



On August 9, 2011, SCOR SE, a global reinsurer with offices in more than 31 countries, acquired substantially all of the life reinsurance business, operations and staff of Transamerica Reinsurance, the life reinsurance division of the AEGON companies. The business of Transamerica Reinsurance will now be conducted through the SCOR Global Life companies, and Transamerica Reinsurance is no longer affiliated with the AEGON companies.

While articles, treaties and some historic materials may continue to bear the name Transamerica, AEGON is no longer producing new reinsurance business

# The Forecaster

## A Perfect Storm – Causes and Costs of Pediatric Obesity



**Steve Zimmerman, MD**  
Vice President  
& Chief Medical Director

*Changes in diet and lifestyle have combined with genetics to form a perfect storm condition for rising obesity rates in adults and children. Life insurers need to watch these trends closely. Many of today’s children will face severe co-morbidities related to obesity for the rest of their lives. As they age, mortality assumptions and underwriting rules that have served the industry well for many years may no longer apply.*

*Joseph A. Skelton, MD, MS, is Director of Brenner Families in Training, a multidisciplinary weight management program at Brenner Children’s Hospital, a part of Wake Forest University Baptist Medical Center. In an interview with Steve Zimmerman, MD, Vice President and Chief Medical Director for Transamerica Reinsurance, he discusses how pediatricians are approaching the array of obesity-related diseases striking at children.*

*Dr. Skelton received his medical training at the University of Tennessee Health Science Center in Memphis. He is an Assistant Professor of Pediatrics and of Epidemiology and Prevention at Wake Forest University School of Medicine. He has written several articles about the expanding repertoire of treatments for pediatric obesity. In 2007 and 2009 he was selected as one of the Best Doctors in America for his care of obese children.*



**Joseph A. Skelton, MD, MS**  
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Wake Forest University  
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**Dr. Zimmerman:** *We seem to be caught up in a worldwide obesity epidemic. What about our environment has changed to make obesity much more prevalent in recent years?*

**Dr. Skelton:** Nutrition, exercise and genetics are at the heart of what some call the perfect storm that has caused this epidemic. For eons, our genetics helped us survive famine, drought and war. And even though we have been an industrialized society for some time, it’s just over the past 20-30 years that there’s been an excess of calories available, even to our poorest citizens. Also, conveniences such as cars, escalators, elevators and computers help us burn as few calories as possible. So, ready access to more calories, plus burning fewer calories – in bodies made to hold on to calories – has set us up for higher rates of obesity. But it’s not just environment; we’ve adapted our habits to these changes in some very unhealthy ways.

**SZ:** *What lifestyle changes have proved particularly unhealthy?*

**JS:** For one thing, separation of neighborhoods from other aspects of life is having a much bigger effect on obesity than originally thought. We have structured our cities and towns so that many people live far away from where they work and play and shop – they essentially come home to sleep and spend time with their families and that’s it.

Another thing is that we’re more likely to eat out – 80 percent of people don’t know what they’re having for dinner at 4:00 P.M. What’s easier? To plan and cook the meal, or to swing through the drive-thru and get the kids exactly what they want to eat? And when we eat out we tend to eat less healthy foods. There are more “healthy options” out there but that chicken sandwich can have more calories and fat in it than a hamburger.

Finally, there are our entertainments – TV, video games, computer, Internet – all of these things that keep us and our children inactive are part of the lifestyle that we’ve developed in recent years.

*SZ: And this lifestyle is leading to more obesity-related diseases in children?*

JS: Yes. I went into pediatrics in part to help prevent the development of these adult diseases that we are now seeing in children – diabetes, sleep apnea, high blood pressure, arthritis and more. Type II diabetes in children is almost as common as Type I diabetes now and it's overwhelming some pediatric diabetes centers that are used to dealing with just Type I cases. Pediatricians are being swamped by higher rates of hypertension as well. In our practice, we have a cardiologist specializing in adolescents to keep up.

