

sues. These issues may be reasons for medical graduates not choosing family medicine residencies, and this raises serious implications for the programming used to inspire more medical graduates into family medicine.

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Macronutrients and Pediatric Obesity

To the Editor:

The epidemic of overweight now extends into the pediatric population served by family physicians. Recent evidence suggests a negative energy balance alone may not be successful for the treatment of overweight in some children, leading to suggestions to reduce the amount of carbohydrate in the diet.¹ In the community where we practice, the prevalence of hyperinsulinemia was 30% in children referred to us for a dietary intervention study. Most had failed standard medical nutrition therapy for weight management offered by their primary care physician. We, like others, are experimenting with a lower carbohydrate treatment diet for these children to normalize laboratory values and have had some successes.¹ However, it cannot be assumed that dietary strategies to prevent childhood obesity are the same as for treatment. At least one research group suggests that the macronutrient composition of an isocaloric diet may be associated with

the development of overweight in children.² However, although it is assumed that reducing carbohydrates in the diet of children is safe, any long-term health consequences for growing children have not been established. Since we know that altering the composition of the diet is a difficult task for both children and parents, we believe it is important to test the many proposed etiologies before taking clinical action.

We have studied local children participating in the Growing Up FIT! Program, an elementary school-based intervention program designed to reduce the prevalence of overweight among children. In the study, 37.7% of 450 rural children (ages 8-11 years) were found to have a body mass index (BMI) greater than or equal to the 85th percentile of the Centers for Disease Control national reference population for age and sex. We analyzed baseline dietary intake data for differences in macronutrient and energy composition between children grouped by BMI percentiles. The dietary data were collected in 2000, by trained interviewers, using a standardized 24-hour recall methodology. There were 276 usable dietary recalls (51% males, 49% females). The recall data were analyzed using a food composition database and Microsoft's Excel.

Some have suggested that specific eating patterns may explain the increases in adiposity now being observed in children.² We tested the hypothesis that increased carbohydrate consumption is positively associated with the proportion of children classified as "at risk of overweight" (85th-95th percentile for age- and gender-adjusted BMI) or "overweight" (\geq 95th percentile). Difference of means tests (2-tailed *t* tests; $P=.05$) were used to examine carbohydrate consumption in the two groups, and no significant

differences were found in the percentages of diet from carbohydrates between the two groups. For children with BMIs at or greater than the 85th percentile, intake was 53.9%. For children with BMIs less than the 85th percentile, intake was 53.7% ($t=.19$, $P<.85$). It appears, in our population, that the proportion of the diet coming from carbohydrates was similar for children who were at risk of overweight and overweight.

The only group of children who were significantly less overweight in this population were urban girls ($P<.05$). Tests for macronutrient and energy intake differences among them and other girls in the population revealed no difference in carbohydrate consumption; however, urban white girls consumed significantly less energy than rural or urban girls or boys ($P<.01$). Dr Borre is continuing to explore the role of energy balance as a contributing factor in overweight among this population by increasing the sample size.

Our data illustrate the rising rate of overweight and obesity in children. Our work does not support changing current anticipatory guidance that states that children should consume a diet with a minimum of 130 grams carbohydrate/day.³

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