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Scientific booklet

TECHNO CONCEPT
ALWAYS IN MOTION

MODE 1

FPS

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Functional Proprioceptive Stimulations

1

Combining FPS with botulinum toxin injections improved ankle mobility, reduced spasticity and pain and enhanced walking speed in a child with unilateral spastic cerebral palsy

Case Report: Combination of focal vibration therapy and botulinum toxin injections to treat equinus gait in a child with unilateral spastic cerebral palsy. Boulay, 2025

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2

FPS treatment applied to the trunk improve the stride length, cadence and walking speed of patients with Parkinson's disease.

Alternate rhythmic vibratory stimulation of trunk muscles affects walking cadence and velocity in Parkinson's disease. De Nunzio, 2010

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3

Repetitive FPS sessions on upper limb after stroke, combined with conventional rehab, significantly improved proximal and distal upper-limb function versus rehabilitation alone.

Focal Muscle Vibration Method Application in Recovery of the Upper Limb Function in Patients with Cerebral Stroke in the Early Recovery Period. Fuchizhi, 2022

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4

Early FPS treatment of patients with fracture significantly reduced pain at rest or during movement and also greatly increased recovery of range of motion.

Effect of illusory kinesthesia on hand function in patients with distal radius fractures: a quasi-randomized controlled study. Imai, 2017

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5

FPS to the palm augmented the activity of the antagonistic forearm extensors, especially in the paretic hand, which was induced via top-down cortical modulation.

Augmented activity of the forearm extensor muscles induced by vibratory stimulation of the palm of the hand in individuals with subacute post-stroke hemiplegia. Kimura, 2022

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6

FPS improve postural sway & key gait parameters such as speed, cadence, step length, and single-limb support time of stroke patients.

Effect of a local vibration stimulus training programme on postural sway and gait in chronic stroke patients: a randomized controlled trial. Lee, 2013

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7

FPS in spinal cord injury patients is safe and feasible as early as the ICU setting, showing short- term reduction in spasticity, inducing relaxation and reducing kinesophobia.

Early functional proprioceptive stimulation in high spinal cord injury: a pilot study Martinache, 2025

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8

FPS applied during limb immobilization effectively prevents the maladaptive sensorimotor cortical reorganization typically seen with disuse.

Illusory movements prevent cortical disruption caused by immobilization. Roll, 2012

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9

FPS can significantly improve motor function in the flaccid upper limb of a patient recovering from acute brain injury, suggesting it as a promising rehabilitative technique.

Impact of Focal Muscle Vibration on Flaccid Upper Limb Motor Paralysis following Acute Brain Disease: A Case Study. Saito, 2023

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10

A 4-week rehabilitation program incorporating FPS significantly enhanced postural control and functional recovery of stroke patients compared to conventional therapy alone.

Effectiveness of a rehabilitation program involving functional proprioceptive stimulation for postural control and motor recovery among stroke patients: a double-blinded, randomized, controlled trial. Wisniowska-Szurlej, 2025

