Obesity - It Must Be Mom's Fault

Malcolm Ritter, AP

When Kathy Perusse had weight-loss surgery and shed 120 pounds, she may have done more than make her own life easier. She went on to have two daughters, and she may have boosted their chances of avoiding becoming obese, like her two older children are.

That's the implication of research suggesting that something in an obese woman's womb can program her fetus toward becoming a fat child and adult. It's not about simply passing along genes that promote obesity; it's some sort of still-mysterious signal.

The idea has only recently entered conversations between doctors and female patients, and scientists are scrambling to track down a biological explanation. That knowledge, in turn, may provide new ways to block obesity from crossing generations.

While there's some disagreement on how important the womb signal is, “the evidence is building and building that it is a substantial issue,” said Dr. Matthew Gillman of Harvard Medical School, who studies prevention of obesity. Others agree.

Dr. Rudy Leibel, an obesity expert at Columbia University, says he doubts it plays a huge role, but still believes it's worth studying. If scientists can uncover its biological underpinnings, he said, they may be able to use that knowledge to prevent or treat obesity from other causes.

Perusse, 39, of Three Rivers, Quebec, knows the effects of being very fat. Before her weight-loss surgery in 1995, she packed 284 pounds on her 5’ 2” frame. Now, although she's still overweight, those limitations are history.

But her older children struggle with their weight. At 5’ 3” and 300 pounds, her 22-year-old daughter can't bathe her own two children. Her 16-year-old son weighs 230 pounds and stands 5’ 6”. They were born before she had the weight-loss surgery. Her two younger daughters, ages 4 and 7, came along afterward. Their weights are normal so far, though Perusse said her older children weren't overweight at those ages either. So she's using diet and exercise to try to protect them against what she called rotten genes, including those from their 400-pound father. She isn't optimistic.

But Dr. John Kral of the SUNY Downstate Medical Center in New York says his research suggests that obese women who lose weight before pregnancy may be helping the next generation keep off excess pounds — even if fat-promoting genes run in the family.

With researchers at Laval Hospital in Quebec, Kral has studied children of severely obese women who were born before or after their mother's weight-loss surgery. They found that, in comparison to children born before surgery, those born afterward were far less likely to be severely obese. In addition, those born afterward showed lower levels of blood fats and indicators of future diabetes.

Kral says families typically don't change lifestyle or diet after surgery, so that doesn't explain the outcome. Instead, he says, the surgical bypass operation made the women's bodies less efficient at digesting and absorbing food, and lowered levels of sugar and fat in the blood. That, in turn, would reduce the number of calories delivered to the fetus to levels like those provided by a normal-weight mother, he said.

And the women's shedding of pounds before the pregnancy would also help, he said.
While scientists are still trying to explain just how obesity could be transmitted from the womb, it makes sense that a mother's obesity could affect her children's long-term weight, Waterland said. Cues in early life, including some in the womb, guide the development of a person's brain circuitry for controlling the balance between calories consumed and those burned away, he said. So a signal there could have a long-lasting impact.

Or, maybe such a signal predisposes the child to make more fat-storing cells, others said. Once scientists identify the obesity signal, they may be able to recommend ways to suppress it, perhaps through diet or behavioral strategies.

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