

Striatal dopamine transporter binding correlates with body composition and visual attention bias for food cues in men

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Research to be presented at the Annual Meeting of the Society for the Study of Ingestive Behavior (SSIB), the foremost society for research into all aspects of eating and drinking behavior, describes a way that brain chemistry may make some people notice food more easily, which can tempt overeating even in people who are not overweight. Dopamine activity in the striatum, an area of the brain sensitive to food reward, was linked to how quickly men noticed a food picture hidden among neutral pictures. In turn, the men who quickly noticed food pictures also ate more.

From rodent research it is clear that [dopamine](#) action in the striatum motivates eating, and this goes awry in obesity. "We do know that in human obesity the striatal dopamine system is affected, but interesting enough we know little about the striatal dopamine system of young, healthy individuals and how it relates to the motivation to eat" says Susanne la Fleur from the Academic Medical Center in Amsterdam, who directed the study linking dopamine, attention to [food](#), and eating.

Ordinarily the burst of dopamine during a rewarding activity is eventually stopped when it is re-absorbed into the cells it came from. That re-uptake process requires a brain chemical called "[dopamine transporter](#)" (DAT). Lower DAT means dopamine is reabsorbed more slowly, causing it to keep acting on the brain. The researchers scanned brains of healthy, non-obese young men to determine available DAT. The men completed a computerized visual attention task to see how quickly they could detect food pictures among neutral pictures. Subjects were also asked to report food intake during 7 days.

The researchers found that the men with lower DAT, which means higher dopamine activity,

showed a stronger visual attention bias towards food, detecting food pictures more quickly. "We could speculate that in healthy humans dopamine does motivate eating, however although we did observe a correlation between striatal dopamine transporter binding and the visual attention bias for food; and between visual attention bias for food and actual food intake, we did not observe a correlation between striatal dopamine transporter binding and actual food intake. Thus, a factor in addition to dopamine must be involved in going from being motivated to actual eating", la Fleur concluded.

Provided by Society for the Study of Ingestive Behavior

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