

Bulimia and the brain: Responses to body image and food

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(Medical Xpress)—Brains of women with bulimia respond differently to women without bulimia when shown images of slim women. Both groups responded similarly to pictures of food, according to a study led by researchers at King's College London's Institute of Psychiatry, published *BMC Psychiatry* today.

The work suggests that treatments for bulimia should have a strong focus on self image rather than solely or primarily on issues with food.

The study is funded by the National Institute for Health Research Biomedical Research Centre (NIHR BRC) for Mental Health at the South London and Maudsley NHS Foundation Trust and Institute of Psychiatry, King's College London.

The neural processes behind bulimia that are linked with key symptoms of binge-eating, purging and altered [body image](#) are poorly understood. In an attempt to increase knowledge about this type of behaviour, researchers investigated the [brain patterns](#) in a group of 21 women with bulimia and 23 women without. They found that brain responses between the two groups only differed when they were shown pictures of slim women.

To investigate the difference in brain patterns the women underwent functional MRI scans. While these scans were being performed the women were shown images that included appetising food, slim women, control images and also a black cross, which provided a baseline signal. Before being shown these images the study's participants were given instructions such as "imagine eating this food" and "compare your own body against the bodies in the pictures".

When comparing these brain scans, the researchers found that the part of the brain concerned with self-reflection was more activated in women with bulimia when shown images of slim women, than it was in healthy women. In contrast, when shown images of food there were no marked differences between both groups of women. Both images of slim women and food pictures resulted in an increase of subjective anxiety in [women](#) with bulimia; this was measured during the scanning procedure.

Professor Ulrike Schmidt, the senior author on the study, and Head of the Section of Eating Disorders at the Institute of Psychiatry at King's said: "Bulimia nervosa is a much misunderstood and often trivialised condition because its key symptoms of overeating, purging and preoccupation with one's body elicit moralistic judgements from others, including health professionals. Our findings speak to the extreme fear that sufferers have of not being acceptable to others, and their obsessive need to compare themselves against others, especially in relation to their appearance"

Frederique Van den Eynde, currently at McGill University and the Douglas Mental Health Institute in Montreal, lead author of the study said that the findings "support the idea that psychotherapy for [bulimia nervosa](#) should have a particular focus on body image and not solely focus on food and eating related issues."

Currently the treatment of choice for [bulimia](#) is cognitive behaviour therapy, but a significant subgroup of participants do not get better with CBT alone. The researchers suggest that their findings could also be used to develop other clinical treatments, e.g. based on neuromodulation, which may counteract the [brain activation patterns](#) found in the current study.

More information: Frederique Van den Eynde et al. "Brain responses to body image stimuli but not food are altered in women with bulimia nervosa." *BMC Psychiatry* [DOI: 10.1186/1471-244X-13-302](https://doi.org/10.1186/1471-244X-13-302)

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