

Babies of obese mothers at risk for iron deficiency, study finds

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A new study has found that obese women are more likely to have babies with lower levels of iron, a mineral that is crucial for nervous system development in the early stages of life.

The cause may be the low-grade, [chronic inflammation](#) that is associated with obesity.

Inflammation, an abnormal immune response to extra fat in the body, raises levels of hepcidin, a hormone that helps balance [iron levels](#). Obese people tend to make too much of it and also tend to have less iron in their blood.

This study, conducted by researchers at the Jean Mayer USDA Human Nutrition Research Center on Aging (HNRCA) at Tufts and the Mother Infant Research Institute at Tufts Medical Center, found that high levels of hepcidin also appear to interfere with the transfer of iron from mother to fetus.

"When there is excess hepcidin in a cell, it binds to and inhibits the function of ferroportin, the protein that allows iron to pass through the cell membrane and into the bloodstream," explains Professor Simin Nikbin Meydani, director of the HNRCA and its Nutritional Immunology Laboratory, who was senior author. Maria Carlota Dao, N10, a doctoral student in the lab, and Sarbattama Sen, an assistant professor at Tufts School of Medicine, were first authors of the study, published in the *Journal of Perinatology*.

The study looked at 30 [pregnant women](#), half of them obese. The researchers checked iron and hepcidin levels of the mothers during their second trimester and measured the iron status of the newborns through their [umbilical cord blood](#). As expected, the [obese women](#) had markers of inflammation and higher levels of hepcidin, while their newborns showed lower levels of iron than the babies of the normal-weight women.

Children born with iron deficiency are at a greater

risk for delays in motor and cognitive development. But the authors stress that more research is needed before obese pregnant women consider changing their iron intake. The American Congress of Obstetricians and Gynecologists recommends pregnant women consume 27 milligrams of [iron](#) daily.

Provided by Tufts University

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