Essentials of Health

A recent study published in JAMA Pediatrics shows that poor iron status early in pregnancy significantly increases the risk of babies born small for gestational age (SGA).

Depleted maternal iron status early in pregnancy is associated with a higher risk of low birth weight babies

Iron deficiency anemia during early pregnancy has long been linked to low birth-weight, preterm birth, and other health problems. But previous research and advice has been based on hemoglobin (Hb) levels (screening for outright deficiencies or anemia), not on other specific measures of iron deficiency.

In a new study published in the *British Journal of Nutrition*, researchers examined the association between maternal iron status during the first trimester of pregnancy with birth size and preterm birth by using more specific measures of iron deficiency such as serum ferritin, transferrin receptor and their ratio.

Three-hundred sixty-two infants and their mothers were recruited for this study. Biomarkers and iron measurements were analyzed from maternal blood serum samples that had been taken during the first trimester of pregnancy.

Iron depletion during the first trimester was linked to a higher incidence of SGA. The association was even stronger when Hb measurements were included in the assessment. Although there was no evidence of a link between iron insufficiency and preterm birth, for every 10 g/l increase in the mother's Hb level during the first half of pregnancy there was a 30% lower risk of SGA. Hb levels below 110 g/l were associated with a 300% increase in SGA risk. Contrary to other research, Hb levels in the second half of pregnancy were not associated with SGA risk.

The results of the present study indicate that depleted iron stores in early pregnancy are associated with higher risk of SGA. In some countries iron supplementation is not recommended during pregnancy except in the case of anemia. Based on the results of this study, researchers suggest that all women should be screened for iron deficiency early in pregnancy using more specific measurements, and should be offered more personal and helpful advice on improving iron status through diet and supplements.

Nisreen A. Alwan, Janet E. Cade, Harry J. McArdle, Darren C. Greenwood, Helen E. Hayes and Nigel A. B. Simpson. Maternal iron status in early pregnancy and birth outcomes: insights from the Baby's Vascular health and Iron in Pregnancy study. British Journal of Nutrition, available on CJO2015. doi:10.1017/S0007114515001166.