Sugar and diabetes risk in children

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Sugar may play a more prominent role in the origins of diabetes than anyone realized, according to new research from Stanford, UC-Berkeley and UC-San Francisco. Countries with more sugar in their food supplies have higher rates of diabetes, independent of sugar's ties to obesity, other parts of the diet, and several economic and demographic factors, the researchers found. Although the study focused on diabetes rates among adults, its results have repercussions for children's health, too.

Thomas Robinson, MD, a professor of pediatrics and of medicine at the School of Medicine, conducts research on childhood obesity and directs the Center for Healthy Weight at Lucile Packard Children's Hospital. The new findings don't prove a cause-and-effect link between sugar consumption and diabetes in individuals, Robinson told pediatrics writer Erin Digitale in a recent interview. But they are still very relevant to a world where type-2 diabetes, once unheard of in kids, is being diagnosed in large numbers of children and teens. Robinson was not involved with the study.

Digitale's interview with him originally appeared Feb. 28 in *Scope*, Stanford's medical blog. The following Q&A has been adapted from that interview.

Q: What do you think the findings mean for children's health?

Robinson: Children's behaviors and environmental exposures have an impact on adult health and disease. This study used sugar data for entire

countries, not individuals. That means that both the children and the adults were living in countries where higher levels of sugars in the food supply were associated with higher rates of diabetes. The potential implications are even stronger for children than adults. Children are being exposed to that environment for a much longer time. This is particularly a problem in developing countries where their food supplies, diets and weights are changing so rapidly.

A number of us here at Stanford focus on what we can do in early life, and throughout the life span, to prevent diseases that have origins in childhood but only first become apparent in adulthood. One can consider our work on obesity, physical activity, sedentary behavior and nutrition in children as really the prevention of diabetes, heart disease, many cancers and other chronic diseases in adults.

Q: What factors has prior research identified as the biggest contributors to the increase in diagnoses of type-2 diabetes in pediatric patients?

Robinson: The biggest contributor identified has been increased weight, but the increasing rate of type-2 diabetes at younger and younger ages probably reflects obesity plus lots of different changes, including changes in our diets, such as more sugars and processed foods, and less physical activity. The CDC now projects that one in three U.S. children will have diabetes in their lifetimes, and it will be one in two among African-American and Latina girls. That is a pretty scary thought. That is why we focus so strongly on helping families improve their diets, increase activity levels and reduce sedentary time. We want to prevent and control excessive weight gain and all the problems that go with it, of which diabetes is just one.

Q: In light of the new findings, do you think that

parents whose children are not obese should be concerned about how sugar consumption could raise their children's diabetes risk?

Robinson: This study doesn't really address the question of what happens at the level of an individual child. However, it is still consistent with the advice we would give now, for both normal-weight and overweight children. I definitely recommend that parents try to reduce sugars in their children's diets. Most parents are not even aware how much sugar their children are eating. Sure, sodas and sweets are the obvious sources, but sugars are also added to seemingly all processed foods, including even bread, pizza and French fries. The added sugars are just empty calories—providing extra calories and no additional nutritional benefit. So I recommend that all parents try at least to reduce the obvious sources of sugary drinks, sweets and desserts.

Q: What can be done to reduce children's access to sugary foods? And are there any signs that we're moving in the right direction on this issue?

Robinson: I think we are seeing evidence of moving in the right direction. Some recent data suggest that sugary drink consumption has dropped slightly. Unfortunately, sugar is in everything. Focusing on sugary drinks is probably the most promising approach. Parents are the policymakers for their own families, and they can be most effective by eliminating sugary drinks, including all sodas, fruit juices, sports drinks and energy drinks, from their homes. Policies to limit sugary beverages' presence in schools and government buildings have also been successful at limiting consumption. We need a lot more of that.

Q: What about putting a special tax on sugary

drinks?

Robinson: Soda taxes are a promising strategy, although the beverage companies have successfully fought those by pouring in tons of money and misleading advertising. A recent survey found that the vast majority of Californians support soda taxes, especially if the money goes to health and obesity-prevention programs for children. The taxes proposed are minimal so far but, like for tobacco, taxes can help reduce demand by making sugary drinks more expensive and also help to offset, at least a little bit, the extra costs borne by society for extra medical and dental care, waste, pollution and even greenhouse gases associated with the production of sugary drinks.

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