# Halting seeds of chronic illness in tots

## Heart disease, diabetes take root early, researchers say

Deborah Africa and her youngest son, David, who is now 7. From the time he was a baby, Africa has kept him from eating fast food and tries to make sure he gets enough exercise. “As a registered nurse, I’ve seen so many people with health problems later in life that developed because they didn’t take care of themselves.”

By Linda Carroll
msnbc.com contributor
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Watching your toddler play, it's hard to imagine that she may already have developed the beginnings of a chronic illness, like heart disease, commonly associated with middle and old age. Even if she’s roly-poly now, it's easy to figure she'll shed that baby fat with her next growth spurt.

But scientists now say that parents shouldn’t be so complacent. Several new studies have shown that the seeds of chronic illnesses, like diabetes and heart disease, may be germinating much earlier than anyone thought. Researchers have seen markers for heart disease in children as young as 3 and warning signs of Type 2 diabetes in 7 year olds.

A lack of activity and a rise in overweight kids may be partly to blame. The number of children ages 2 to 5 who are overweight has increased in the past decade, and about one in seven low-income, preschool-aged children is now considered obese, according to the Centers for Disease Control and Prevention.

“I think parents should be not so much worried as motivated,” says Dr. Eliana Perrin, co-author of a new study published in April in Pediatrics and an assistant professor of pediatrics at the University of North Carolina at Chapel Hill. “Catching something early gives us as parents and pediatricians an opportunity to prevent problems down the road. Parents have a huge role in helping children make healthier choices in what they eat and how often they play.”

For the new study, Perrin and colleagues followed more than 16,000 children ages 1 to 17 years. The researchers found that obese children as young as 3 years old had elevated levels of C-reactive protein, a marker of inflammation that in adults is considered an early warning sign for possible future heart disease. In fact, among the heaviest children ages 3 to 5, more than 40 percent had elevated CRP compared to only 17 percent of healthy-weight children.

**Importance of diet and exercise**

The new research simply confirms what Deborah Africa always suspected. Right from the start, the 56-year-old of Morgan Hill, Calif., was scrupulous about her son’s diet and exercise. While most parents assume they’ve got years before they need to start thinking about long-term health issues in their children, Africa was convinced that it was crucial to get David started on the right path early.

“As a registered nurse, I’ve seen so many people with health problems later in life that developed because they didn’t take care of themselves,” says Africa. Now that her son is 7, she’s having to work harder to keep on that path. “I don’t let him eat fast food. I haven’t allowed a PlayStation in the house and I’ve signed him up for soccer to help him get enough exercise. But it’s an uphill battle with all the advertising kids are bombarded with.”

Sometimes parents don’t really notice when their kids’ waistlines start to expand, the researchers pointed out. For younger kids, the difference between healthy and too heavy can be just a few pounds. Perhaps even more disheartening is the big increase doctors have seen in Type 2 diabetes in kids. “When I was in medical school, Type 2 diabetes was called ‘adult-onset diabetes,’ ” Perrin says. “Now you’re seeing it in middle-school-age kids and adolescents. That’s frightening.”

Several studies have shown that poor diet and lack of exercise can boost a kid's risk of developing diabetes. A study published in Dynamic Medicine found that kids who were couch potatoes between the ages of 7 and 10 were five times more likely than others to have developed metabolic syndrome, a condition marked by high blood pressure, high cholesterol and high blood sugar, seven years later.

For perspective on how big an effect this is, consider that smoking raises the risk of prostate cancer by just 20 percent, says the study's lead author Robert McMurray, the Smith Gunter distinguished professor in exercise and sports science at the University of North Carolina at Chapel Hill.

**Precursors of disease**

Preliminary results from an ongoing study of 118 elementary school children found that kids as young as 7 already had signs of developing diabetes. The heavier a kid was, the more likely he was to have precursors of the disease, such as fat in the liver and muscle as well as insulin resistance. But fatty livers and insulin resistance could also be seen in some healthy-weight children, too, says Melinda S. Sothern, study co-author and a professor at Louisiana State University Health Sciences Center.

"I was shocked to see children this young had these markers," Sothern says. "I think we're seeing this in normal weight children as a sign of the calm before storm."

In other words, the fat in the liver and the muscles may be a sign that these normal-weight kids are on the verge of ballooning out, Sothern says.

The solution to all these problems is to improve diets and get kids moving, experts say. That's a challenging task when kids are exposed to so much poor quality food and are spending a lot of time sitting of the computer, but it is possible. You just have to use a little psychology, says Sothern.

"If you see your kid sitting on the sofa vegging out in front of the TV, instead of saying something negative, like, 'You're going to get as big as a house,' suggest taking a walk outside," she explains. "Or, you might give your kid a choice: Vacuum the living room, mow the lawn or shoot some hoops."

**Importance of vitamin D**

While research shows that parents need to do more to make their kids healthy, at least one new study shows that children will benefit if parents do a little less — at least when it comes to sunscreen. A study published in Pediatrics found that seven in 10 American children have low levels of vitamin D, which puts them at risk for the brittle bone disease osteoporosis later in life. The study looked at vitamin D levels in more than 6,000 youngsters ages 1 to 21. Since your peak bone density is achieved in your mid-20s, you could have a lot of problems down the road if you haven't built enough bone in the early years, says study co-author Dr. Michal Melamed, an assistant professor of medicine and epidemiology at the Albert Einstein College of Medicine in the Bronx.

To get adequate vitamin D levels, parents simply need to let their kids go out in the sun for at least 15 minutes a day without sunscreen to soak in the UV rays necessary to make the vitamin, Melamed explains.