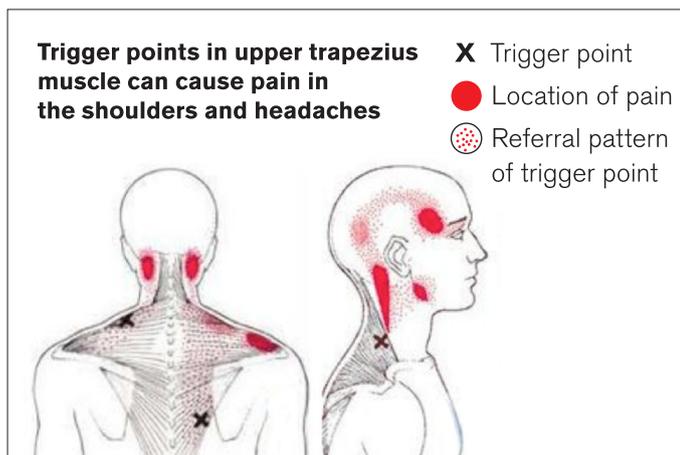


Trigger point pain or painful muscle knots /1

Muscle tissue as a source of pain is often underestimated and missed in diagnosis. Muscles are capable of producing pain even in the absence of obvious trauma causing tears or bruises. The source of pain arises from myofascial trigger points (MTrPs), which are taut bands of muscle fibres irritable or painful to touch. When we press against a tense muscle (for example the upper trapezius over the shoulder), we may discover 'nodules' or 'knots' within the muscle belly that produce sore, achey sensations around or even away from the point of contact.



These MTrPs are very common, yet they are often missed when diagnosis is focused solely on looking at joints, discs, ligaments as potential sources of pain. MTrPs will not show up on imaging (including X-rays, Ultrasound, CT and MRI scans), so they should definitely be considered in cases where structural defects are already ruled out. In fact, given the ease and cost-effectiveness of assessing for the presence of MTrPs, it is worthwhile to direct treatment to these muscle 'knots' early to save on any superfluous and expensive testing. Needless to say, it is the responsibility of any primary health care practitioner to consider each patient's history carefully for any red flags that will indicate further referrals for further investigations.



So what are myofascial trigger points actually?

The current evidence is not conclusive but a probable theory suggests that repetitive overuse and/or prolonged static postures increase muscle tension, which impairs optimal blood circulation. Less oxygen and nutrient delivery to affected muscle cells and poorer drainage of metabolic waste products irritate the small nerve endings in the muscle tissue. The irritated nerve endings may then cause affected muscle fibres to contract by reflex, forming the tight spots known as trigger points.

Trigger point pain or painful muscle knots /2

Active vs Latent trigger points

Trigger points can be active or latent. Most of us would have had MTrPs accumulated in our muscle tissues due to various physical and emotional stressors over time. Latent trigger points are these 'silent' muscle knots that are present but not causing spontaneous pain – they only hurt when someone presses on them. These points become 'active' when the affected muscle is strained in some way or another (e.g. prolonged posture, sudden over-stretch, injury or stress). In the activated state, pain from these trigger points can be present even at rest.

Symptoms caused by trigger points

The presence of MTrPs can affect muscle function in a variety of ways. It can:

- Hinder full stretch of the affected muscle and produce the feeling of stiffness
- Impair optimal contraction or control of the muscle, resulting in pain on movement or a sense of weakness
- Cause pain sensations to be felt in other areas of the body (referred pain)
- Cause more MTrPs to form in the same muscle, or in adjacent muscles, resulting in the spread of pain symptoms

Treatment of myofascial trigger points

The specific locations and associated pain patterns of MTrPs have been painstakingly mapped out and described by Jane Travell M.D. and David Simons M.D. in their two-volume *Myofascial Pain and Dysfunction: The Trigger Point Manual*. Various methods of treating MTrPs have been developed over the last 20 years, the more commonly used ones include massage, stretching and dry needling. The latter method involves the use of a fine filament acupuncture needle to stimulate a 'twitch' response within the trigger point to 'soften' and relax the taut tissue.



Dry needling to the upper trapezius muscle

Dry needling works very quickly as it affects the muscle fibres directly – the 'softening' of the tense muscle tissue can be achieved in as little as 5 minutes. In the hands of a skilled therapist with proper qualifications, and as long as infection control is adhered to, dry needling is a very safe and effective treatment method. Self-management in the form of regular stretching, foam-rolling or tennis ball massage are also very useful to minimise the recurrence of pain from the formation of trigger points.