**Short-term consumption of highly processed diets with varying macronutrient content impairs the sense of smell and brain metabolism in mice**

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# **SUPPLEMENTARY INFORMATION**

**Additional File 1: Figure S1-S5**

**Additional File 2: Table S1. Raw behavioral scores.** Sheet 1: Macronutrient composition, formulation, and NOVA classification of the major ingredients of the three different diets used in this study. Sheets 2-4: OIT, RAS and VEL raw behavioral scores for each mouse of the 241 mice exposed to odorants; Each mouse (one per cell) exposed to a specific odorant/diet combination was scored on three different behavioral parameters, so the same excel cell position across the three OIT, RAS and VEL tabs provides behavioral scores for the same mouse.

**Additional File 3: Table S2. Air-phased electro-olfactogram (EOG) recordings, gene expression (RNA-seq), differential expression calling and functional annotation in WOM tissues exposed to different diets.** Sheet1: EOG recordings in response to odorants for individual mice, recorded in WOM of mice fed CHOW, hpCTR or hpHFD. Sheet 2: Normalized gene expression levels (median of ratios method, DESeq2) of WOM RNA-seq data. Sheet 3: Differential gene expression analysis list (output from DESeq2) comparing CHOW, hpCTR and hpHFD pairwise performed on normalized expression data. Sheet 4-6: Gene Ontology overrepresentation analysis results (output from enrichGO) for the DEGs (|log2(FC)|>1, p-adj<0.05)

**Additional File 4: Table S3. Functional annotation of DEGs from various brain regions.** Sheet 1: Normalized gene expression levels (median of ratios method, DESeq2) from RNA-seq of various brain regions of mice exposed to different diets. Sheet 2-11: Gene Ontology overrepresentation analysis results (output from enrichGO, clusterProfiler) for the DEGs (|log2(FC)|>1, p-adj<0.05) identified from the pairwise diet comparisons in various brain regions.

**Additional File 5: Table S4. Body weight curves and adipose tissue weight.** Sheet 1: Body weight (g) measured at different times (weeks). Sheet 2: Glucose tolerance curves (GTT) for animals on a CHOW, hpCTR or hpHFD right before glucose administration (t=0) and 15, 30, 60, and 120 min after an oral glucose administration. Sheet 3: Adipose tissues weight (g) at week 3. Sheet 4: SUVr values for OB, CBL, BRN and BST of animals on a CHOW, hpCTR or hpHFD.

**Additional File 6: Table S5. Mitochondrial measures and association of respiratory parameters with brain glucose metabolism.** Sheet 1-3: Mitochondrial measures for OB, CBL, BRN and BST of animals on a CHOW, hpCTR or hpHFD.