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MODE 2

Antalgy

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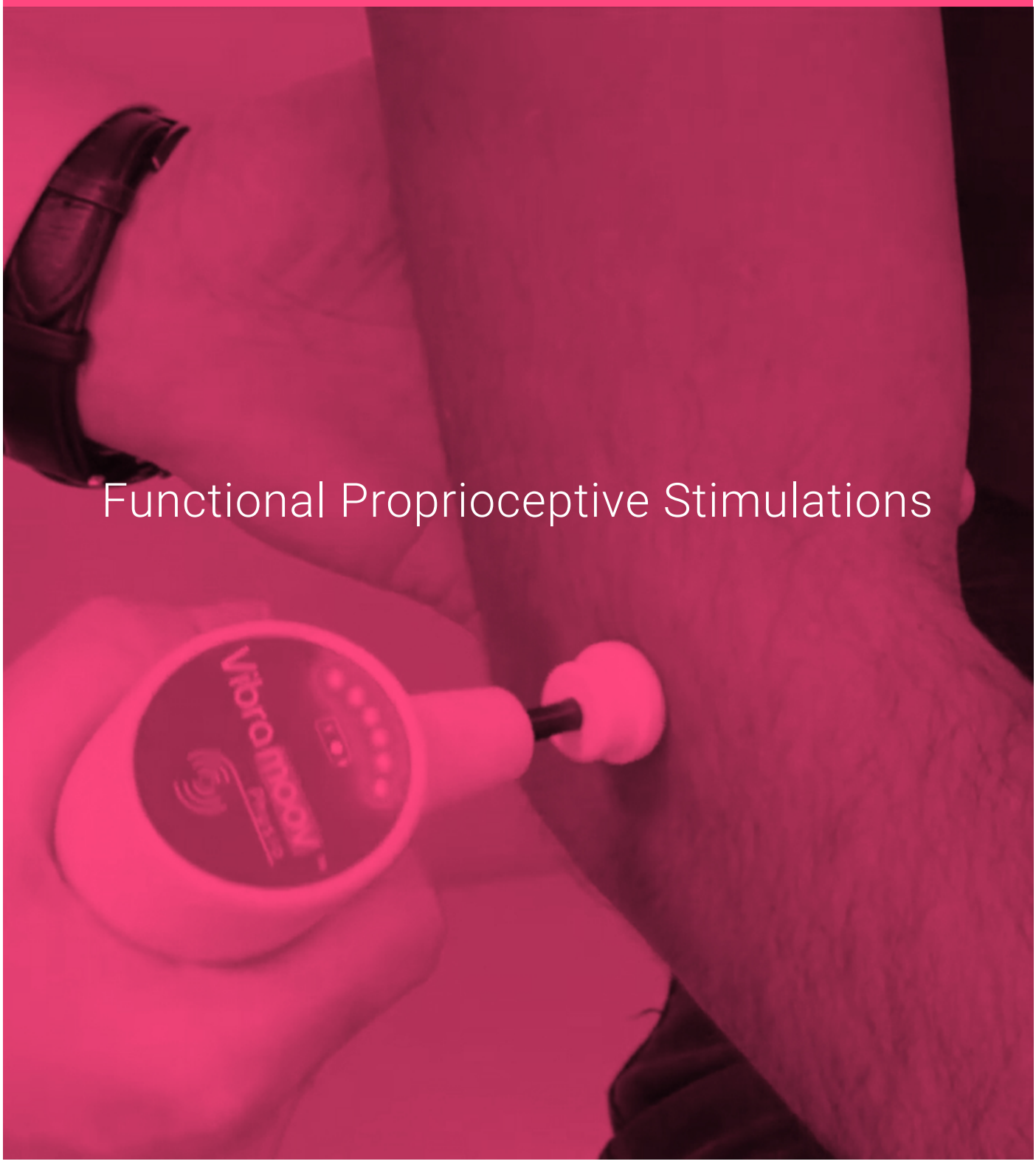

Functional Proprioceptive Stimulations

1

Focal vibration on neck muscle improved sensorimotor function and localized pain thresholds in neck pain patients, with effects lasting at least 24 hours

After-effects of neck muscle vibration on sensorimotor function and pain in neck pain patients and healthy controls - a case-control study. Beinert K, Englert V, Taube W. , 2019

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2

Focal vibration reduce pain by activating mechanoreceptors and modulating nociceptive signals, supporting its potential as a non-drug therapy

The analgesic effect of localized vibration: a systematic review. Part 1: the neurophysiological basis. Casale R, Hansson P, 2022

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3

Focal vibrations enhance range of motion recovery in complex regional pain syndrom (CRPS) type I patients and sustainably reduce both pain and pain medication use

Proprioceptive feedback enhancement induced by vibratory stimulation in complex regional pain syndrome type I: an open comparative pilot study in 11 patients. Gay A, Parratte S, Salazard B, Guinard D, Pham T, Legré R, Roll JP. 2007

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4

Focal vibration reduces pain by activating touch receptors that inhibit pain via spinal gating and disrupt communication between somatosensory cortical regions

Focal vibration of the plantarflexor and dorsiflexor muscles improves poststroke spasticity: a randomized single-blind controlled trial. Chen, 2014

