**Under Pressure**

Active trigger points can initiate a cycle of pain and dysfunction. These self-help techniques can help break it.

By Valerie DeLaune, LAc

Trigger points must be treated before conditioning exercises are effective. Although there are differing theories about the physiology of trigger point formation, researchers agree that there are palpable “nodules” and taut bands due to rigor (silent spasms) of the muscle fibers. Because fibers are already contracted, conditioning exercises can actually aggravate active trigger points, causing an escalating cycle of pain and dysfunction. If a trigger point is active, it will refer pain to other sensations and limit range of motion. If a trigger point is latent, it may cause a decreased range of motion and weakness, but not pain. The more frequent and intense your patient’s pain, the greater the number of active trigger points they are likely to have. It is imperative that trigger points be inactivated before conditioning exercises are assigned.

**How Do Trigger Points Form?**

One of the prevailing theories surrounding the mechanism responsible for the formation of trigger points is the “integrated trigger point hypothesis.” If a trauma occurs, or there is a large increase in the precipitation of calcium, there is an increased amount of calcium can be released by the saraplexic reticulum. This causes a maximal contraction of a segment of muscle, leading to a maximal demand for energy and impairment of local circulation. If circulation is impaired, the calcium pump doesn’t get the fuel and oxygen it needs to pump calcium back into the saraplexic reticulum, so the muscle fiber stays contracted. Sensitizing substances mentioned above predispose people to the development of trigger points. Once a trigger point is active, it will refer pain or other sensations from the involved muscle group to other areas.

**Self-help Techniques for Patients**

- **Use a tennis ball, racquetball, golf ball, dog’s play ball or baseball, or use your elbow or hand if instructed for particular muscles.**
- **Apply pressure for a minimum of eight seconds and a maximum of one minute.**
- **It should be somewhat uncomfortable, or “hurt good,” but it should not be so painful that you are either tensing up or holding your breath.**
- **If it is too painful, use a smaller or softer ball, or move to a softer surface (such as a bed or a surface padded with a pillow or blanket).**
- **Search the entire muscle for tender points, particularly the points of maximum tenderness.**
- **Be sure to work on both sides of the body to treat and relax the muscles symmetrically, but spend more time on the areas that need it more.**
- **If you have limited time, do one area thoroughly rather than rushing through many areas.**
- **Do stretches after the trigger-point work.**
- **Most people should work on their muscles once per day initially. If you have questions about your symptoms get worse, or you are sore for more than one day, stop the self-help until you have had a chance to consult with your therapist.**

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Referenced pain from lower extremity trigger points can be misdiagnosed as planter fasciitis, since they have similar pain referral patterns. True plantar fasciitis is caused by tension overload on the plantar aponeurosis, due to tightness in the gastrocnemius, soleus, adductor hallucis, flexor digitorum brevis, and/or adductor digiti minimi muscles. Trigger points may also contribute to tightness. Self-administered ischemic compression to the gastrocnemius and soleus (photos 1–2) and superficial planter foot muscles (photos 3–4) can inactivate trigger points and allow the muscles to relax, releasing pain and stimulation of the autonomic nervous system, resulting in a positive feedback system with the motor nerve terminal releasing excessive acetylcholine—and so the sarcomere stays contracted.

Another prevailing theory is the “muscle spindle” hypothesis, which proposes that the main cause of a trigger point is an inflamed muscle spindle.1 Pain receptors activate skeltofusimotor units during sustained overload of muscles via a spinal reflex pathway, which connects to the muscle spindles. As pain continues, sustained contraction and fatigue drive the skeltofusimotor units to exhaustion, and cause rigor of the extrafusal muscle fibers, forming the “taut band.” Because the muscle spindle itself has a poor blood supply, the inflammatory metabo-"
"Under Pressure" is a song by the British rock band Queen and singer David Bowie. Originally released as a single in October 1981, it was later included on Queen's 1982 album Hot Space. The song reached number one on the UK Singles Chart, becoming Queen's second number-one hit in their home country (after 1975's "Bohemian Rhapsody", which topped the chart for nine weeks) and Bowie's third (after the 1975 reissue of "Space Oddity" and "Ashes to Ashes" in 1980). The song charted in the top 10 in more Written by: Queen and David Bowie. Produced by: Queen and David Bowie. Musicians: Freddie Mercury - lead and backing vocals, piano, synthesizer (?), organ (?), handclaps, fingersnaps. David Bowie - lead vocals, synthesizer (?), additional guitar (?), handclaps, fingersnaps. Brian May - guitars, handclaps, fingersnaps. John Deacon - bass guitar, additional guitar (?), handclaps, fingersnaps. Roger Taylor - drums, backing vocals, handclaps, fingersnaps. David Richards - synthesizer (?), organ (?) Under pressure that burns a building down, Splits a family in two, Puts people on streets. That's OK. That's the terror of knowing What this world is about. "Under Pressure" evolved from a jam session with David Bowie and the band at their studio in Montreux, Switzerland. The scat singing on the song proves that it was born from an improvisation. Brian May said to Mojo magazine in October 2008, "It was hard, because you had four very precocious boys and David, who was precocious enough for all of us."
Queen Under Pressure lyrics: Pressure pushing down on me / Pressing down on you, no man asked for / U...Â Pressing down on you, no man asked for. Under pressure, that burns a building down. Splits a family in two. Puts people on streets. "Under Pressure" marked the first time Queen collaborated with another artist. David Bowie performed this with Annie Lennox at the 1992 "Concert For Life" in Wembley Stadium, London. The show was a tribute to Freddie Mercury, with proceeds going to AIDS causes.