

Accepted Manuscript

The duration of intermittent access to preferred sucrose-rich food affects binge-like intake, fat accumulation, and fasting glucose in male rats

A.D. Kreisler, M. Mattock, E.P. Zorrilla



PII: S0195-6663(18)30459-8

DOI: [10.1016/j.appet.2018.07.025](https://doi.org/10.1016/j.appet.2018.07.025)

Reference: APPET 3972

To appear in: *Appetite*

Received Date: 7 April 2018

Revised Date: 23 July 2018

Accepted Date: 25 July 2018

Please cite this article as: Kreisler A.D., Mattock M. & Zorrilla E.P., The duration of intermittent access to preferred sucrose-rich food affects binge-like intake, fat accumulation, and fasting glucose in male rats, *Appetite* (2018), doi: [10.1016/j.appet.2018.07.025](https://doi.org/10.1016/j.appet.2018.07.025).

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.

Abstract

Many people restrict their palatable food intake. In animal models, time-limiting access to palatable foods increases their intake while decreasing intake of less preferred alternatives; negative emotional withdrawal-like behavior is sometimes reported. In drug addiction models, intermittent extended access drives greater changes in use than brief access. When it comes to palatable food, the impact of briefer vs. longer access durations within intermittent access conditions remains unclear. Here, we provided male rats with chow or with weekday access to a preferred, sucrose-rich diet (PREF) (2, 4, or 8h daily) with chow otherwise available. Despite normal energy intake, all restricted access conditions increased weight gain by 6 weeks and shifted diet acceptance within 1 week. They increased daily and 2-h intake of PREF with individual vulnerability and decreased chow intake. Rats with the briefest access had the greatest binge-like (2-h) intake, did not lose weight on weekends despite undereating chow, and were fatter by 12 weeks. Extended access rats (8h) showed the greatest daily intake of preferred food and corresponding undereating of chow, slower weight gain when PREF was unavailable, and more variable daily energy intake from week to week. Increased fasting glucose was seen in 2-h and 8-h access rats. During acute withdrawal from PREF to chow diet, restricted access rats showed increased locomotor activity. Thus, intermittent access broadly promoted weight gain, fasting hyperglycemia and psychomotor arousal during early withdrawal. More restricted access promoted greater binge-like intake and fat accumulation, whereas longer access promoted evidence of greater food reward tolerance.

Download English Version:

<https://daneshyari.com/en/article/7305005>

Download Persian Version:

<https://daneshyari.com/article/7305005>

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