*Supplementary Table S2*. Neural circuitry among individuals with and without binge-type eating patterns*.*

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| --- | --- | --- | --- | --- | --- |
| **Study** | **Sample** | **Diagnoses** | **Stimuli** | **Task Instructions** | **Findings** |
| Amianto et al. ([2013](#_ENREF_1)) | 44 females (M = 21.9 y) from Italy | BN (n=13)  AN (n=17)  HC (n=14) | Voxel-based morphometry study (no stimulus applied) | | **Regional gray matter volumes**  Parietal central lobule, precuneus, insula, putamen: BN > HC  Caudate, thalamus: BN < HC  Fusiform gyrus: BN > AN |
| Amianto et al. ([2013](#_ENREF_2)) | 32 females (M = 23.6 y) from Italy | BN (n=12)  AN-R (n=12)  HC (n=10) | Resting state technique (no stimulus applied) | | **Cerebellar intrinsic connectivity network**  Insula, precuneus: AN > BN > HC  ACC: BN > HC, AN  Temporal pole: BN, AN > HC |
| [Ashworth et al. (2011)](#_ENREF_3) | 28 females (M = 24 y) from the UK | BN (n=12)  HC (n=16) | 1. Trio of face images   -Disgusted, angry, and neutral   1. Trio of rectangles   -Vertical, horizontal | 1. Select the bottom face (out of two possible) that matches the emotion of the top face 2. Select the bottom shape (out of two) that matches the orientation of the top shape | **Disgusted faces (vs. shapes)**  Precuneus: BN < HC  **Angry faces (vs. shapes)**  AMY, Precuneus: BN < HC |
| Balodis et al. ([2013](#_ENREF_4)) | 57 adults (M = 38.9 y) from the US (60% female) | BED+OB (n=19)  OB (n=19)  HC (n=19) | Monetary incentive delay task. Cues signaled potential win or loss:   1. “Win $1” or “Win $5” 2. “Lose $1” or “Lose $5” 3. “Win $0” or “Lose $0” | Participants were told their compensation depended on task performance. For each trial:   1. Anticipation 1 (A1) phase - view cue signaling win or loss of money 2. Anticipation 2 (A2) phase - press button in response to target appearance 3. Outcome (OC) phase - learn if won or lost money and view cumulative earnings | **A2 loss (vs. neutral)**  Insula, ventral striatum, precuneus, AMY, vmPFC, ACC: BED+OB < OB  MFG, cuneus: BED+OB < HC  **OC loss (vs. neutral)**  ACC, insula: BED < HC  NS differences in fronto-striatal regions between BED+OB and OB |
| Frank et al. ([2013](#_ENREF_5)) | 86 females (M = 26.8 y) from the US | BN (n=19)  AN-R (n=19)  Rec-AN-R (n=24)  HC (n=24) | Voxel-based morphometry study (no stimulus applied) | | **Regional gray matter volumes**  mOFC, insula: BN, AN-R, Rec-AN-R > HC  Caudate/putamen: BN < HC, AN-R  Caudate: among BN, negatively correlated with BMI  Putamen: positively correlated with self-reported sensitivity to reward |
| Jarcho et al. ([2015](#_ENREF_6)) | 22 girls (M = 15.8 y) from the US | LOC (n=10)  HC (n=12) | 60 photographs of female peers. Participants evaluated their peers   1. Select 30 high value peers you are interested in chatting with 2. Indicate 30 peers you are not interested in chatting with | Social feedback from peers:   1. Predict if each peer wants to chat with you 2. Learn if peers do or do not want to chat with you (positive or negative feedback) | **Negative (vs. positive) feedback**  LOC vmPFC, dlPFC: negative < positive  HC vmPFC: negative > positive  HC dlPFC: negative = positive  **Negative (vs. positive) feedback from high value peers**  Among LOC only, greater FFA activity positively associated with overall energy intake during subsequent test meal |
| Joos et al. ([2010](#_ENREF_7)) | 47 females (M = 25.5 y) from Germany | BN (n=17)  AN-R (n=12)  HC (n=18) | Voxel-based morphometry study (no stimulus applied) | | **Regional gray matter volumes**  NS differences between BN and HC  ACC: HC > AN  Inferior parietal cortex: among BN and AN-R, positive correlation with self-reported drive for thinness |
| [Miyake et al. (2010)](#_ENREF_9) | 48 females (M = 26.2 y) from Japan | BN (n=12)  AN-R (n=12)  AN-BP (n=12)  HC (n=12) | 1. Negative word sets   -Body image (e.g., obesity)  -Non-specific image (e.g., alone)   1. Neutral word sets (e.g., path) | 1. Select the most negative word based on personal knowledge and experience 2. Select the most neutral word | **Negative body image (vs. neutral)**  AMY, IPL: AN-R, AN-BP > BN, HC  vmPFC: BN, AN-BP > AN-R, HC  NS group differences for negative non-specific image (vs. neutral) |
| [Miyake et al. (2010)](#_ENREF_8) | 44 females (M = 25.4 y) from Japan | BN (n=11)  AN-R (n=11)  AN-BP (n=11)  HC (n=11) | Photographs of self and other   1. Distorted “fat” images 2. Original undistorted images 3. Distorted “thin” images | Select the more unpleasant image (from an image pair;  e.g., “fat” and real images) | **Self: “fat” image (vs. real)**  AMY: BN < AN-R, AN-BP, HC  mPFC, dlPFC: BN, AN-R < AN-BP, HC  **Other: “fat” image (vs. real)**  AMY: BN, AN-BP < AN-R  NS group differences for self- or other-“thin” images (vs. real) |
