

Influence of burst TENS stimulation on collagen formation after Achilles tendon suture in man. A histological evaluation with Movat's pentachrome stain.

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Retrograde or antidromic stimulation of the nociceptive C fibres is known to lead to the release of sensory neuropeptides, such as substance P (SP), by the peripheral endings of sensory unmyelinated C nerve fibres. These neuropeptides play a role in the healing of soft tissues. Burst TENS (Transcutaneous Electric Nerve Stimulation) is known to be most effective in influencing retrograde C fibre-evoked activity. This is why burst TENS was used in a randomised study as a stimulus for the healing of the sutured Achilles tendon in 9 patients, versus 9 others who received no stimulus. Originally, each group consisted of 10 patients, but there was a single drop-out in each group. Six weeks after surgery a needle biopsy sample was obtained, and stained with Movat's pentachrome stain. It showed a statistically significant influence of burst TENS on new collagen production, maturation of newly formed collagen and organisation of collagen. This suggests that burst TENS might positively influence healing of Achilles tendon suture in man.