What Is Targeted Muscle Reinnervation?

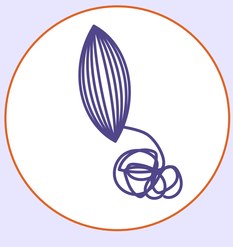
When a limb is amputated, the nerves that are left can no longer connect with their intended target, such as the foot or ankle. As a result, these nerves become disorganized and can cause painful medical conditions, such as phantom limb pain and neuroma (nerve) pain.

Targeted muscle reinnervation (TMR) is a surgical procedure that can relieve painful conditions by reconnecting amputated nerves to nearby nerves and eventually muscle targets.

When a nerve is cut, it can grow into a jumbled neuroma, which can be painful.

Similar to a severed live electrical wire that sparks, a severed nerve can spark phantom pain. These painful sensations seem to be coming from the part of the limb that is no longer attached to the body.

Nerves need somewhere to go and something to do to avoid a neuroma from forming. The TMR procedure attaches the cut nerve to a working nerve that activates a muscle.



Resources:

1. Dumanian GA, Potter BK, Mioton LM, et al. Targeted muscle reinnervation treats neuroma and phantom pain in major limb amputees: a randomized clinical trial. Ann Surg. 2018.
2. Valerio IL, Dumanian GA, Jordan SW, et al. Targeted muscle reinnervation (TMR) at the time of major limb amputation decreases phantom and residual limb pain. J Am Coll Surg. 2019;228:217-226.
3. Targeted muscle reinnervation (TMR) can reduce pain and improve limb function. (n.d.). Retrieved from wexnermedical.osu.edu/plastic-surgery/restorativesurgery-and-repair/targeted-muscle-reinnervation

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