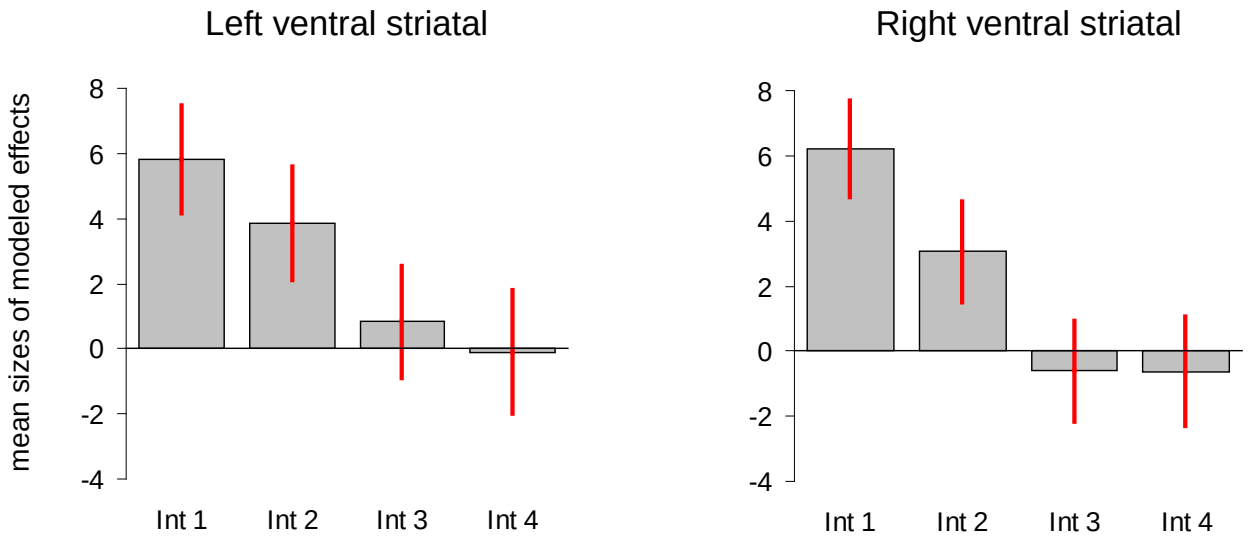
SUPPLEMENTAL DATA

Supplemental Results

Evaluation of sizes of modelled effects in the ventral striatal ROI: Bar graphs in Figure S1 demonstrate the height of effect of four different group-by-stimulus interactions in the left and right ventral striatum averaged over significant voxels derived from an F-contrast on these interaction effects (see Results section). The first interaction (Int 1) tested on group differences (control women vs. anorexia nervosa patients) contrasting neural activations on underweight against normal-weight stimuli obtained under the "feel" task instruction. The second contrast (Int 2) tested on the same interaction for neural activations obtained under the "weight" task instruction. The third interaction contrast (Int 3) tested on group differences when contrasting activations on overweight against normal-weight stimuli during the "feel" task. The fourth contrast (Int 4) tested on the same interaction during the "weight" task.

SF1. Mean effect sizes for group-by-stimulus interactions



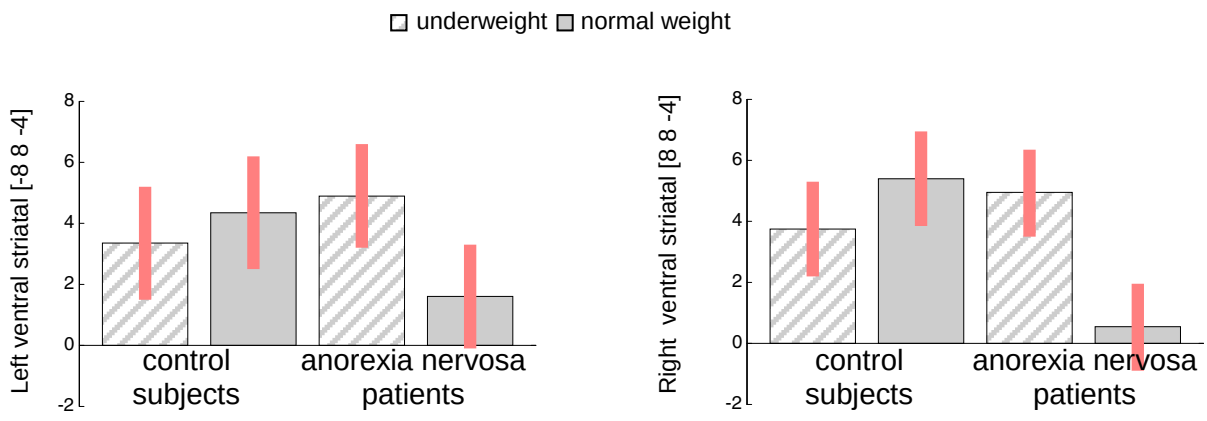
Evaluation of possibly confounding group-by-stimulus interactions due medicated patients: In order to exclude effects due to medication the entire analysis was re-run omitting the five medicated patients along with their matched controls. Due to reduced sample-size the group-by-stimulus interaction of interest was thresholded at a lower level of nominal alpha ($p < 0.05$, uncorrected) in the ventral striatal ROI. A single tailed t-contrast revealed a significant effect (Table S1, Figure S2). Bar graphs depict parameter estimates of BOLD responses at the same locations as for the entire sample (Figure 3). Exclusion of the five medicated patients and their relative controls reliably produced the same results as obtained for the entire sample.

