

Physiological responses of fibromyalgia patients to a waving vibes therapy (andullation®)

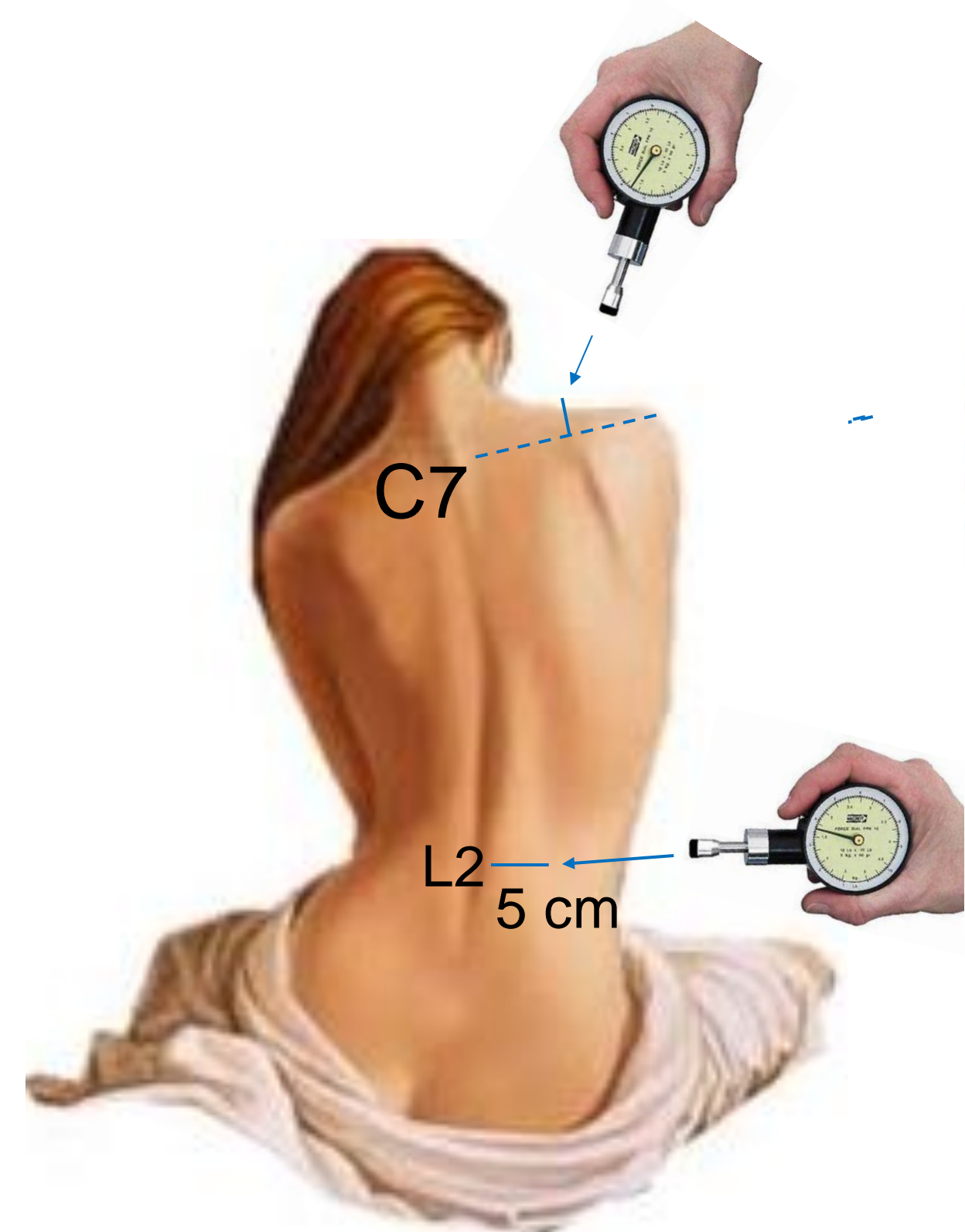
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AIMS: To ascertain the physiological effects produced by a multidirectional waving vibes therapy on the pain threshold, pain perception, well-being perception and lower limb volume on a group of fibromyalgia patients.

BACKGROUND. Vibrations have been used for therapy purpose during decades. Whole body vibratory platform is the most known but their effects have not been proved in fibromyalgic patients but with a low quality of evidence (Bidonde, 2016). Since fibromyalgia patients are refractory to most anti-inflammatory drugs other therapeutical approaches are wellcome.