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5

Focal vibration reduced pain when used on painful areas, affected muscles, antagonists, or trigger points, proving its effectiveness as a non-invasive analgesic method

Focal Vibration Therapy for Motor Deficits and Spasticity Management in Post-Stroke Rehabilitation. Giorgi, 1984

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6

Somatosensory rehabilitation, including focal vibration, significantly reduced allodynia and improved upper limb function in complex regional pain syndrom (CRPS) patients

Somatosensory rehabilitation for allodynia in complex regional pain syndrome of the upper limb. Packham TL, Spicher CJ, MacDermid JC, Michlovitz S, Buckley DN, 2017

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7

Focal muscle vibration to trapezius muscles significantly reduced cervical pain, with effects lasting up to one month post-treatment in Parkinson's patients

Effects of focal muscle vibration on cervical pain in Parkinson's disease patient. Ronconi G, Gatto DM, Ariani M, Codazza S, Panunzio M, Coraci D, Ferrara PE, 2024

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8

Combining focal muscle vibration and kinesiotaping significantly reduced pain and improved knee function in patellofemoral pain syndrome patients

Patellofemoral Pain Syndrome: Focused Vibrations Plus Kinesiotaping with Insights into Radiological Influences. Santilli G, 2024.

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9

Somatosensory rehabilitation with distant focal vibration eliminated allodynia and revealed underlying sensory deficits in patients with neuropathic pain

Static mechanical allodynia (SMA) is a paradoxical painful hypo-aesthesia: observations derived from neuropathic pain patients treated with somatosensory rehabilitation. Spicher CJ, 2008.

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10

Focal vibration on neck muscle reduced pain in of cervical dystonia patients, with effects lasting at least 20 minutes, showing non-invasive therapeutic potential

Vibro-tactile stimulation of the neck reduces pain in people with cervical dystonia: a proof-of-concept study. Xu J, 2024.

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MODE 3

Tonicity

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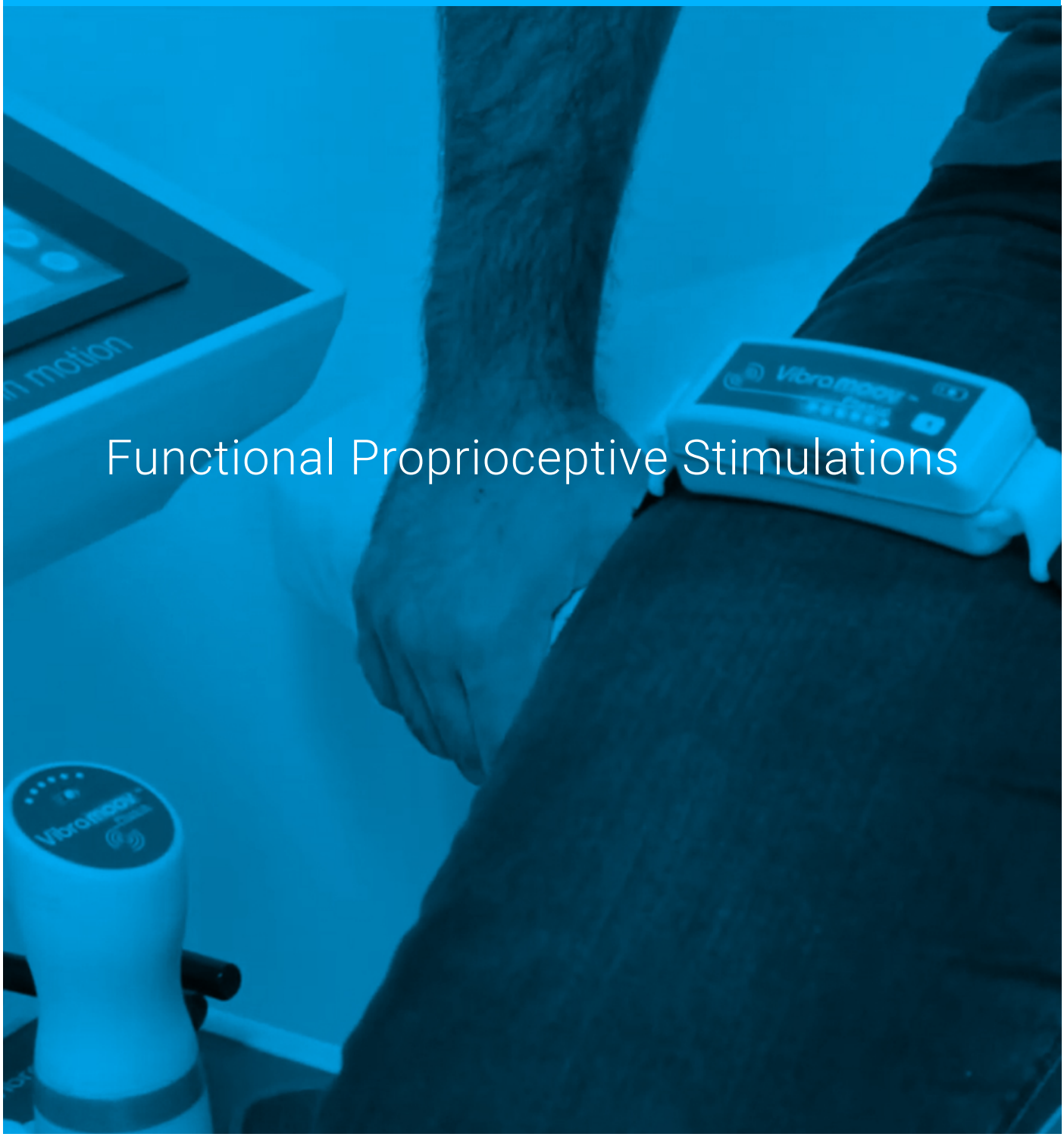

