

Effect of Gravitational Unloading on Rat's Gastrocnemius Muscle Spinal Motor Center

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Abstract

© 2016, Springer Science+Business Media New York. The electromyographic methods were performed to estimate the rat's gastrocnemius muscle spinal motor center functional state under conditions of gravity unloading. The research was performed in the following experimental series: (1) after 35 days of microgravity influence; (2) after 35 days of microgravity influence in combination with support receptor excitation. The series of experiments showed that parameters of recorded evoked potentials in gastrocnemius muscle (GM) induced by sciatic nerve stimulation while gravity unloading (group 1), significantly differed from those registered in intact animals and not differed in group 2. It has been demonstrated that the reflex excitability of rat's gastrocnemius muscle spinal motor center increases under conditions of gravity unloading. Support afferentation limitation plays the key role in motor centers state change.

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Keywords

Electromyography, Gravitational unloading, Motor center, Support afferentation