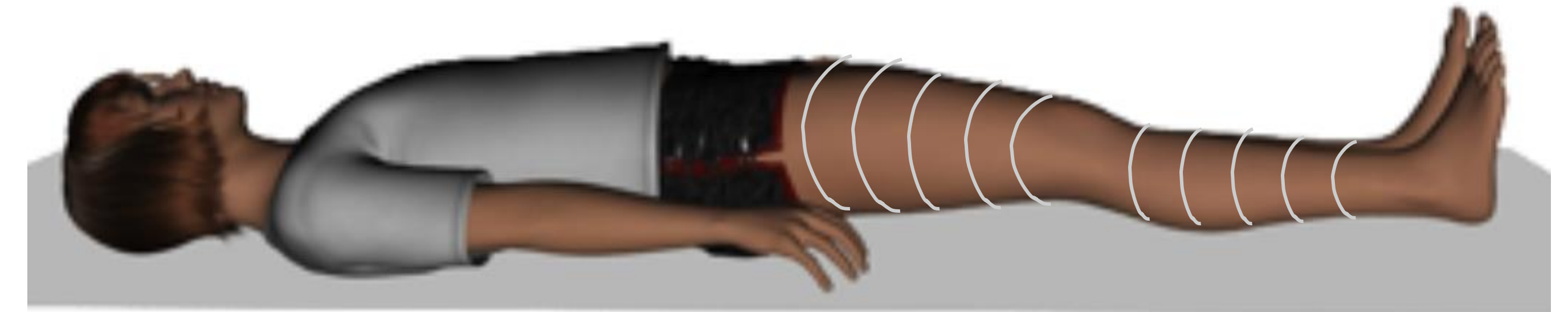
METHODS. Twelve patients clinically diagnosed of fibromyalgia and twelve non-fibromyalgic patients were treated with a vibratory mattress for 30 min a day during 5 days. A control group (n=12) rested on the mattress but did not receive the vibration therapy. The mattress had 70 vibratory sources. Vibrations were 1-8 mm in amplitude and 5 to 40 Hz in frequency. Vibration were distributed along the mattress as a sequential wave travelling from the heel to the head and vice versa under the body of subjects while stayed in a decubitus supinus position. Pain threshold was assessed with an algometer (Dolorimeter, Spain), pain and well-being perception was scored using a visual analog scale and lower limb volume by means of Kuhnke's technique.