Functional Proprioceptive Stimulations

MODE 3

Tonicity

1

Focal muscle vibration induces sensory-motor plasticity, leading to lasting reduction of quadriceps hypotrophy and improved physical function in knee osteoarthritis patients

Localized muscle vibration reverses quadriceps muscle hypotrophy and improves physical function: a clinical and electrophysiological study. Benedetti MG, 2017.

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2

Focal muscle vibration enhances quadriceps activity during robot-assisted walking in partial spinal cord injury, reducing weight support and improving treatment outcomes

Is the Focal Muscle Vibration an Effective Motor Conditioning Intervention? A Systematic Review. J Funct Morphol Kinesiol. Fattorini L, 2021.

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3

Focal muscle vibration improves motor function by enhancing muscle interplay, increasing strength, refining kinematics, boosting neuromuscular performance & rehabilitation

Focal Muscle Vibration Method Application in Recovery of the Upper Limb Function in Patients with Cerebral Stroke in the Early Recovery Period. Fuchizhi, 2022

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4

Focal muscle vibration enhances motor recovery in neuromotor hypofunction by improving proprioceptive input, leading to rapid, lasting functional gains without joint strain

Effectiveness of Focal Muscle Vibration in the Recovery of Neuromotor Hypofunction. Fattorini, L, 2023.

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5

Focal vibration applied to the quadriceps femoris boosts muscle strength with effects lasting four weeks, making it a valuable tool in clinical settings during prolonged bed rest

Potentiation of muscle strength by focal vibratory stimulation on quadriceps femoris. G Ital Med Lav Ergon. Feltroni L, 2018.

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6

Focal vibrations to the quadriceps increase vertical jump by 55% and leg power by 35%, with effects lasting at least 90 days post-treatment

Improvement of stance control and muscle performance induced by focal muscle vibration in young-elderly women: a randomized controlled trial. Arch Phys Med Rehabil. Filippi GM, 2009.

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7

Focal muscle vibration in chronic stroke patients improved grip strength and hand dexterity, with effects lasting at least two weeks after a two-week intervention

The effects of vibratory stimulation employed to forearm and arm flexor muscles on upper limb function in patients with chronic stroke. J Phys Ther Sci. Jung SM, 2017.

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8

Focal vibrations are effective and safe in reducing pain and stifness and improving physical functioning of patients with knee osteoarthritis

Effects of focal muscle vibration on physical functioning in patients with knee osteoarthritis: a randomized controlled trial. Eur J Phys Rehabil Med. Rabini A, 2015.

