

New research shows extended exposure to caffeine and sucrose impacts behaviour and brain chemistry

February 7 2014, by Amy Macintyre



Credit: Flickr/Feathred Tar

New research suggests the long-term consumption of caffeinated sugar-sweetened drinks in place of water can cause lasting changes to behaviour, having profound effects on brain chemistry.

Long-term treatment (26 days) with caffeine in [adult rats](#) and sugar in

adolescent rats enhances the behavioural response to drug administration, when compared to combined treated animals, after short (1 week) and long (6 week) treatment free periods, respectively.

Proteomic analyses of the brain identified over 500 differentially expressed proteins across pretreatments in the orbitofrontal cortex, an important brain region in decision making processes. Approximately 23 per cent of the proteins in the combined pretreated [rats](#) were changed when compared to control.

This study demonstrates that chronic caffeine and sucrose consumption causes enduring behavioral effects that are age and time dependent, and are accompanied by protein changes that may impact on mental health.

Provided by Macquarie University

Citation: New research shows extended exposure to caffeine and sucrose impacts behaviour and brain chemistry (2014, February 7) retrieved 24 May 2024 from <https://medicalxpress.com/news/2014-02-exposure-caffeine-sucrose-impacts-behaviour.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--