Título: Progressive effects of cafeteria diet on the expression of neuropeptides in hypothalamic nuclei involved in food intake control.
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We studied the effects of cafeteria diet (CAF) intake from weaning on mRNA levels and DNA methylation state of feeding-related neuropeptides and hormone receptors in individual hypothalamic nuclei at different feeding periods. Four weeks of CAF (short-term) increased energy intake and adiposity, without affecting neuropeptides' expression. Eleven weeks of CAF (medium-term) increased energy intake, adiposity, leptinemia, and body weight, with an orexigenic response of the lateral hypothalamus, paraventricular and ventromedial nuclei, given by upregulation of Orexins, AgRP, and NPY opposed by an anorectic signal of the arcuate nucleus, which displayed a higher POMC expression. The changes in neuropeptidic mRNA levels were related to epigenetic modifications in their promoter regions. Metabolic and molecular changes were intensified after 20 weeks of diet (long-term). The alterations in these hypothalamic brain nuclei could add information about their differential role in food intake control, and how their action is disrupted during the development of obesity.