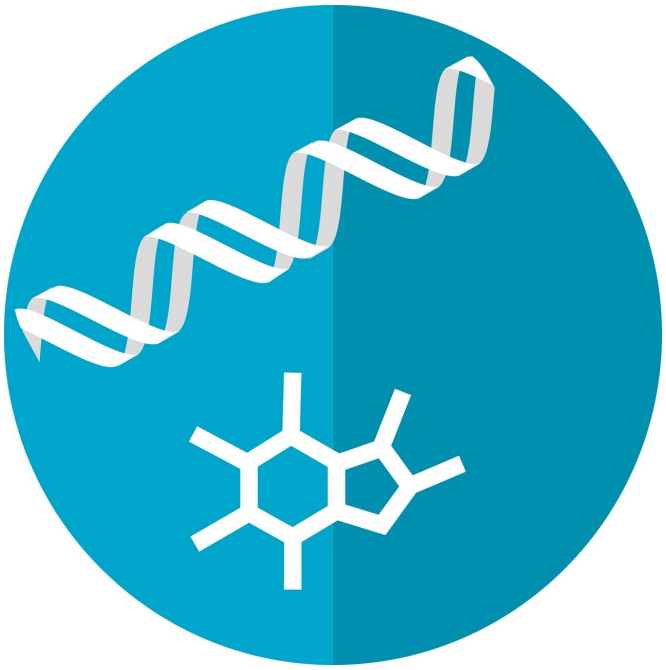
Vitamin B12 deficiency linked to obesity during pregnancy

12 November 2019



Credit: CC0 Public Domain

Vitamin B12 deficiency impairs fat metabolism and may be associated with obesity during pregnancy, according to findings presented at the Society for Endocrinology annual conference. Pregnant women with low levels of vitamin B12 had metabolic markers indicative of increased fat production and reduced breakdown, which suggests that low vitamin B12 levels could predispose pregnant women to obesity. These findings highlight the importance for pregnant women to consume a diet rich in vitamin B12 to help prevent obesity and its related adverse health complications in the long term.

Vitamin B12 is a micronutrient found in seafood, meat and dairy products that is essential for many metabolic reactions that keep our bodies functioning normally. Diets high in carbohydrates and highly processed foods provide poor nutrition and can lead to vitamin B12 deficiency. Approximately 25% of pregnant women worldwide are vitamin B12 deficient, as an even higher intake is needed for growth and development of the baby. Previous studies suggest B12 deficiency increases the risk for metabolic complications such as obesity or diabetes but the underlying mechanisms affecting fat metabolism remain poorly understood.

In this study, Jinous Samavat from the University of Warwick Medical School, investigated how low vitamin B12 levels affect fat cell function in cultured cell samples and in samples taken from pregnant women. Markers of fat metabolism in both lab-grown fat cells, low in vitamin B12, and samples from vitamin B12 deficient pregnant women indicated that fat tissue function was abnormal, with increased fat production, reduced ability to breakdown fat for energy and increased inflammation, which causes further damage.

Jinous Samavat comments, "Taken together, our data indicate that low B12 levels can impair fat cell metabolism, which may lead to increased fat accumulation, impaired fat metabolism and inflammatory damage, all of which predispose to weight gain."

Although these findings suggest how fat metabolism may be impaired in vitamin B12 deficiency, particularly in pregnant women, larger studies are needed to confirm this and further explore the underlying mechanisms, to identify intervention strategies and help prevent obesity. The team now plan to investigate genetic factors that affect fat metabolism and how deficiency in pregnancy may affect the future metabolic health of children.

Samavat says, "Our findings reinforce the need for vitamin B12 supplementation during pregnancy and make a strong case for funding further studies and introducing public health policies, to help tackle obesity."

More information: Abstract P184: Vitamin B12 Deficiency Leads To Fatty Acid Metabolism Dysregulation and Increased pro-inflammatory cytokine production in Human Adipocytes and in Maternal Subcutaneous and Omental Adipose Tissue

Provided by Society for Endocrinology