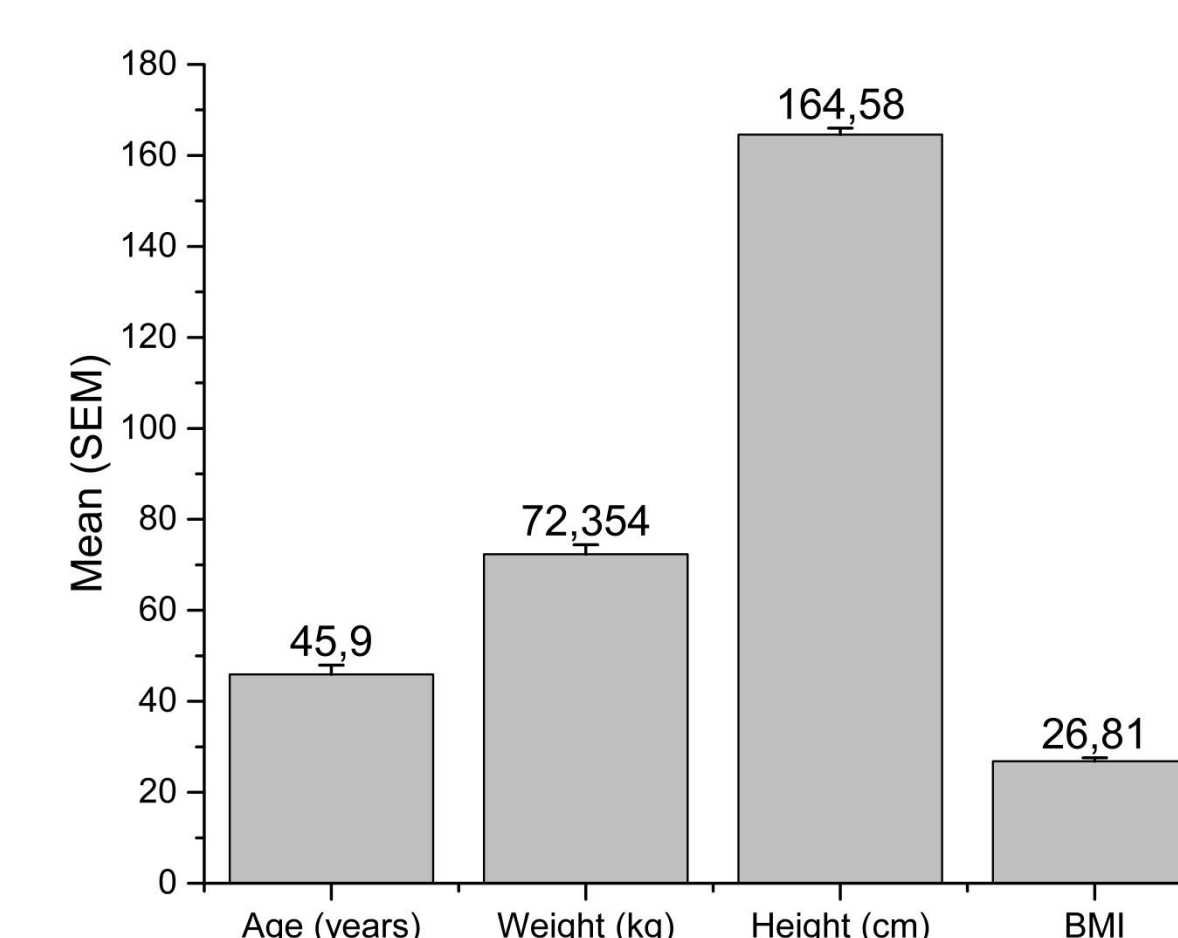
Algometry



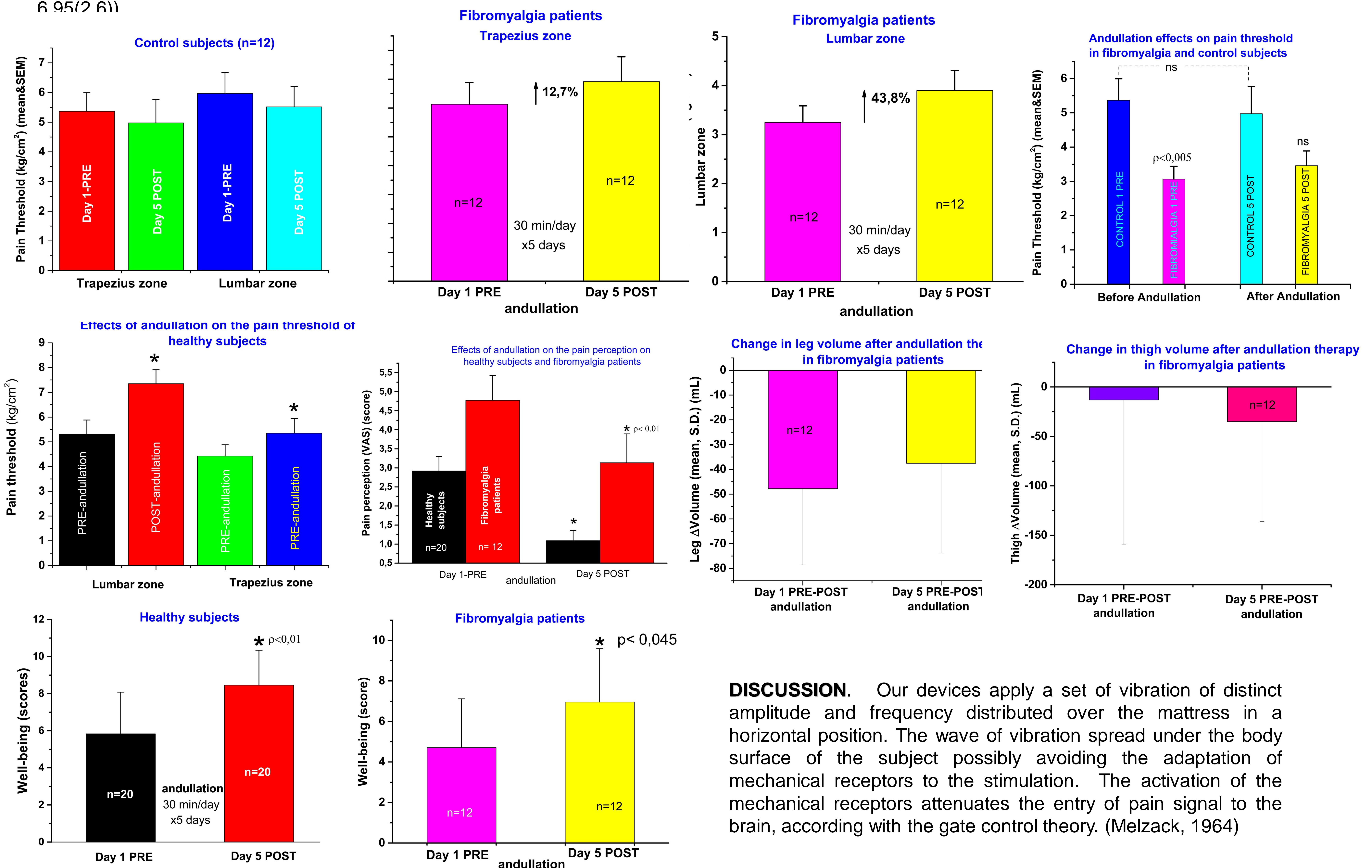
Andullation device



Kuhnke's technique



RESULTS. Pain thresholds showed a trend to increase after the treatment in the fibromyalgia group. VAS decreased 35% (from 4,8 (2,1) to 3,1 (2,3), mean (SD)) from the initial conditions to the last session of waving vibes therapy. Well-being score significantly increased by 32,4% (from 4.7(2.4) to 6.95(2.6))



DISCUSSION. Our devices apply a set of vibration of distinct amplitude and frequency distributed over the mattress in a horizontal position. The wave of vibration spread under the body surface of the subject possibly avoiding the adaptation of mechanical receptors to the stimulation. The activation of the mechanical receptors attenuates the entry of pain signal to the brain, according with the gate control theory. (Melzack, 1964)

CONCLUSION: The waving vibes therapy (andullation) was able to increase the well-being condition, to decrease the pain level (VAS) and the lower limb volume as well as trended to increase the pain threshold in fibromyalgic patients.



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