

A brain link to STI/HIV sexual risk

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Anne M. Teitelman, PhD, FNP-BC, FAANP, FAAN, Associate Professor at Penn Nursing. Credit: Penn Nursing

Data show that young adult women in the United States have high rates of sexually transmitted infections (STIs) that increase their risk of HIV. Though epidemiologic and behavioral factors for risk have been studied, we know very little about brain factors that may be linked to STI/ HIV sexual risk.

Research has begun to reveal neural correlates associated with behavior that increase the risk of STIs; much of the early work has focused on adolescents and the role of cortical regulatory circuits. These "executive" circuits govern the pull of rewards and allow an individual to evaluate choices and future consequences associated with a particular behavior (e.g., whether to have sex or not) and enable inhibition of behavior associated with risks (e.g., sex without a condom). Surprisingly, there has been less research in the (subcortical) brain circuits for reward and motivation themselves, and their role in sexual risk.

In a new NIH/NIMH study from the University of Pennsylvania School of Nursing (Penn Nursing) and the Perelman School of Medicine, researchers

assessed the link between sexual risk and the brain and [behavioral response](#) to sexual cues in emerging [adult women](#). They found that [young women](#) who are at increased risk for STIs and/or HIV, through inconsistent condom use by a partner, have a decreased response in rewarding and motivational circuits to sexual cues and feel less positively about sexual-related stimuli, compared to women whose partners used condoms consistently. Though the data are correlational, regular condom use in a relationship may reflect greater caring and consideration for untoward consequences, especially for the woman's risks—contributing to a more positive emotional and brain response to sexual stimuli. Worth noting, these findings contrast to previous studies in men, where a heightened brain response to sexual cues was linked to greater sexual risk behaviors.

"Understanding the relationship of brain response to appetitive cues associated with greater [sexual risk](#)—for women and for men—can help to inform treatment interventions that target these [brain](#) responses with [behavioral therapy](#), medication, or both," says Anne M. Teitelman, Ph.D., FNP-BC, FAANP, FAAN, Associate Professor of Nursing, one of the lead authors of the study with Paul S. Regier, Ph.D., in the Department of Psychiatry, University of Pennsylvania Perelman School of Medicine.

The study's findings have been published in *Frontiers in Behavioral Neuroscience* in an article titled "Women at Greater Sexual Risk for STIs/HIV Have a Lower Mesolimbic and Affective Bias Response to Sexual Stimuli."

More information: Paul S. Regier et al. Women at Greater Sexual Risk for STIs/HIV Have a Lower Mesolimbic and Affective Bias Response to Sexual Stimuli, *Frontiers in Behavioral Neuroscience* (2020). [DOI: 10.3389/fnbeh.2019.00279](https://doi.org/10.3389/fnbeh.2019.00279)

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