Parental feeding behavior and children’s fat mass$^{1,2}$

William C Heird

The number of overweight children and adolescents increased dramatically from 1980 to 1994 (1), and the latest data indicate that the number is even higher today (2). The increasing number of overweight children and adolescents is often attributed to modern lifestyles that tend to foster an imbalance between energy intake and energy expenditure (3), resulting in positive energy balance and, hence, fat deposition. Because overweight children and, particularly, overweight adolescents become overweight adults, reversing the trend of increasing adiposity in children and adolescents is an important strategy for reducing the number of overweight adults. This, in turn, should reduce the many complications associated with being overweight, including type 2 diabetes, the prevalence of which is also increasing dramatically in children, adolescents, and adults (4). Thus, efforts are underway both to reduce energy intake, particularly fat intake, and to increase physical activity. Although some progress has been made toward reducing fat intake and perhaps increasing physical activity, reducing total energy intake remains a challenge.

The study by Spruijt-Metz et al (5) in this issue of the Journal suggests that changing parental feeding behaviors may help to modify children’s intakes. In this study, maternal scores on 2 subscales of a previously validated Child Feeding Questionnaire (6), pressure to eat and concern for child’s weight, accounted for 15% of the variance in the children’s fat mass. Others have shown effects of parental feeding strategies not only on children’s body mass index (BMI) and weight-for-length percentile but also on food intake (7, 8). These new data expand this general area of research to include the effects of parental feeding strategies on fat mass as measured by dual-energy X-ray absorptiometry, rather than only on BMI, the use of which is problematic in children and early adolescents (9). The study also expands previous findings conducted primarily in white girls to both boys and girls as well as to both white and African American children and adolescents.

Logically, influences of parental feeding strategies on body fat mass should be mediated by differences in either total energy intake or fat intake. However, in this study, nonfat energy intake explained only 5% of the variance in body fat mass and neither energy intake from fat nor, presumably, total energy intake explained any of the variance. This raises the question of whether parental feeding behaviors affect fat mass directly or rather simply reflect the parents’ responses to their children’s inappropriate body fat mass, regardless of how or when it became inappropriate. Such questions are likely to be disturbing to those of us involved in what we consider more traditional or more mainstream nutritional research.

As discussed by Spruijt-Metz et al, the cross-sectional nature of their study does not permit conclusions concerning cause and effect. On the other hand, considerable evidence from other studies suggests that the eating behaviors of children and adolescents are affected by parental feeding behaviors. Specifically, restrictive feeding practices, which in the study by Spruijt-Metz et al were highly correlated with concern for the child’s weight, are associated with higher energy intake and higher BMI whereas parental pressure to eat secondary to concerns that the child is too thin is associated with lower energy intake and lower BMI. Studies also have shown that parents who think their children are overweight or at risk of becoming overweight are more likely to practice restrictive feeding behaviors and those who think their children are too thin are more likely to attempt to increase intake (10). To further illustrate the complexity of eating behavior, parental eating behavior and weight status also appear to influence children’s eating behaviors (11).

The difficulty that traditional nutritional scientists such as myself have in understanding how parental feeding behaviors affect body composition if they do not affect intake should not lead us to discount the findings of Spruijt-Metz et al. Although it is difficult to fully comprehend this area of research, it is important to realize that it involves scientific principles just as sound as those involved in more traditional research. The difference is that behavioral scientists use different approaches to detect effects of a specific behavior than we do to detect the effect of a specific nutritional intervention.

Ultimately, it is behavior that must be modified if progress is to be made against the rapidly expanding number of overweight children and adults. Traditional nutritional scientists have been reasonably successful in informing the public that decreasing energy intake and increasing energy expenditure will prevent further weight gain or actually result in weight loss. Hence, lack of this knowledge is not the reason for the rapidly expanding prevalence of overweight. A more likely reason is failure to understand the reasons certain eating and activity patterns become established and, hence, an inability to change them.

$^{1}$From the US Department of Agriculture/Agricultural Research Service Children’s Nutrition Research Center, Baylor College of Medicine, Houston.

$^{2}$Address reprint requests to WC Heird, USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine, 1100 Bates Street, Houston, TX 77030-2600. E-mail: wheird@bcm.tmc.edu.
The major importance of the findings of Spruijt-Metz et al as well as those of others is not simply that these studies identify behavioral characteristics of parents that are related to their children's fat mass. Rather, it is that they identify parental behaviors that perhaps can be modified. Specifically, the data suggest that highly controlling and restrictive parental feeding strategies contribute to positive energy balance by interfering with children's ability to self-regulate energy intake. This knowledge should be helpful in developing effective strategies to modify parental feeding practices and, hence, children's eating practices. On the other hand, responsible parenthood includes being concerned about children's size and food intake. Thus, modifying parental feeding practices is not likely to be easy.

Unfortunately, Spruijt-Metz et al failed to suggest specific ways to change parental feeding practices. Early in the evolution of this editorial, I reasoned that if restrictive behaviors result in increased intake, opposite behaviors should result in lower intakes. However, I soon realized just how naïve this reasoning probably seems to behavioral scientists. What I think I have learned instead is that any parental feeding practice that focuses the child's attention away from his or her internal cues of hunger and satiety is likely to be unsuccessful (12). The key, it seems, is to allow children to respond to these well-developed internal cues rather than to parental pressure to consume a specific amount of food or a specific food. The challenge, now, is to determine how to do this.

REFERENCES