ST1. Summary statistics of the significant group-by-stimulus (underweight, normal-weight) interaction in ventral striatal ROI excluding the five medicated patients and their matched controls.

Anatomical region	L/R	cluster-size	x	y	z	z-score	p[a]
Ventral striatum	R	165	8	10	-4	3.45	0.032
Ventral striatum	L	113	-10	8	0	2.43	0.054

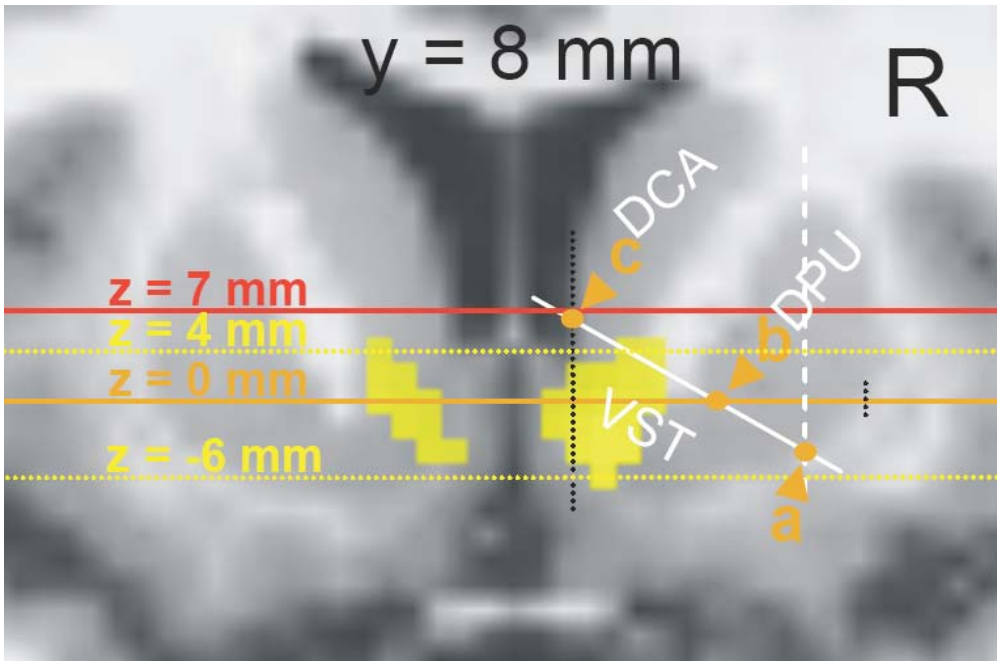
[a] p values refer to false discovery error correction.

SF2. Parameter estimates of BOLD response of group-by-stimulus interaction of interest excluding medicated patients and matched controls



Evaluation of the observed group-by-stimulus interaction in the ventral striatum: We assessed the location of the observed group-by-stimulus interaction within the ventral striatum with a delineation procedure proposed by Mawlawi et al. (2002). The white line through points a to c in figure SF3 separates between the dorsal and ventral striatum. Almost all significant voxels belong to the ventral striatum.

SF3. Group-by-stimulus interaction of interest superimposed on a zoomed coronal T1-weighted slice (VST = ventral striatum; DCA = dorsal caudate nucleus; DPU = dorsal putamen).



Procedure. The Mawlawi procedure refers to anatomical criteria as defined in Mai et al. (1987) and expects slice orientation through the anatomical anterior and posterior commissures. Accordingly our results in MNI space were translated -4 mm in y-direction and 5 mm in z-direction (Eickhoff et al., 2005). Point a was defined as the intersection of the outer edge of the putamen with a vertical line through the most superior and lateral points of the internal capsule (white dashed line). Location b was defined as the center of the portion of the transaxial anterior-to-posterior commissure plane (solid orange line at z = 0 mm) overlying the striatum. The left and right black dotted lines perpendicular to that line indicate the medial and lateral outer edge of the striatum, respectively. Location c is the internal edge of the caudate on the line connecting a and b. The most superior red line identifies the ventral-dorsal border at z = 7 mm in the caudate (e.g. Postuma & Dagher, 2006).

References:

Eickhoff S, Stephan KE, Mohlberg H, Grefkes C, Fink GR, Amunts K, Zilles K: A new SPM toolbox for combining probabilistic cytoarchitectonic maps and functional imaging data. Neuroimage. 2005; 25: 1325-1335.

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