

# Spinal cord stimulation improves forelimb use in an alpha-synuclein animal model of Parkinson's disease

Brys, Ivani

Bobela, Wojciech

Schneider, Bernard L.

Aebischer, Patrick

Fuentes, Romulo

Copyright © 2016 Informa UK Limited, trading as Taylor & Francis Group. Neuromodulation by spinal cord stimulation has been proposed as a symptomatic treatment for Parkinson's disease. We tested the chronic effects of spinal cord stimulation in a progressive model of Parkinson's based on overexpression of alpha-synuclein in the substantia nigra. Adult Sprague Dawley rats received unilateral injections of adeno-associated virus serotype 6 (AAV6) in the substantia nigra to express alpha-synuclein. Locomotion and forepaw use of the rats were evaluated during the next 10 weeks. Starting on week 6, a group of AAV6-injected rats received spinal cord stimulation once a week. At the end of the experiment, tyrosine hydroxylase and alpha-synuclein immunostaining were performed. Rats with unilateral alpha-synuclein expression showed a significant decrease in the use of the contralateral forepaw, which was mildly but significantly reverted by spinal cord stimulation applied once a week from the 6th