

عنوان مقاله:

Extra virgin olive oil in maternal diet increases osteogenic genes expression, but high amounts have deleterious effects on bones in mice offspring at adolescence

محل انتشار:

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خلاصه مقاله:

Objective(s): Maternal high-fat diet has been shown to have deleterious effects on the offspring bones. However, there is no study to assess the effects of type and amount of maternal dietary oil in an isocaloric diet, with focus on extra virgin olive oil (EVOO). The objective of the current study was to test the hypothesis that type of maternal dietary oil has more effects than its amount in an isocaloric diet during gestation and lactation on bone genes expression in offspring in adolescence. Materials and Methods: Virgin female C57BL/6 mice were impregnated and fed either the AIN 93G diet (received 16% of calories as soybean oil, as a control diet, or EVOO) or a high fat AIN 93G diet (received 45% of calories as soybean oil or EVOO) from the time of vaginal plug confirmation until offspring's weaning. Results: After adjusting for the amount of oils, osteoprotegerin/ receptor activator of nuclear factor NF- κ B ligand (OPG/RANK-L) and OPG expressions were 6.1- and 2.8-folds higher in offspring born to EVOO compared with soybean oil-fed

mothers. OPG, beta-catenin, and OPG/RANK-L expression were ۸۸%, ۹۴%, and ۷۰% lower in offspring born to the ۴۵% oil-fed mothers compared with the ۱۶% group. In contrast, peroxisome proliferator-activated receptor gamma-۲ (PPAR γ ۲) gene expression was higher in the ۴۵% oil group, adjusted for the types of oil. Conclusion: Maternal EVOO consumption, but not soybean oil increased osteoblastic gene expression, and high amounts of both oils decreased .osteoblastic and increased adipogenic genes expression in adolescent offspring

کلمات کلیدی:

Dietary oil, Fetal programming, gestation, Lactation, Mouse, Olive oil, Osteoblastogenesis

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