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### **Long-Term Costs and Effects**

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*SZ: What are the costs related to higher rates of pediatric obesity?*

JS: We already spend about \$14 billion a year treating co-morbidities of obesity in children. Obese children are two to three times more likely to be hospitalized than normal-weight kids, sometimes for illnesses that normally would not require hospitalization. We often focus on obesity as a delayed cost because of what it will do to these kids later in life. But we're starting to see the increased costs in children now.

*SZ: What are the long-term effects?*

JS: By starting obesity at earlier ages, children's bodies are exposed to extra weight for much longer and the resulting medical co-morbidities are more severe. For example, if someone develops diabetes or heart disease in their teens, you are looking at potentially 30-50 years of exposure. And that extra weight causes other problems. In severely obese adults, mobility and functionality get worse over time. Upwards of four percent of kids – 400,000 or more – fall into this “severely obese” category. We are already seeing arthritis and degenerative joint disease creeping into younger ages.

*SZ: To what extent is childhood weight status a good predictor of adult obesity?*

JS: As you might expect, the more obese and older the child, the greater is the chance that the child will be obese as an adult. One

study looked at children's body mass indices as predictors of adult obesity and found that the risk of obese kids becoming obese adults increases significantly around age 11-12 years, from about 50 to 60 percent and higher. Overweight kids do not see this jump in risk until age 18-20 years. The risk of normal-weight children becoming obese as young adults stays below 20 percent.

But a lot more of those normal-weight kids will eventually be obese as adults. You develop a lot of habits with your family and bad habits will catch up with you. That's why one of the biggest predictors for obesity as an adult is obesity in your parents. Some of that is genetics but there's also the environment you grow up in, along with the habits that you develop as a teen because you tend to keep those habits as an adult.

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### **Behavioral and Surgical Therapies**

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*SZ: How well does behavioral therapy work in achieving weight loss?*

JS: In the 1980s, a psychologist named Leonard Epstein developed a program to permanently change behaviors that compared favorably to dieting, which is really a temporary restriction of calories in an effort to lose weight. A third of the kids in the program classified as overweight or obese had kept the weight off 10 years later.

Epstein also included the parents in therapy, a basis of treatment that we have built into our program. If we include the family or at least one primary caregiver in treatment then we can see some permanent changes – up to 84 percent of our kids experienced improvement in their weight. A certain number of obese kids become not-obese with behavioral intervention. But even those that stay obese can significantly lower their weight and decrease risk factors such as cholesterol and markers of insulin resistance. It may not be a large improvement but the longer the kids stay in the program the more success they have in keeping the weight off.

*SZ: What changes do you look for?*

JS: We start by asking, “What behaviors lead kids to eat more and to lower their

levels of physical activity?” We look at reducing the number of sugar sweetened beverages that they consume – juices, sweet tea, sodas and sports drinks. We also look at how many meals they’re eating at home, and their behaviors around meals. Are they focusing on the meal or do they have the TV on, which can distract them from their level of fullness? We look at sleep patterns as well, which have a big impact on energy level, food choices and overall health. So we are looking at anything that influences “calories in and calories out” versus just focusing on the calories.

*SZ: You mentioned getting the parents involved in therapy. Do you look to change parenting behaviors as well?*

**JS:** Yes – we look at each family as being different but there are broader perspectives. In younger kids, the therapy revolves around the parents’ relationship with their children over food. Pediatric obesity is sometimes associated with parents who are overly permissive with what their kids eat or even neglectful and let the kids fend for themselves. However, we know clinically that the kids of parents with authoritarian styles of feeding (overly restrictive) have the highest rates of obesity. We try to get parents to be sensitive to needs but still set clear boundaries. We help develop healthy relationships between parents and children around food; this can have a huge impact on the kids’ weight.

In teenagers we work more on cultivating a supportive relationship with parents around food and physical activity. Sometimes adolescents develop antagonistic relationships with their parents when it comes to these issues. The goal is to turn those relationships around from being ones of antagonism to ones of support so that they’re changing behaviors together.

