

DIFFERENTIAL miRNA EXPRESSION IN OFFSPRING EXPOSED TO A MATERNAL OBESOGENIC ENVIRONMENT

An emerging field in obesity research is investigating how exposure to a maternal obesogenic environment in utero may predispose the fetus to developing these conditions later in life. In animal models, fetal exposure to a high fat diet has been shown to have a causal relationship in the development of obesity, metabolic-associated fatty liver disease (MAFLD), high blood pressure, dyslipidemia, cardiovascular impairment, insulin resistance, hyperglycemia, systemic inflammation, and oxidative stress. Fetal cardiometabolic risk factors associated with maternal obesity and high fat diet are thought to be due in part to epigenetic modifications to genes involved in stem cell differentiation, metabolism, and inflammation. Several studies have explored miRNA expression patterns in tissues from offspring exposed to a maternal obesogenic environment. In this literature review, we discussed differential miRNA expression in offspring exposed to maternal obesity in various tissues, that when dysregulated, propagate metabolic disease. We also discussed the known roles of these miRNAs in the context of inflammation, metabolism, and stem cell fate.