Supplementary material

Title: Associations of device-measured physical activity and sedentary time with neural responses to visual food cues in adults: a functional magnetic resonance imaging study

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Supplementary results

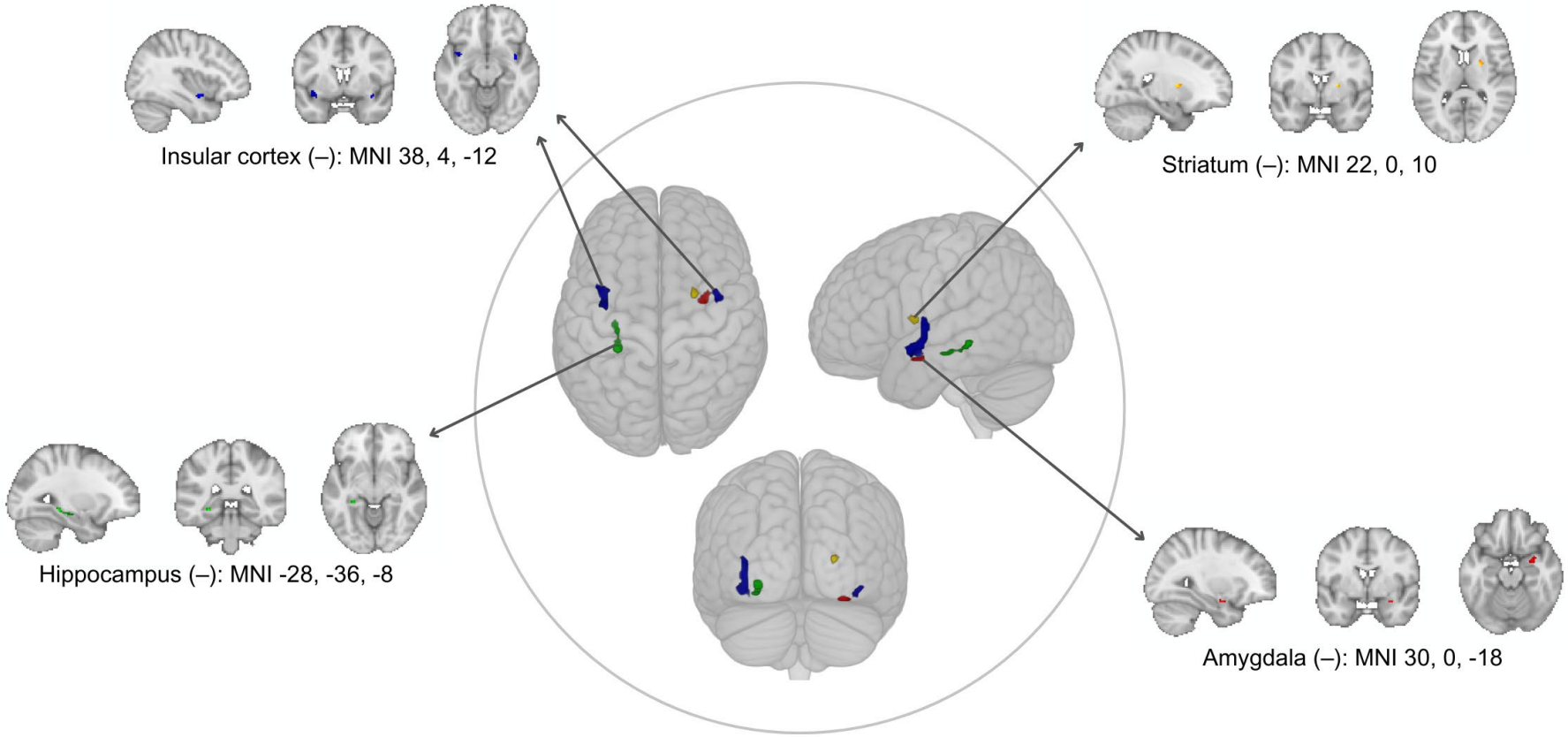
Supplementary Table 1. Regions of interest sensitivity analysis showing associations between device-measured moderate-to-vigorous intensity physical activity (MV-PA) and the blood-oxygen-level-dependent signal change in response to visual food cues.

Model	Contrast	Direction	Brain region	Hemisphere	No. of voxels	MNI brain coordinates			*z* value
						x	y	z	
MV-PA									
Model 3	Food (HED + LED) > non-food	Negative	Insular cortex (posterior)	Left	36	-36	-4	-8	4.77
		Negative	Striatum (putamen)	Right	32	22	0	10	5.61
	HED > non-food	No activated clusters after correction for multiple comparisons							
	LED > non-food	Negative	Insular cortex (posterior)	Left	88	-40	6	-12	4.74
		Negative	Hippocampus	Left	36	-28	-36	-8	5.11
		Negative	Insular cortex (posterior)	Right	21	38	0	-12	5.35
		Negative	Amygdala	Right	17	30	0	-18	5.07
		Negative	Striatum (putamen)	Right	15	22	0	10	5.31

Regions of interest analysis performed using a non-parametric permutation approach in Randomise applying threshold-free cluster enhancement (TFCE), a family-wise error corrected P value of $P < 0.05$, and a Bonferroni correction for multiple ROI comparisons (n = 50). Model 3 includes adjustment for age, sex, BMI, device weartime and inactivity derived from the wrist-worn ActiGraph wGT3X-BT device.

Results represent the direction of association, brain region identified from Harvard-Oxford cortical or subcortical probabilistic atlases, right or left brain hemisphere, the number of voxels in each cluster (2.2 mm^3 ; minimum cluster size of 10 voxels), and the coordinates in MNI space and z value for the peak statistical voxel.

MNI, Montreal Neurological Institute; HED, high and very high-energy-density foods; LED, very low and low-energy density foods.



Supplementary Figure 1. Sensitivity analysis (model 3) showing negative (–) associations between device-measured moderate-to-vigorous intensity physical activity (MV-PA) and the blood-oxygen-level-dependent (BOLD) signal change in response to LED vs non-food cues (n = 50 men and women). Clusters of activation were identified in pre-specified regions of interest. Models were adjusted for age, sex, BMI, device

weartime and inactivity derived from the wrist-worn ActiGraph wGT3X-BT device. Brain maps presented in neurological convention with the left hemisphere shown on the left. LED, very low- and low-energy density foods; MNI, Montreal Neurological Institute.