat, you have seen it. It is the flat, white to cream sinew-like material which divides up the muscle. If you separate it from the meat, you will notice it is tough and strong, but with a degree of stretch to it. *Collagen* gives it the strength and *elastin* gives it the stretch.

Structure of Skeletal Muscle and the Fascia Associated With It



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The deepest layer of myofascia covers individual muscle fibres and is called *endomysium*. Bundles of fibres known as *fascicles* are covered by myofascia known as *perimysium*. And bundles of fascicles form recognisable muscles which are covered by the most surface myofascial layer: *epimysium*. *Myofascia* is a collective term referring to any and all three sheaths of connective tissue associated with muscle: the deep endomysium; the perimysium; and the surface epimysium. Finally, all layers of myofascia extend beyond the ends of muscle fibres, muscle fascicles and whole muscles, merging to become what we call *tendons*. See the illustration above.

Some forms of fascia are called *aponeuroses* (singular *aponeurosis*). There is currently debate about whether any distinction should be made between fascia/myofascia and aponeurosis.

(b) What is Myofascial Hardening? What is Myofascial Release and Why Is It Important?

The ability of muscle to function normally may be seriously inhibited or compromised by the gradual onset of *myofascial hardening*. The myofascia loses its flexibility and *elastic resilience* (elasticity). Working muscles fill with blood and expand, and the pressure upon them due to resistance from inflexible and hardened myofascia compromises normal function and causes

damage. In fact the myofascia has become inflexible like the leather casing of a football, rather than as it should be: flexible like the inside bladder of a football. This inflexibility could be due to:

1. Chronically contracted myofascial fibres: “puckered” like your mouth if you suck a lemon.
2. The development of *micro-adhesions* (micro-scarring) from trauma or repeated micro-trauma. These cross-link myofascial fibres, “stiffening” the myofascial “cloth” and reducing its elasticity like cloth in a shirt or blouse stiffens when constantly affected by deodorant.
3. Thickening of the fluid which surrounds the fibres (called *ground substance* (see **(c) What is Connective Tissue?** below). This may inhibit the free movement of the fibres, which become less able to move with the muscle as it contracts.

For muscle function to normalise, myofascial hardening must be reversed.

Your Goltech® therapist has been trained in a quick and efficient method of simultaneously dealing with *both* myofascial contraction or stiffening *and* changes to the texture of the ground substance.

(c) What is Connective Tissue?

Connective Tissue is made up of *living cells* (called *fibroblasts*) which are embedded within, and which produce or manufacture two *non-living* components of the connective tissue; a *solid* portion and a *fluid* portion. The solid portion is comprised of a variety of *fibres* (elastin and various forms of collagen), and the fluid portion is known as *ground substance*.

(d) The Importance of Connective Tissue

The importance of connective tissue is almost universally underestimated.

Most people think of the bony skeleton as the framework of the body. In fact the framework within which the living cells of the body reside (such as liver cells, kidney cells etc) is comprised of *connective tissue*, and the skeleton is actually only one part of that framework: a specialised part designed to provide a frame upon which to hang the muscles so that you can move your body. The bones of the skeleton, like other forms of connective tissue, contain normal connective tissue fibres, but the normally fluid portion, the ground substance, has been replaced by a kind of cement comprised of *calcium hydroxyapatite* (a form of calcium phosphate). That is why calcium is so important to bone health, although it must be said that bone contains other minerals in small amounts including magnesium, boron, silica and others.

(e) Terminology: Connective Tissue, Fascia and Myofascia

The connective-tissue framework of the body is continuous from the top of the head to the tip of the toes. It “connects” the whole body. It surrounds and supports every living cell, provides the environment *into which nutrients are released* by capillaries *and from which the waste products of metabolism are collected* by venules and lymphatic drainage tubules, *and unfortunately in which difficult-to-remove toxins are stored*. Connective tissue interweaves with other tissues of the body: for example nervous tissue, the linings of organs, muscle tissue & fat tissue. It also supports *organs* (e.g. the *liver*) in a similar fashion to the way a melon may be supported & carried by a string-bag.

Tendons, ligaments, cartilage, fascia *and specifically the myofascia* with which your Goltech® therapist *constantly* deals are *all* forms of *connective tissue*.

Fascia is the term used to describe that connective tissue which surrounds, protects and supports blood vessels, nerves & organs, and surrounds, defines and holds in place individual muscles & muscle groups. When associated with muscles, the fascia is correctly known as *myofascia*, although the more general term *fascia* is often used for convenience (even though technically incorrect).

Although usually underestimated, it is actually difficult to overestimate the importance of connective tissue!

Author Paul James Davies