| [Pringle et al. (2011)](#_ENREF_10) | 27 females (M = 26.2 y) from the UK | BN (n=11)  HC (n=16) | Personality characteristic words   1. ED-related self-beliefs (e.g., evil) 2. DEP-related self-beliefs (e.g., numb) | Rate each word as “me” if it applies to you and can be used to describe you or “not me” if the word does not apply or describe you | **ED words (vs. low level baseline)**  AMY, precuneus, occipital cortex:  BN < HC  **DEP words (vs. low level baseline)**  AMY, IPL, precuneus: BN < HC  NS group differences for ED (vs. DEP) |
| Schafer et al. ([2010](#_ENREF_11)) | 50 females (M= 23.1 y) from Germany | BN-P (n=14)  BED (n=17)  HC (n=19) | Voxel-based morphometry study (no stimuli used) | | **Regional gray matter volumes**  mOFC: BN-P > BED > HC  lOFC and dorsal striatum: BN-P > BED  ventral striatum: BN-P > BED, HC  ACC: BED > HC  Insula: NS group differences  Among BN-P, volume of ventral and dorsal striatum negatively correlated with BMI |
| [Spangler and Allen (2012)](#_ENREF_12) | 24 females (18-38 y, mean unknown) from the US | BN (n=12)  HC (n=12) | 1. Computer-generated full-body images of women   -“Fat” images (BMI = 31)  -“Thin” images (BMI = 18)   1. Control: scrambled image derived from the test stimuli | 1. “Imagine that someone is comparing your body to the body of the woman you see in the picture…” 2. Attend to the images | **“Fat” body images (vs. “thin” and vs. control)**  ACC: BN > HC  NS group differences for “thin” body image (vs. control) |
| [Uher et al. (2004)](#_ENREF_13) | 45 females (M = 27.4 y) from the UK | BN (n=10)  AN (n=16)  HC (n=19) | 1. Aversive emotional photographs 2. Neutral photographs matched for color and visual complexity | Look at each image and think about how it makes you feel | **Aversive images (vs. neutral)**  Cerebellum: BN, AN < HC  IPL, occipital cortex: BN > AN, HC |
| [Uher et al. (2005)](#_ENREF_14) | 40 females (M = 26.9 y) from the UK | BN (n=9)  AN (n=13)  HC (n=18) | 1. Line drawings of female bodies   -Underweight (BMI < 17.5)  -Normal-weight (BMI = 20-25)  -Overweight (BMI > 27.5)   1. Line drawings of houses that varied by style and size | Look at each drawing and think how acceptable such a house or body-shape would be for you | **Body image (vs. house)**  FFG: AN < BN < HC  - Negative correlation with aversion  rating in AN, BN  IFJ, SomC-A: BN, HC > AN  mPFC: positive correlation with aversion rating in AN, BN  **Normal (vs. underweight) body images**  AMY, PHG: positively correlation with aversion rating in AN, BN |
| [Van den Eynde et al. (2013)](#_ENREF_15) | 44 females (M = 27.6 y) from the UK | BN (n=21)  HC (n=23) | 1. “Thin” female body (minus head) images (BMI = 18.5) 2. Interior design images matched for visual complexity | 1. “Compare your own body with the bodies in the pictures” 2. “Compare the furniture with that in your house” | **Body image (vs. low level baseline)**  Insula, cerebellum: BN > HC  FFG, precuneus, occipital cortex: BN < HC  **Body image (vs. non-body images)**  FFG, MTG: BN < HC |
| [Vocks et al. (2010)](#_ENREF_16) | 55 females (M = 27.7 y) from Germany | BN (n=15)  AN (n=13)  HC (n=27) | Photographs of body (minus head) from 16 different perspectives   1. Self in a bikini 2. Other “thin” woman in a bikini | Look at the picture shown and do not close your eyes | **Self image (vs. low level baseline)**  ITG: BN < AN, HC  IPL: AN < BN < HC  MTG: BN, AN < HC  **Other image (vs. low level baseline)**  AMY, MTG, ITG, STG: AN > BN, HC  IPL, SomC-A: BN < AN, HC  SomC-P, PHG: BN, AN > HC |
| Voon et al. ([2014](#_ENREF_17)) | 40 adults (M = 44.3 y) from the UK  (53% female) | BED-OB (n=20)  HC-OB (n=20) | Voxel-based morphometry study (no stimuli applied) | | **Regional gray matter volumes**  mOFC, lOFC, caudate, ventral striatum: BED-OB < HC-OB |

*Abbreviations*: AN-BP = anorexia nervosa, binge/purge subtype; AN-R = anorexia nervosa, restricting subtype; BN = bulimia nervosa; BN-P = bulimia nervosa, purge subtype; BMI = body mass index; Rec-AN-R = recovered from anorexia nervosa, restricting subtype; AMY = amygdala; dlPFC = dorsolateral prefrontal cortex; FFG = fusiform gyrus; IFG = inferior frontal gyrus; IPL = inferior parietal lobule; ITG = inferior temporal gyrus; lOFC = lateral orbitofrontal cortex; MFG = middle frontal gyrus; mOFC = medial orbitofrontal cortex; mPFC = medial prefrontal cortex; MTG = medial temporal gyrus; OB = obese; PHG = parahippocampal gyrus; SomC-A = somatosensory cortex, association area; SomC-P = somatosensory cortex, primary region; STG = superior temporal gyrus; vmPFC = ventromedial prefrontal cortex

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