Supplementary Material

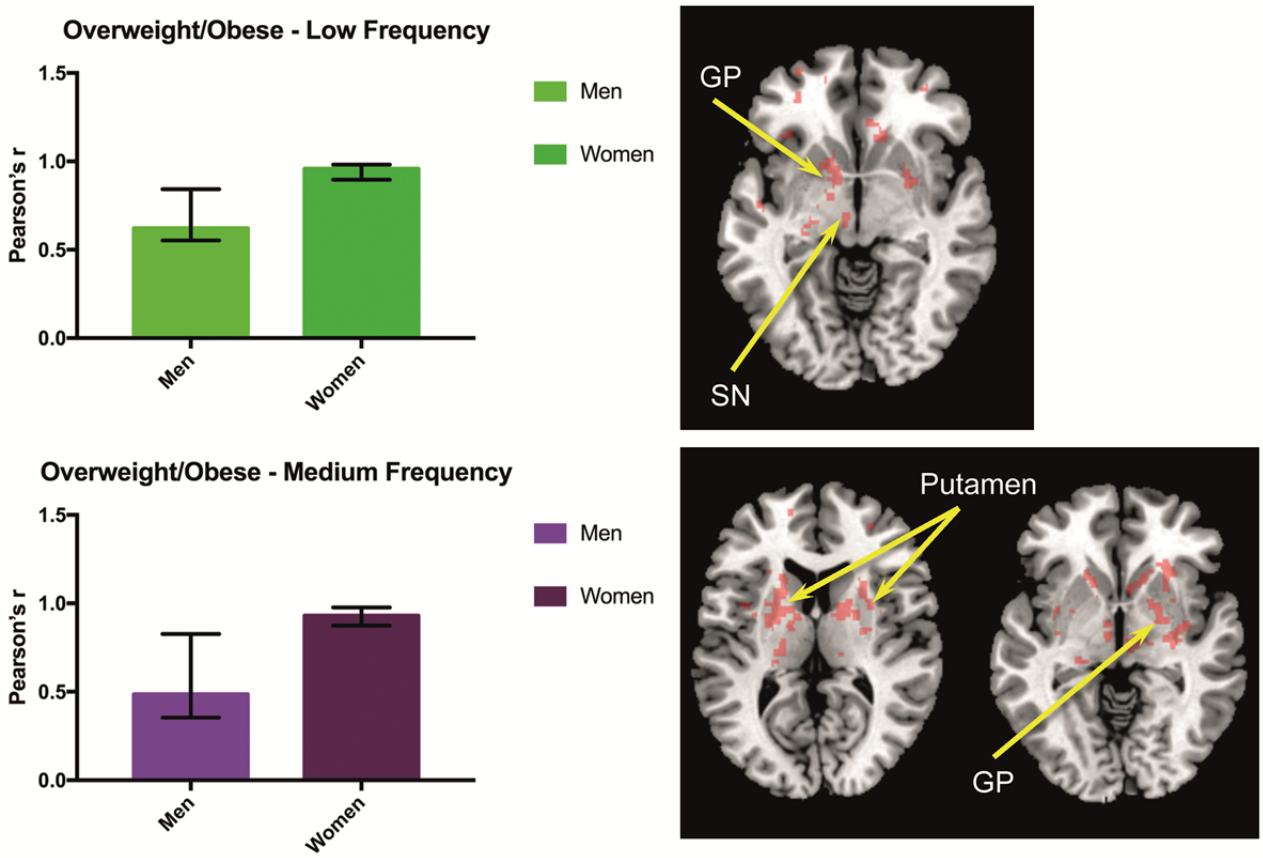
Supplementary Analyses: BMI-related intrinsic activity/connectivity in men and women

Overweight/Obese BMI range.

A) In the slow-5 (low frequency) PLS analysis, the first latent variable (accounting for 65.0% of the cross-block correlation, p=0.044) reflected a pattern similar to that obtained in the full sample analysis (sex similarities in the relationship between BMI and slow-5 activity, with a stronger relationship in women), which was expressed in a set of regions that overlapped the full-sample regions of interest (ROIs) (**Figure S1**).

B) In the slow-4 (medium frequency) PLS analysis, the first latent variable (accounting for 67.1% of the cross-block correlation, p=0.016) reflected a pattern somewhat similar to that obtained in the full sample analysis (stronger relationship between BMI and slow-4 activity in women than in men), which was expressed in a set of regions that overlapped the full-sample ROIs (**Figure S1**).

