

Type 2 Diabetes In Children: High Sugar Is Not So Sweet

Dr. Todd Huffman, for the Eugene *Register-Guard*, October 2009

The alarming increase in the numbers of obese children in the United States raises major concerns about the future health of our society. One outcome of this disturbing trend that is already evident is the rapidly increasing numbers of children being diagnosed with type 2 diabetes.

This disease, once thought to be nonexistent in children, has this decade been increasing at the same marked rate as childhood obesity. One in three new cases of type 2 diabetes is now diagnosed in Americans under the age of 19 years. Out of 20 million or more type 2 diabetics in the U.S., between 250,000 and 500,000 of them are children.

Once ignorant about the disease, pediatricians are rapidly becoming skilled at recognizing, diagnosing, and managing type 2 diabetes. While I treated many cases of type 1 diabetes during my own training in the early 1990s, I saw not one case of type 2. Today, my partners and I diagnose and treat many more cases of type 2, a fact that will not change for the foreseeable future.

The most startling statistic is this: unless something drastically changes, one in three children born in or after the year 2000 will develop type 2 diabetes during their lifetime. If the child is black, Hispanic, or Native American, her chance is nearly one in two!

Other than obesity, genetics play the greatest role in increasing the lifetime risk of developing type 2 diabetes. Half to three-fourths of children diagnosed with type 2 diabetes have at least one parent with the disease. And children whose mothers had pregnancy-induced diabetes are at higher risk of developing the disease, especially if their birth weight is unusually large.

Today, one in three overweight and obese adolescents already meet criteria for “pre-diabetes”, medically better known as Metabolic Syndrome. This condition is more prevalent in males, though the rate in females is rapidly increasing.

To meet criteria for metabolic syndrome, people must have three or more of the following: 1) a body mass index (BMI) above the 97th percentile for age and gender; 2) a systolic or diastolic blood pressure above the 95th percentile for age and height; 3) an abnormal glucose tolerance test; 4) a triglyceride level above the 95th percentile; and, or 5) a HDL (“good”) cholesterol level less than 5th percentile.

So who should be screened for type 2 diabetes and metabolic syndrome? Any child age 10 years or older with a body mass index above 85th percentile in whom two or all of the three following risk factors are present: 1) non-Caucasian; 2) a family history of type 2 diabetes in a 1st or 2nd degree relative, including if the mother had pregnancy-induced diabetes; and, 3) physical signs of insulin resistance – in other words, of type 2 diabetes.

The most common physical sign of insulin resistance noticed by doctors upon examining an at-risk child is Acanthosis Nigricans, a velvety black or brown skin condition found on the neck, shoulder area, and/or underarms of most adolescents with type 2 diabetes. Excessive acne and body hair in a teen girl, especially if she has menstrual dysfunction, raises suspicion of Polycystic Ovary Syndrome, which is associated with insulin resistance in one in six cases. Increased blood pressure in an overweight or obese adolescent also raises suspicions of either type 2 diabetes or metabolic syndrome.

Testing for type 2 diabetes always involves fasting blood sampling. Nothing is eaten or drank (except water) after dinner the day prior, and the child or teen is taken to the lab in the morning before juice or breakfast. Blood is then taken to check the fasting blood glucose, cholesterol, and triglyceride levels, among other things. In most cases, a 2-hour Glucose Tolerance Test is then performed, in which the child drinks a load of thick sugar water and has his blood glucose checked again in two hours.

If the fasting blood glucose is less than 100, the child does not have diabetes, but if it is above 125, he does. If his blood glucose two hours after drinking the sugar syrup is less than 140, he does not have diabetes, but if it is above 200, he does. Blood glucose levels in between indicate “impaired glucose tolerance”, which may lead to a diagnosis of metabolic syndrome.

These criteria for diagnosis of type 2 diabetes are the same for all people, regardless of age.

A child or teen newly diagnosed with type 2 diabetes is immediately referred to a specialist for initial management, including medication and dietary restructuring. The child with metabolic syndrome may be begun on medication, and certainly will be referred along with their family to a dietician for counseling.

A child or teen whose testing revealed neither diabetes nor metabolic syndrome, but who remains at high-risk for developing either condition, will receive dietary and physical activity counseling from her physician. She will need screened again in two years, unless lifestyle changes have successfully led to her no longer being overweight. Such success stories are sadly uncommon.

As with most disease, the best treatment for type 2 diabetes is prevention. Scheduling well-child examinations on a regular basis from a young age is the first step. Giving close attention when the child’s physician warns about a young child’s weight, and when the physician offers dietary and physical activity counseling, is the next.

And, finally, making and sticking with the family-centered lifestyle changes necessary when a young child is diagnosed as being overweight is crucial in reducing her lifetime risk of developing diabetes. While there are lots of reasons why children become overweight, the biggest reason why overweight continues to worsen is parental denial.

Please don’t be that parent. The future risk is too great.

