

Clinic Confronts Childhood Obesity

Andy was drowsy and unresponsive on arrival at The Children's Medical Center (CMC) ER. The 5-year-old had been referred by his school after he lost consciousness and his lips turned blue. Just four feet tall, he weighed 136 pounds and had a history of waking at night to raid the refrigerator. Although his EKG and echocardiogram were normal, his blood pressure was 126/80 and the oxygen level in his blood was dangerously low.

Andy was diagnosed with life-threatening obstructive sleep apnea and admitted to the hospital's inpatient weight management program directed by Daniel Preud'Homme, M.D., C.N.S., associate professor of pediatrics and director of CMC's lipid clinic. Andy had his adenoids and tonsils removed, lost 18 pounds, and was sent home 24 days later with a Continuous Positive Airway Pressure (CPAP) device (a mask used during sleep that fits over the mouth and nose to keep the airway open). Additional weight loss supervised by the clinic allowed him to discontinue CPAP four weeks after discharge.

Once rare, childhood obesity has increased at an alarming rate in recent years, Dr. Preud'Homme says. "It has reached epidemic proportions among all ages and across ethnic lines. Although we see children with a range of lipid problems in our clinic, probably 90 to 95 percent also are severely obese."

Since 2002, Dr. Preud'Homme has admitted 38 children between the ages of 4 and 17 to CMC's inpatient weight loss program. Their vital functions must be closely monitored during the initial phase of treatment because they face life-threatening complications related to obesity. The average patient stays for two weeks and loses about 5 percent of his or her weight. With continued treatment, most were able to discontinue medications and supportive therapy for other conditions like hypertension and apnea.

The 1999–2000 National Health and Nutrition Examination Survey conducted by the Centers for Disease Control and Prevention found that 15 percent of youth ages 6 to 19 are overweight and more than 10 percent of those between 2 and 5 are overweight. The CDC considers a child overweight if he or she has a body mass index (BMI) above the 95th percentile on the 2000 CDC Growth Charts. The survey also found another 15 percent of children at risk of becoming overweight.

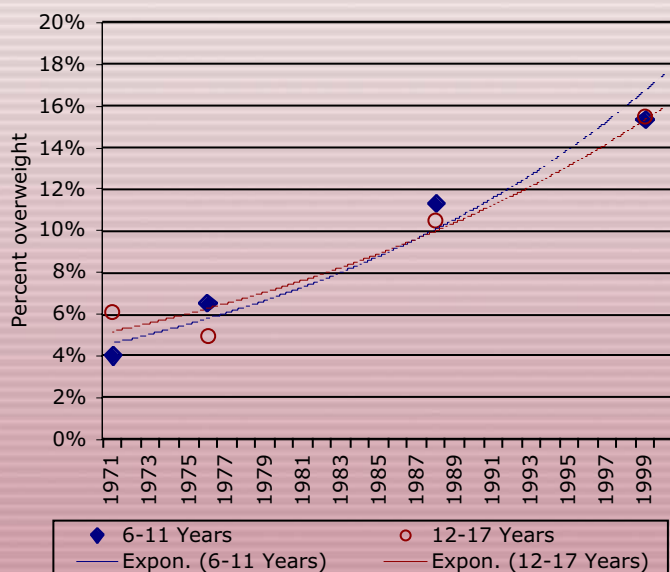
In the cholesterol program he started at Children's in 1993, Dr. Preud'Homme primarily treated children with unusual genetic lipid disorders. Things began to change about four or five years ago. "I started seeing children with very high triglyceride levels. Quite a few had type 4 hyperlipidemia, a lipid disorder seen in metabolic syndrome. I was quite surprised."

Obese children are at risk of type 2 diabetes, hypertension, asthma, liver and kidney diseases, attention deficit/hyperactivity disorder, scoliosis, and a variety of other physical and behavioral problems. Social isolation and depression due to bullying are common.