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9

Focal vibration to the triceps brachii tendon increases contraction force in patients with partial cervical spinal cord injury, highlighting its potential for rehabilitation

Facilitation of triceps brachii muscle contraction by tendon vibration after chronic cervical spinal cord injury. J Appl Physiol (1985). Ribot-Ciscar E , 2003.

Read more →

10

Focal vibration promote motor recovery after stroke with a long-lasting and clinically relevant improvement in strength, step symmetry, gait, and kinematics parameters

Focal Muscle Vibration (fMV) for Post-Stroke Motor Recovery: Multisite Neuroplasticity Induction, Timing of Intervention, Clinical Approaches, and Prospects from a Narrative Review. Vigano L, 2023.

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MODE 4

Spasticity

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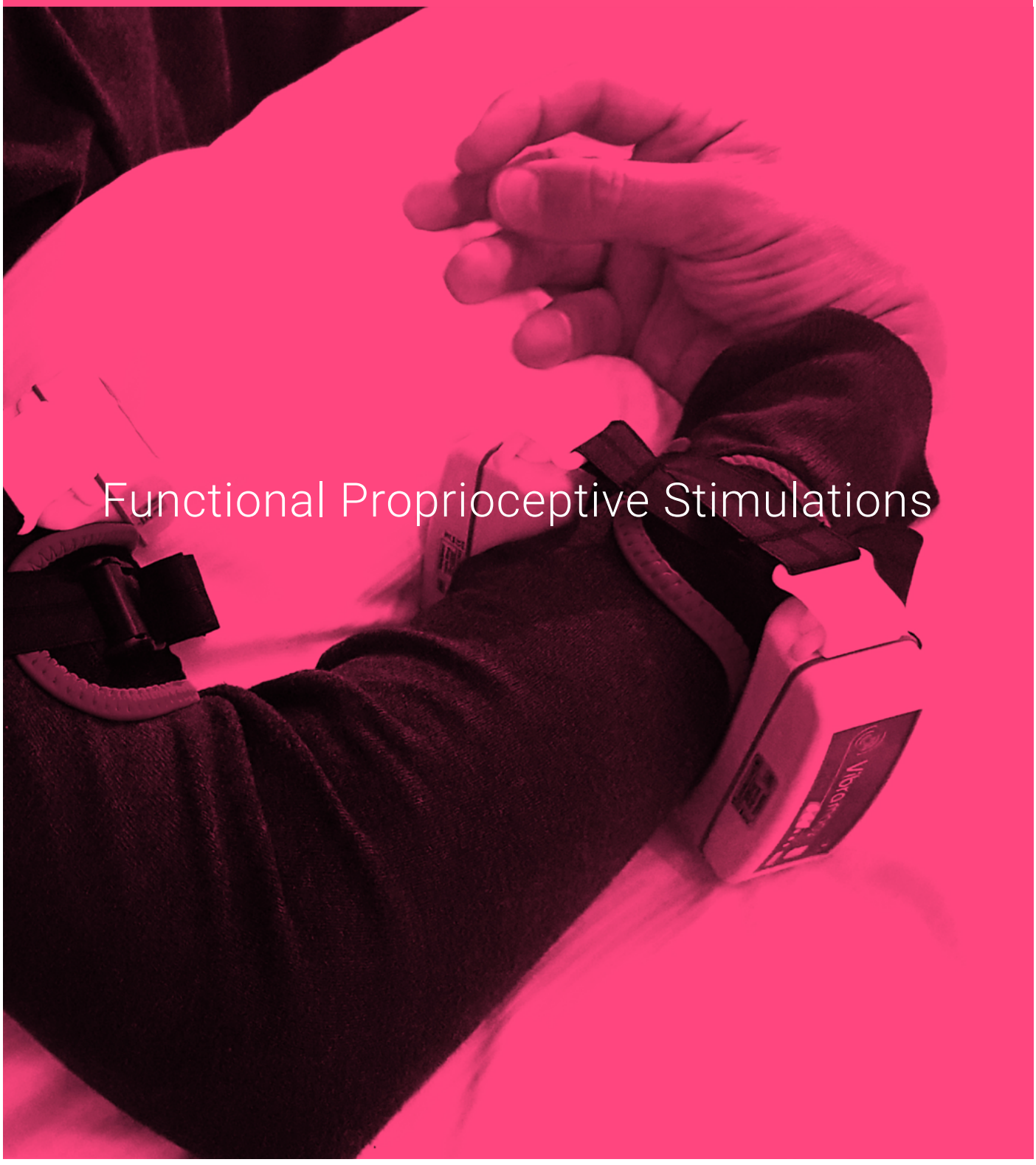

