Functional Neuroanatomy of Body Shape Perception in Healthy and Eating-Disordered Women
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Purpose
This study investigates the neural correlates of body image in patients with eating disorders and control subjects by examining cerebral response to body pictures.

Experimental Procedure
Participants:
- 22 patients with eating disorders (9 Bulimia Nervosa and 13 Anorexia Nervosa)
- 18 healthy women

Stimuli:
Subjective and MRI scanning

Aversion: Scale I: “Fear”; scale II: “Disgust”; 1 = not at all, 7 = very much

Results
( Subjective)

"You will be shown drawings of houses and bodies. Look at each of them and think how acceptable such a house/body-shape would be for you."

Results
(fMRI)
All:
+ lateral fusiform gyrus
+ inferior parietal cortex
+ lateral prefrontal cortex

Eating Disordered:
- weaker activity in occipitotemporal cortex and parietal cortex
- activity in thalamus and putamen in response to normal- and overweight, but not underweight body shapes

Healthy:
- activity in right dorsal anterior cingulate cortex in response to overweight bodies
- activity in the anterior ventrolateral prefrontal cortex in response to underweight bodies

Discussion
+ Less activity in the occipitotemporal and parietal regions → body-image processing brain circuits dysfunctional
+ Trends in subjective ratings were not reflected in the fMRI data
+ No support for hypothesis that overweight images would lead to activation in brain areas associated with emotions, such as the amygdala and insula

Problems
+ Line drawings might not have been particularly evocative