

A Costly Truism That's Not True  
by Sandy Szwarc, BBN, RN, OCP

Do you ever wonder how something *that isn't true* becomes a truism — something everyone “knows” to be so? Maybe, just hearing it repeated so often leads us to believe it, thinking “surely, *someone* has fact checked it by now” or “they must know something I don't.” Seeing it published in a peer-reviewed medical journal serves to add the authority of degreed professionals to a truism, as it's widely believed that experts fact check during the editorial process. Even more important to the scientific process, though, is the peer review that happens after a paper is published, when the entire scientific and medical community gives it close scrutiny.

But what happens when no one does? What happens when something has come to be seen as so intuitively correct that no one even thinks to question it, even doctors?

We saw a recent example of this with the oft-repeated truism: “Obesity has led to a dramatic increase in the incidence of type 2 diabetes among children and adolescents over the past two decades.” This quote was again stated as fact in a review article published in the August 2005 issue of the journal *Pediatrics*. The authors, from the Weight Management and Wellness division at the University of Pittsburgh School of Medicine in Pennsylvania, said that the incidence of type 2 diabetes among children and adolescents had increased ten-fold just between 1982 and 1994. The source of this figure, the authors said, was the University of Cincinnati College of Medicine retrospective diabetes clinic study.

The *Pediatric* journal's peer-review process failed to catch the fallacy of logic evidenced in using that study, or others like it, to support claims of skyrocketing child diabetes. It had used referrals to a single pediatric diabetes center — which had seen 54 *young people* with type 2 diabetes during a 12-year period — to derive population-wide statistics. The Cincinnati authors had extrapolated the increase in cases to their referral center between 1982 and 1994 to the entire population of teens in the greater Cincinnati area.

Of course, this is an example of *selection or allocation bias*. Not only was type 2 diabetes not widely recognized as a possible diagnosis among youngsters until more recently, meaning referrals would logically increase as that awareness among doctors grew, but sick children seen at a diabetes referral clinic are not representative of the entire population of American children. Small studies of *select, high-risk populations in clinical settings*, rather than national data, cannot credibly be extrapolated to population figures to make trend claims.

The journal's peer-review process also failed to do a simple fact check of the data on the actual incidence of type 2 diabetes among American young people. Several large population studies have been done since 1988 on *randomized* samplings nationally *representative* of the population of young people, monitoring the trend of type 2 diabetes. These include the National Health and Nutrition Examination Survey (NHANES) conducted by the CDC's National Center for Health Statistics, and five other large population-based studies that have followed children and teens, all of which have also measured type 2 diabetes by actual blood tests. All of these large population studies have consistently shown that rates of type 2 diabetes among children and adolescents at the population level have remained unchanged.

Clearly, the evidence shows that there is no epidemic of childhood diabetes. In fact, type 2 diabetes remains *extremely rare* among pediatric populations. Over the past two decades, the estimated prevalence of type 2 diabetes among U.S. teens has been: 0.12% — 0.15% — 0.12% — 0.04%. Estimates among children as a whole (age 0-19 years) are lower, 0.02%. As Dr. Joyce M. Lee, M.D., MPH, with the division of Pediatric Endocrinology, Child Health Evaluation and Research Unit at the University of Michigan in Ann Arbor, recently wrote in *Archives of Pediatric and Adolescent Medicine*, the consistency of the population findings across two decades regardless of the methodology clearly shows extremely low rates of type 2 diabetes among young people and a lack of any notable increase, “despite increases in obesity.” The overall burden of type 2 diabetes remains concentrated in older adults, she said.

More disturbing than the lacking publication peer review process in *Pediatrics*, was the failures of the post publication peer review process. A search of the journal's issues for an entire year following that 2005 review article stating that obesity leads to a dramatic increase in type 2 diabetes among children and teens, found not a single letter was published from a member of the American Pediatric Association, doctor or scientist who had fact checked or caught the misinformation.

Furthermore, since the article's publication, this false “truism” has been repeated hundreds of thousands of times — 381,000 articles appear today on Google alone (and only one was this one). It's become a key justification for Calls to Action against child obesity, public health programs, and clinical guidelines for heightened interventions for fat children.

Yes, the peer review process ultimately works and the science will come out eventually. It wasn't until Dr. Lee's paper *three years later* in another pediatric journal that the flaws were even noted. But few pediatricians or consumers who read the original 2005 paper will ever know about that, as it won't be linked to it. And after years of hearing the truism that everyone “knows” is correct, *but isn't*, the science won't even sound believable. The truism will probably keep going and going.