

Título: Your offspring is what you eat: The impact of maternal CAF diet on the epigenetic control of dopaminergic-related genes during perinatal period.

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Dopamine is a neurotransmitter crucial for motor, motivational, and reward-related functions of the central nervous system. Our aim was to determine the effect of palatable maternal diet on the transcriptional regulation of genes involved in dopaminergic pathways during perinatal period in the offspring. Wistar female rats received a diet composed of standard chow (CON) and/or cafeteria junk-food (CAF) from weaning and during 120 days (N=10/group). After mating, dams were maintained on their respective diets. Female offspring from CON and CAF dams were sacrificed on embryonic day 21 (E21) and postnatal day 10 (PND10) (N=16/group). This experimental model allowed us to study the individual and combined effects of age (E21 vs. PND10) and maternal diet (CON vs. CAF). Using micropunch techniques, ventral tegmental area (VTA) and accumbens nucleus (NAc) were isolated from offspring's brains. Bioinformatic analysis of the promoter regions, mRNA quantification and methylation studies were done (N=8/group). Each sample was quantified in duplicate. Our results showed an increase in mRNA expression of tyrosine-hydroxylase (TH), dopamine receptor (DRD)1 and ghrelin receptor (GHSR) from E21 to PND10 in the offspring of CON-fed dams.