

# Pregnant mothers' diet linked to baby's obesity

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Pregnant and lactating rats fed on a diet of hydrogenated fat during pregnancy and lactation had babies who were fatter than rats fed a normal diet, according to research published in *Lipids in Health and Disease*. The unhealthy diet has deleterious consequences even after the fats were removed from the diet and has links to insulin production.

“We know that foetal growth is influenced by the mother’s nutritional status,” explained Brazilian nutritionist Luciana Pisani. “The nutritional conditions during pregnancy has a major role in the metabolic and hormonal interactions between the mother’s body, placenta and foetus. To date only a few studies have looked at the effects on trans fatty acids during pregnancy and lactation on the metabolism of offspring in adulthood. We found that the fatty content of the babies’ bodies increased when the mothers were fed the hydrogenated fat rich diet and this could be traced to the gene expression of adipokines.”

In an investigation to examine whether feeding pregnant and lactating rats hydrogenised fats rich in trans fatty acids, increased the fat content in carcass, the researchers found that their metabolic rate dropped dramatically. Interestingly young rats that were fed a normal diet after they were born ate less and weighed less even though their mothers had been eating the trans fatty acids while pregnant. The gene expression of adipokines was also examined in relation to insulin production.

The offspring were weighed weekly and exposure to the trans-fatty acid enriched diet after weaning led to a 40% increase in body fat content for

the young rats. Rats whose mothers were fed the trans fatty acids and continued to eat the fats into adulthood had the highest metabolic efficiency. The same rats increased their insulin production.

Pisani continued, “Fats play a fundamental role in foetal development and changes in dietary fatty acids has important implications for foetal and postnatal development. Heavy ingestion of very hydrogenated fats rich in trans fatty acids increases risk of cardiovascular diseases and reduces insulin sensitivity and so leads to type 2 diabetes. We need to investigate this further as this has important implications for people’s own diets, especially pregnant women.”

Source: BioMed Central

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