

## Accepted Manuscript

Title: Treadmill exercise facilitates synaptic plasticity on dopaminergic neurons and fibers in the mouse model with Parkinson's disease

Author: Mal-Soon Shin Ho-Young Jeong Da-In An Hye-Yun Lee Yun-Hee Sung



PII: S0304-3940(16)30220-8  
DOI: <http://dx.doi.org/doi:10.1016/j.neulet.2016.04.015>  
Reference: NSL 31965

To appear in: *Neuroscience Letters*

Received date: 13-3-2016  
Revised date: 4-4-2016  
Accepted date: 8-4-2016

Please cite this article as: Mal-Soon Shin, Ho-Young Jeong, Da-In An, Hye-Yun Lee, Yun-Hee Sung, Treadmill exercise facilitates synaptic plasticity on dopaminergic neurons and fibers in the mouse model with Parkinson's disease, *Neuroscience Letters* <http://dx.doi.org/10.1016/j.neulet.2016.04.015>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Treadmill exercise facilitates synaptic plasticity on dopaminergic neurons and fibers in the mouse model with Parkinson's disease

Mal-Soon Shin<sup>1</sup>, Ho-Young Jeong<sup>2</sup>, Da-In An<sup>2</sup>, Hye-Yun Lee<sup>2</sup>, Yun-Hee Sung<sup>2,\*</sup>

<sup>1</sup>*School of Global Sport Studies, Korea University, Sejong-si, South Korea*

<sup>2</sup>*Department of Physical therapy, College of health sciences, Kyungnam University, Changwon, South Korea*

\* Corresponding author at: Department of Physical Therapy, College of health sciences, Kyungnam University, 7 Kyungnamdaehak-ro, Masanhappo-gu, Changwon-si, Gyeongsangnam-do 51767, South Korea. Tel.: +82 55 249 6334; Fax: +82 505 999 2173; E-mail: sungpt97@kyungnam.ac.kr.

## Highlights:

- Treadmill exercise increased decreased motor balance and coordination ability in mouse models of Parkinson's disease (PD)
- Treadmill exercise increased level of tyrosine hydroxylase on the substantia nigra pars compacta and striatum in mouse models of PD
- Treadmill exercise facilitated expression of PSD-95 and synaptophysin and increased dendritic spines on dopaminergic neurons and fibers in mouse models of PD

## Abstract

Exercise for patients with Parkinson's disease (PD) helps to alleviate clinical symptoms such as tremor, balance instability, gait dysfunction, and rigidity. However, molecular mechanism about effect of exercise is poorly unknown. In this study, we investigated effect of exercise in synapse and dendritic spine of nigrostriatal dopaminergic neurons on mice with PD. The C57BL/6J male mice (n = 40) were divided by

Download English Version:

<https://daneshyari.com/en/article/6279526>

Download Persian Version:

<https://daneshyari.com/article/6279526>

[Daneshyari.com](https://daneshyari.com)