Figure S1: BMI-related intrinsic activity/connectivity in men and women with BMI in the overweight/obese range



Whole-brain frequency power partial least squares (PLS) analyses were performed in a subset of participants with BMI in the overweight/obese range.

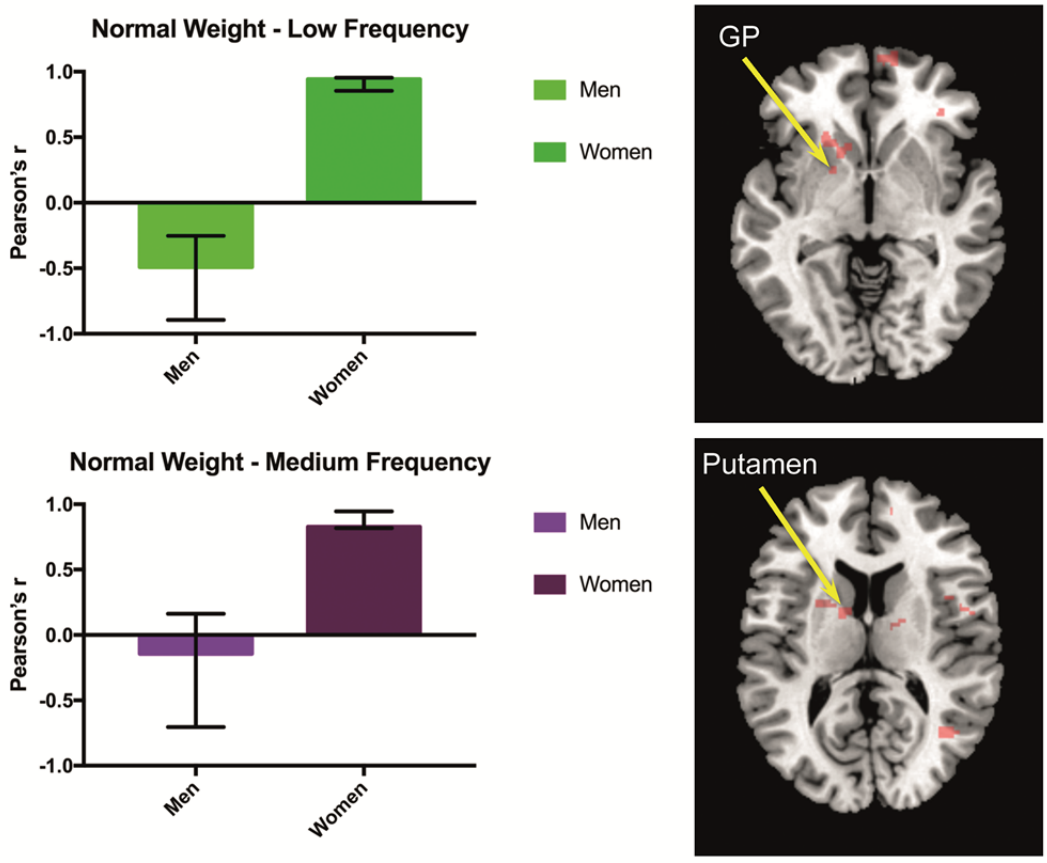
A) Slow-5 (low frequency); ROIs: globus palidus (GP), substantia nigra (SN)
B) Slow-4 (medium frequency); ROIs: globus palidus (GP), putamen

Normal BMI range.

A) In the slow-5 (low frequency) PLS analysis, none of the latent variables reached significance; however, the second latent variable (accounting for 38.5% of the cross-block correlation, p=0.715) reflected a pattern partially similar to that obtained in the full sample analysis (more positive relationship between BMI and slow-5 activity in women than in men), which was expressed in a set of regions that overlapped the full-sample regions of interest (ROIs) (**Figure S2**).

B) In the slow-4 (medium frequency) PLS analysis, none of the latent variables reached significance; however, the second latent variable (accounting for 43.9% of the cross-block correlation, p=0.152) reflected a pattern similar to that obtained in the full sample analysis (a relationship between BMI and slow-4 activity in women, but not in men), which was expressed in a set of regions that overlapped the full-sample ROIs (**Figure S2**).

Figure S2: BMI-related intrinsic activity/connectivity in men and women with BMI in the normal range



Whole-brain frequency power partial least squares (PLS) analyses were performed in a subset of participants with BMI in the normal range.

A) Slow-5 (low frequency); ROIs: globus palidus (GP)
B) Slow-4 (medium frequency); ROIs: putamen