Functional Proprioceptive Stimulations

MODE 4

Spasticity

1

An 8-week regimen of focal muscle vibration therapy significantly reduced spasticity and improved daily living activities in a man with incomplete spinal cord injury

Focal Muscle Vibration Reduces Spasticity and Improves Functional Level in Incomplete Spinal Cord Injury. Anas R. Alashram, 2022.

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2

Focal muscle vibration to the triceps brachii with physiotherapy significantly reduced the spasticity & improved arm function in hemiplegic patients, with lasting effects

Localized 100 Hz vibration improves function and reduces upper limb spasticity: a double-blind controlled study. Eur J Phys Rehabil Med. Casale R, 2014.

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3

Focal muscle vibration over three days reduced lower limb spasticity and improved ankle motion in children with cerebral palsy, with effects lasting 12 weeks

Preliminary evidence of focal muscle vibration effects on spasticity due to cerebral palsy in a small sample of Italian children. Clin Ter. Celletti C, Camerota F, 2011.

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4

Focal vibration reduces pain by activating touch receptors that inhibit pain via spinal gating and disrupt communication between somatosensory cortical regions

Focal vibration of the plantarflexor and dorsiflexor muscles improves poststroke spasticity: a randomized single-blind controlled trial. Ann Phys Rehabil Med. Chen YL, 2023.

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5

Focal muscle vibration significantly reduces post-stroke spasticity, enhances motor function and pain relief, especially when combined with other rehab techniques

Focal Vibration Therapy for Motor Deficits and Spasticity Management in Post-Stroke Rehabilitation. Brain Sci. Giorgi F, Donati D, Platano D, Tedeschi R, 2024.

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6

Focal muscle vibration reduces spasticity in stroke patients by bilaterally activating S1-M1 areas, with stronger ipsilesional activity, linking neural modulation to symptom relief

Brain oscillatory activity correlates with the relief of post-stroke spasticity following focal vibration. J Integr Neurosci. Li W, 2022.

Read more →

7

Focal muscle vibration reduced upper limb spasticity and improved motor function in chronic stroke patients, with benefits lasting one month post-treatment

Decrease of spasticity with muscle vibration in patients with spinal cord injury. Clin Neurophysiol. Murillo N, 2011.

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8

Focal muscle vibration applied to spastic muscles (fingers, palm, and wrist flexors) significantly reduces spasticity in the hemiplegic upper limbs of post-stroke patients

Anti-spastic effects of the direct application of vibratory stimuli to the spastic muscles of hemiplegic limbs in post-stroke patients: a proof-of-principle study. J Rehabil Med. Noma T, 2012.

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9

A combined treatment with focal muscle vibration followed by robotic gait training improved spasticity and gait function in an adult with cerebral palsy

The effects of robotic gait neurorehabilitation and focal vibration combined treatment in adult cerebral palsy. Neurol Sci. Rutović S, Glavić J, Cvitanović NK, 2019.

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10

Focal muscle vibration promote post-stroke motor recovery by inducing cortical and spinal plasticity allowing an improvement in strength, walking and a reduction in

Motor Recovery After Stroke: From a Vespa Scooter Ride Over the Roman Sampietrini to Focal Muscle Vibration (fMV) Treatment. Toscano M, 2020.

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Very early et intensive neurorehabilitation

Vibramoov is a Medical Device, CE marked (Medical Device European Regulation) designed and manufactured upon ISO 13485: 2016 standard

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