

New Growth Charts Dispel the Myth That One Size Fits All

By Howard Markel April 16, 2002 NY Times

April 16, 2002

<https://www.nytimes.com/2002/04/16/health/new-growth-charts-dispel-the-myth-that-one-size-fits-all.html>

Like most pediatricians, Dr. Eric Poon usually obtains a child's weight and height during an examination and records them on a set of standardized growth charts.

This allows him to compare the child's growth to that of thousands of other children and to determine whether it is adequate, inadequate or, in these times of rampant obesity, too adequate.

Dr. Poon follows hundreds of patients in his New York City clinic, in the heart of Chinatown, but one child he was particularly concerned about was Kevin Ngai, 4 1/2.

Although Kevin's height was progressing along the 25th percentile, he had been markedly underweight since birth. Every point on his weight growth curve scrapes the 5th percentile, the border between normal and abnormal. Dr. Poon found nothing else in Kevin's physical examination suggesting an underlying serious illness, but just to make sure Kevin was absolutely healthy, Dr. Poon ordered a battery of medical tests.

All came back normal and, in fact, Dr. Poon's clinical observations were correct. Kevin is a small boy but perfectly healthy; the growth charts, however, were based on data that no longer represent the population of children in the United States.

Pediatricians have long complained about inaccuracies associated with standardized growth charts. Until recently, those most widely used were developed in the 1970's and were based on not much more than 10,000 infants and children living in Ohio between 1929 and 1975.

Because almost all the children studied were white, middle class and formula fed, the charts fail to reflect several differences in growth among different children. For example, healthy breast-fed babies tend to gain weight more slowly than their formula-fed counterparts. Asian children are often smaller than Caucasian children. As a result, a pediatrician may mistakenly conclude that a particular child is not growing or gaining weight adequately when, in fact, he or she is.

Equally problematic, two different groups of children were used for the overlapping charts covering children from birth to 36 months and from 2 years to 18 years.

This means that the same 24- to 36-month-old child can measure in a different percentile when progressing from one chart to the next, often leading to misdiagnoses and expensive clinical tests. Finally, the charts developed to compare weight for stature end at 10 for girls and 11 for boys, making it difficult to follow the growth of teenagers.

To correct these problems, several nutritionists, pediatricians and statisticians at the National Center for Health Statistics, the National Institutes of Health and the Centers for Disease Control and Prevention have compiled a large sampling of new data from several recent annual national health and

nutrition surveys based on millions of children. Their comprehensive data, covering children from birth to 20, better reflect the country's racial and ethnic diversity and include formula and breast-fed babies.

The improvement is striking. In the January issue of *Pediatrics*, the team reported that the new charts were significantly more accurate for monitoring the growth of infants, children and adolescents.

The most important feature of the new growth charts is the inclusion of a measure called body mass index, which is calculated by dividing the weight by the height squared. B.M.I. is commonly used to determine if adults are overweight and correlates well with a person's total body fat. Nutrition experts have long advocated that B.M.I. be applied to children and teenagers because a majority of overweight adults start as overweight children.

Dr. Robert Kuczmarski, a nutritionist at the National Institutes of Health and one of the study's authors, noted: "Our data show that by the age of 8 you can predict with great precision which child is likely to be overweight later in life. B.M.I. is one extra tool that will allow physicians to track this trend and, hopefully, do something about it."

Dr. Susan Baker, a pediatrician at the Buffalo Children's Hospital and chairwoman of the American Academy of Pediatrics Nutrition Committee, agrees. "Malnutrition is rarely seen in the United States today, and the biggest problem we are seeing related to growth is obesity," Dr. Baker said. "Being overweight puts you at direct risk for Type 2 diabetes, hypertension, stroke and heart disease, all leading causes of death in the United States."

Although the charts were released with great fanfare by the Department of Health and Human Services in May 2000, it is only in recent months that they have been widely distributed. Still, many experts are concerned that the new charts have not been more enthusiastically embraced.

Dr. William Dietz, director of nutrition at the C.D.C., said: "We know from a preliminary survey that only 20 to 30 percent of American pediatricians have an adequate understanding of the new growth charts, how to apply the B.M.I., or are even using them. This is probably an overestimate."

Dr. Raymond Coleman, a pediatrician in Rockville, Md., recently explained why he had not yet incorporated the new charts in his clinic. "I think they are probably crisper and more accurate, but we are still using the older charts," he said. "From a practical standpoint, I rely on my eye, clinical experience and parental concerns about a child's growth. It's the growth trends from month to month that are important. That does not change, in my opinion, whether I use the new or the old growth charts."

Pediatricians who keep electronic medical records of their patients, however, are embracing the new growth charts with great enthusiasm. Dr. Vicki Papadeas, who practices in Manhattan, said: "We have a newly designed computer program at our office. All we have to do is enter the height and weight, and the computer does the calculations for us. It's incredibly helpful."

Dr. Elena Fuentes-Afflick, a pediatrician at San Francisco General Hospital, is also excited about the effects of the new growth charts on patients' health. "We are seeing an explosion of obesity among the Latino and African-American children in our practice," she said. "The new B.M.I. charts will give us a

better way to explain how these children are overweight to their parents and add clout to our prescriptions for better diets and increased physical activity."

"Change takes time," said Dr. Steven Shelov, chief of pediatrics at Maimonides Medical Center in Brooklyn and an editor of "Caring for Your Baby and Young Child."

"The new growth charts have not yet been widely picked up by rank and file pediatricians," Dr. Shelov said, "but I think this is more a logistical problem than a philosophical one."

"Many physicians still have a large supply of the old charts. Some feel unsure how to calculate B.M.I. or too overburdened to add still another task to their daily routine. We need to revise the baby-care books, distribute the new charts more widely, and teach pediatricians and parents about the vital public health importance of using them. We have a lot of work to do."

A version of this article appears in print on April 16, 2002, Section F, Page 5 of the National edition with the headline: New Growth Charts Dispel the Myth That One Size Fits All. [Order Reprints](#) | [Today's Paper](#) | [Subscribe](#)