

Editorial Comment: “Glucose Modulates Human Ventral Tegmental Activity in Response to Sexual Stimuli”



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Numerous neuroimaging studies have increased our knowledge on the role played by several cortical and subcortical brain regions in human sexual arousal (SA).¹ A recently published study by Ulrich et al² emphasized the importance of glucose in the modulation of ventral tegmental area (VTA) activity elicited by passive observation of male and female photos (nude and clothed). (i) Although the VTA is involved in fear arousal, moral sentiments, food intake, pleasure, and reward stimuli, Ulrich et al did not mention the relevance of VTA activity in neuroimaging studies of SA in the text. In a pioneering study, Bocher et al³ observed VTA activity during subjective SA and hypothesized a role for VTA activity in the motivation underlying sexual behavior and not only in the salience of sexual stimuli.¹ (ii) The stimuli used were not from a standardized or previously used database, Ulrich et al did not test the perceived SA in an independent session, and they collected no behavioral or psychophysiological responses to assess subjective or genital arousal during functional magnetic resonance imaging. As reported by Ferretti et al,⁴ video clips are better than photos to evoke a genital response in a functional magnetic resonance imaging study. (iii) Although the 1st part of the acquisition was used to assess “baseline” VTA activity, the study did not include a “before glucose” condition with equivalent stimuli or a placebo condition. Although the findings are innovative, further studies are needed to disentangle the role played by glucose during visual sexual stimulation in VTA activity.

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STATEMENT OF AUTHORSHIP

Category 1

- (a) **Conception and Design**
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- (b) **Acquisition of Data**
Not applicable
- (c) **Analysis and Interpretation of Data**
Not applicable

Category 2

- (a) **Drafting the Article**
Nicoletta Cera
- (b) **Revising It for Intellectual Content**
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Category 3

- (a) **Final Approval of the Completed Article**
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REFERENCES

1. Stoléru S, Fonteille V, Cornélis C, et al. Functional neuroimaging studies of sexual arousal and orgasm in healthy men and women: a review and meta-analysis. *Neurosci Biobehav Rev* 2012;36:1481-1509.
2. Ulrich M, Stauß P, Grön G. Glucose modulates human ventral tegmental activity in response to sexual stimuli. *J Sex Med* 2018;15:20-28.
3. Bocher M, Chisin R, Parag Y, et al. Cerebral activation associated with sexual arousal in response to a pornographic clip: a 150-H2O PET study in heterosexual men. *Neuroimage* 2001;14:105-117.
4. Ferretti A, Caulo M, Del Gratta C, et al. Dynamics of male sexual arousal: distinct components of brain activation revealed by fMRI. *Neuroimage* 2005;26:1086-1096.

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