

EFFECT OF DIETARY FATTY ACIDS IN PREGNANCY AND LACTATION ON ADIPOSITY AND BLOOD LIPID PROFILE OF ADULT OFFSPRING RATS

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Several studies suggest that the maternal dietary composition during the perinatal period has strong influence in the adult offspring life, including development and propensity to chronic diseases. Here we examined the effects of five isoenergetic diets of differing fat composition, offered during pregnancy and lactation, on adiposity and blood lipid profile of the adult offspring rats (120 days). Wistar female rats received diets with different lipid sources (soy oil [SO], palm oil [PO], partially hydrogenated soil oil [PHSO], canola oil [CO] and fish oil [FO]) during pregnancy and lactation (0 to 21 days). Post-weaning male pups were fed on a SO-based diet until day 120. Despite all the groups showed a similar food intake, SO differed from the others showing a lower body weight. Accordingly, SO presented the lower carcass fat content along with PO group. Also, PO and FO showed the higher protein contents as compared to SO group. Analysis of blood lipids showed that PO had the lowest triacylglycerol plasma concentration while CO and FO had the lowest free fatty acid concentrations. No significant differences were observed in plasma cholesterol among the groups. We conclude that the maternal dietary lipid composition may determine metabolic changes, affecting the body mass composition as well as the blood lipid profile of the adult offspring.