

Why childhood obesity? It's so much more than what kids eat

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University of Illinois scientists from a variety of disciplines have teamed up to examine the factors that contribute to childhood obesity. Why? Because individual researchers have found that the problem is too complicated for any of them to tackle alone.

"Our Strong Kids team members are looking at such diverse factors as genetic predisposition, the effect of breastfeeding, how much TV a child watches, and the neighborhood he lives in, among many others," said Kristen Harrison of the U of I's Division of Nutritional Sciences. "It seems like the answer should be simple, just eat less and exercise more, but when you look at the reasons that kids overeat and burn fewer calories, it turns out there are a lot of them."

Harrison and other Strong Kids team members received funding for a three-year longitudinal study and are applying for support to keep the research going. The scientists have collected and analyzed two generations of data on approximately 400 families, and they are beginning a third wave of data collection. Individual studies, including communication professor Harrison's own examination of preschoolers' television viewing and eating habits, are ongoing.

But the first step was developing a model for studying the problem. The team's Six Cs model will examine the problem of childhood obesity from the following angles: cell, child, clan (or family), community, country and culture. A paper detailing their approach appeared in a recent issue of *Child Development Perspectives*.

"From 30 to 40 percent of the population has a variety of genetic markers that puts them at greater risk for obesity," said professor of nutrition Margarita Teran-Garcia, who is approaching the problem at the cellular level. As a starting point, she is taking saliva samples from preschoolers in the study group to map their genetic susceptibility to obesity.

Child development professor Kelly Bost is looking at the quality of parent-child attachment. "There's evidence that insecure attachment predicts more TV exposure, more consumption of unhealthy foods, and other factors leading to greater obesity," she said.

Another kinesiology and community health professor, Diana Grigsby-Toussaint, is geomapping retail environments in the neighborhoods where the participating families live, looking in detail at what foods are available there. "She's also mapping how much green space is available and how that relates to outdoor play and activity," Harrison said.

Later work will add more puzzle pieces relating to the community and culture components. For example, what's the community BMI and do participants in the study believe that BMI is normal? What's the usual portion size in this culture? Are children urged to take second and third helpings at mealtime?

"Southern U.S. culture, Latin American culture, and the Sam's Club bulk-buying phenomenon are all elements of what we're trying to capture when we talk about culture," Harrison said.

And professor of applied family studies Angela Wiley is collecting data relating to childhood obesity prevention among Mexican immigrant families in the Abriendos-Caminos program so the researchers can compare parallel populations across countries.

"[Childhood obesity](#) is a puzzle, and at different stages, certain variables drop in or out of the picture. Breastfeeding versus formula feeding is a predictor, but it drops out of the model entirely when you get past babyhood. Vending machines in schools are important later in a child's life, but they weren't important before," she added.

There has been very little transdisciplinary effort to map out how all these factors work together, although research shows that no single factor is the most important, Harrison noted.

"We're each looking at different spheres in the model, but we're also looking at potential interactions. That's one of the exciting things we'll get to do as we move forward," she said.

Provided by University of Illinois at Urbana-Champaign

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