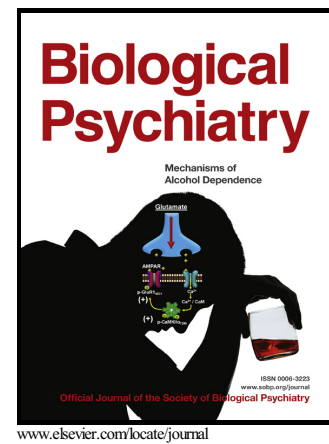


## Author's Accepted Manuscript

Reversing the Atypical Valuation of Drug and Nondrug Rewards in Smokers Using Multi-Modal Neuroimaging  
Reversing the Drug-Reward Bias in Addiction

Travis E. Baker, Paul Lesperance, Alan Tucholka, Stephane Potvin, Kevin Larcher, Yu Zhang, Didier Jutras-Aswad, Patricia Conrod



PII: S0006-3223(17)30084-7

DOI: <http://dx.doi.org/10.1016/j.biopsych.2017.01.015>

Reference: BPS13106

To appear in: *Biological Psychiatry*

Cite this article as: Travis E. Baker, Paul Lesperance, Alan Tucholka, Stephane Potvin, Kevin Larcher, Yu Zhang, Didier Jutras-Aswad and Patricia Conrod, Reversing the Atypical Valuation of Drug and Nondrug Rewards in Smokers Using Multi-Modal Neuroimaging  
Reversing the Drug-Reward Bias in Addiction, *Biological Psychiatry*, <http://dx.doi.org/10.1016/j.biopsych.2017.01.015>

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Running head: REWARD VALUATION

Short title: Reversing the drug-reward bias in addiction

Reversing the atypical valuation of drug and nondrug rewards in smokers using multi-modal  
neuroimaging

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## Abstract

**Background:** Chronic substance use can disrupt the reward function of the anterior cingulate cortex (ACC), biasing the ACC to favor goal-directed behaviors that converge on drug use. Here we use multimodal neuroimaging methods to ask whether modulating reward-related signaling in ACC can reverse the atypical valuation of nondrug and drug rewards in abstinent smokers. **Method:** We first recorded fMRI data from twenty moderately dependent cigarette smokers (mean age 25 yrs, no history of neuropsychiatric disorders), following an overnight

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