"Soon I realized that as many as 50 percent of our patients had this. I started to see it in children as young as 4 years old. I knew if they could lose weight, they could improve some of this comorbidity. But, I felt that just sending them home, saying 'exercise 30 minutes a day and eat this diet,' wasn't going to do it. That's when I decided to start the lipid clinic."

The clinic saw about 450 different patients in 2002 and close to 800 in 2003. "For 2004, it looks like it's going to be more than a 1,000. And, this is all without any form of advertising."

Prevalence of overweight among children and adolescents ages 6-19 years, 1971-2000



Source: National Health and Nutrition Examination Surveys (NHANES) of 1971–74, 1976–80, 1988–94—known as NHANES I, II, and III respectively—and 1999–2000. The survey has been conducted periodically by the National Center for Health Statistics, part of the Centers for Disease Control and Prevention. Beginning in 1999, data has been collected on an ongoing basis.

Epidemic

Although he doesn't advertise, Dr. Preud'Homme does want to spread the word among primary care physicians to be alert for early signs of weight problems in children. To that end, he has developed a nutrition course for first-year medical students, made presentations to internal medicine and family practice residents on type 2 diabetes in childhood, and works with pediatric residents in the clinic.

“You must bring in all the institutions involved in rearing the children to address obesity.”

The clinic team evaluates each child's cardiovascular, gastrointestinal, metabolic, and exercise tolerance status. They develop diet, exercise, and lifestyle plans geared to the child's age, physical capabilities, and socioeconomic conditions. “We look into the family and the community for resources. You must bring in all the institutions involved in rearing the children to address obesity,” Dr. Preud'Homme points out.

He's been especially pleased with the cooperation of most schools, recreation centers, and other community programs in response to the children's needs. “The YMCA offered scholarships so children of any age can use their treadmills with a prescription. I wrote a note for a 12-year-old asking if she could go to Weight Watchers with her mom, and they agreed.”

Maintaining a positive attitude is the key to treating children with such seemingly intractable problems, he says. “It's only human to relapse. We never judge. We never condemn or get upset with the children or their families. We always try to provide a positive restructuring.”

If a child is happy, healthy, and achieving many of his or her goals, Dr. Preud'Homme says the child is succeeding. “We see a lot of success.”

—Robin Suits

Editor's note:

Andy's story was first published by *The Children's Medical Center* in its *Pediatric Clips* series on its Web site.

WSU Researchers Provide Unique Obesity Resource

The Fels Longitudinal Study, housed within Wright State's Lifespan Health Research Center (LHRC), provides a unique resource for tracking obesity from childhood to adulthood. Using Fels data, LHRC researchers have determined that adult obesity tracks from two critical periods in childhood.

“This is vital information,” says Dr. Shumei Sun, professor of community health. “We have not been very successful at reducing obesity in adults. Adult overweight should be prevented early when it starts to develop in childhood.”

Between the ages of 4 and 8, children are at their leanest, with a low BMI. Being overweight during this time tracks directly into adulthood with an increased percentage of total body fat. And, the earlier a child begins to add fat during these years, the more likely he or she is to have weight problems as an adult. The same tracking occurs for girls in another critical period—adolescence—says Dr. Sun, who served on the Centers for Disease Control and Prevention panel that developed new growth charts incorporating BMI information in 2000.

The Fels Study is the world's largest and longest running study on human growth, body composition, and risk factors for heart disease. Fels researchers have been involved with the internationally distributed growth charts since the first ones were produced in 1977. Since then, the charts have become a standard reference for both pediatricians and parents.



The CMC Lipid Clinic team includes a nutritionist, nurse diabetic specialist, social worker, and a resource nurse. (From left) Theresa Taylor, Dana Kitchin, Deanna Mayes, Trina Rushing, Christie Bernard, Dr. Daniel Preud'Homme, and Myrna Miller. Photo by Tom Suttman courtesy of The Children's Medical Center.