*SZ: Behavioral modification sounds like the cornerstone of treatment. How effective is bariatric surgery in pediatric patients?*

**JS:** There’s evidence that over 1,000 U.S. kids are getting bariatric surgery every year. There has been some success in pediatric cases, in that the kids are safely losing a lot of extra weight. There are risks, and some

surgeries have lots of complications, though we don’t think that kids are having more complications from surgery than adults.

A behavioral approach is always taken with bariatric surgery in adults. The doctors make sure you’ll be able to stick to the program and come to follow-up clinic visits. Pediatricians follow the same program but we raise the bar a little bit. To qualify, the kids must be close to their full adult height and have a serious medical co-morbidity, and the procedure must be done in a center experienced in dealing with obese children.

*SZ: BMI is widely used to indicate obesity in adults. But is high BMI reliable in children? Would alternatives such as waist circumference be helpful in pediatric cases?*

**JS:** I actually have a colleague who is working on standards for waist circumference in kids but we’re way off from that being a routine measure. Some other measures of body fat work as indicators but they tend to be too expensive to use in a clinical setting. BMI plotted for age and gender is still the best screening tool that we have. Now, it’s true that some members of the NFL and other professional sports have BMIs that put them in the obese range. But it’s rare that a kid with a BMI above the 95th percentile is at a healthy weight, even if a highly trained athlete.

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## A Long Road Ahead

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*SZ: Do you see the rate of increase in obesity flattening out in the near future? As a corollary, do you see the “normal” range of BMI moving from, say, 20-25 to 22-27 because more people are now in that band?*

**JS:** Five years ago, there was speculation that the obesity epidemic was leveling off but a year or two later obesity was still going up, albeit at a smaller rate. And a year ago we went through the same thing, but obesity continued to get worse. And even if we flatten off the rates of increase, a lot of kids will become obese as adults.

As for BMI, there’s currently a debate around whether we need to shift the growth curves. Some say we need to reflect the reality in the U.S. and the world, while

others say if you shift the growth curves then you're just covering up the fact that we're getting fatter. Right now the thought is to stick with the current BMI ranges.

*SZ: Is more public awareness of the problem having a positive impact?*

**JS:** You hope it would help, but we're very impatient here in the United States. We want things fixed and fixed now. Instead of working on behaviors and instituting public health policies we are looking for the magic bullet, looking for easy changes rather than tough changes that might be expensive. One example would be our schools.

Schools function under strict guidelines about the food they can buy and what they can serve to kids. They also have to do it on very small budgets. What you hear from schools is, "We want to quit serving fries but we need to buy more ovens so we can bake more foods." Yet school systems aren't getting the extra money to buy the equipment they need. So, many schools sell less healthy á la carte items to help fund their budget shortfalls. I'm a little worried that the increased attention isn't going to pay off, because we are facing some tough decisions and I don't think we're ready to make them.

*SZ: What are we going to see from a public health perspective? Do you think obesity will become more of a health issue comparable to what happened with tobacco?*

**JS:** Sometimes smoking is held up as a model for how to approach obesity. A mentor of mine once commented that the war on tobacco is about 50 years old, and we still can't say that we've won or that smoking is no longer a problem. Now, tobacco has addiction issues that don't translate over, but with obesity we're dealing with not one but two basic behaviors – eating and physical activity. We're just starting to tackle the obesity epidemic. This could be a long road.

Much like in the old days with tobacco, it's a muddy picture and politics is going to complicate matters for several years to come. One idea that is gaining steam is a proposal to place a one-cent "fat tax" per ounce of sugar in sweetened foods. But there's huge public opposition to this. In our society, we're free to choose what we eat. If people keep buying sugary foods and you can't prove direct harm then companies will keep selling them.

While there is something to the "personal responsibility" argument, a lot of other things affect our health. Take pollution as an example. Despite hard science showing the health implications of pollution, we continue to have setbacks in public policy influencing what we pour into our streams and air. I believe we are moving in the right direction on obesity but progress is going to be slow and we need to develop the will to make the needed changes.



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