

## Accepted Manuscript

Title: Weekday-only chronic oral methylphenidate self-administration in male rats: Reversibility of the behavioral and physiological effects

Authors: Emily Carias, Dennis Fricke, Abisha Vijayashanthar, Lauren Smith, Rathini Somanesan, Connor Martin, Leanna Kalinowski, Daniel Popoola, Michael Hadjiargyrou, David E. Komatsu, Panayotis K. Thanos



PII: S0166-4328(18)30359-0  
DOI: <https://doi.org/10.1016/j.bbr.2018.08.014>  
Reference: BBR 11538

To appear in: *Behavioural Brain Research*

Received date: 8-3-2018  
Revised date: 14-8-2018  
Accepted date: 15-8-2018

Please cite this article as: Carias E, Fricke D, Vijayashanthar A, Smith L, Somanesan R, Martin C, Kalinowski L, Popoola D, Hadjiargyrou M, Komatsu DE, Thanos PK, Weekday-only chronic oral methylphenidate self-administration in male rats: Reversibility of the behavioral and physiological effects, *Behavioural Brain Research* (2018), <https://doi.org/10.1016/j.bbr.2018.08.014>

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.

## RECOVERY FOLLOWING WEEKDAY-ONLY METHYLPHENIDATE

**Weekday-only chronic oral methylphenidate self-administration in male rats: Reversibility of the behavioral and physiological effects**

Emily Carias<sup>1</sup>, Dennis Fricke<sup>1</sup>, Abisha Vijayashanthar<sup>1</sup>, Lauren Smith<sup>1</sup>, Rathini Somanesan<sup>1</sup>, Connor Martin<sup>1</sup>, Leanna Kalinowski<sup>1</sup>, Daniel Popoola<sup>1</sup>, Michael Hadjiargyrou<sup>2</sup>, David E. Komatsu<sup>3</sup> and Panayotis K. Thanos<sup>1</sup>

<sup>1</sup> Behavioral Neuropharmacology and Neuroimaging Laboratory on Addictions, Research Institute on Addictions, Department of Pharmacology and Toxicology, Jacobs School of Medicine and Biosciences, University at Buffalo, Buffalo, NY, USA. <sup>2</sup> New York Institute of Technology, Department of Life Sciences, Old Westbury, NY, USA

<sup>3</sup> Stony Brook University, Department of Orthopedics, Stony Brook, NY, USA.

**Abstract**

Methylphenidate (MP) is a commonly prescribed psychostimulant for Attention Deficit Hyperactivity Disorder (ADHD). We recently reported behavioral and developmental effects of chronic MP use in healthy rats. The current study investigated how interrupting chronic MP treatment with weekend abstinence altered the behavioral and physiological consequences of chronic MP treatment, and if prolonged abstinence would reverse the observed effects. Male Sprague Dawley rats were assigned to one of three treatment groups: water (W); low dose (LD) MP; and high dose (HD) MP. For 13 weeks, rats had access to drink from a bottle containing 4 mg/kg MP (LD), 30 mg/kg MP (HD) or water (W) for 1 hour, and 10 mg/kg MP (LD), 60 mg/kg MP (HD) or water (W) for the next 7 hours, each week day. During weekends, all animals received only water as well as throughout the 5-week-long abstinence phase, which immediately followed the treatment phase. Throughout the treatment phase, regardless of weekend abstinence, chronic MP resulted in significant decreased food and fluid intake and body weight. Also, HD MP exposure resulted in the following behavioral effects: increased open field and circadian locomotor activity; increased latency to immobility and decreased time spent immobile in the forced swim test; increased center activity in the open field and percent of time spent in an open arm of the elevated-plus-maze; and increased social affiliation and memory in the Crawley's three chamber

Download English Version:

<https://daneshyari.com/en/article/10138278>

Download Persian Version:

<https://daneshyari.com/article/10138278>

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