

# Nutrition

*focus*

## Patient summary

### PREBIOTIC SUPPLEMENTATION IMPROVES APPETITE CONTROL IN CHILDREN WITH OVERWEIGHT AND OBESITY

#### Background

One in three Americans is either overweight or obese. Obesity is also affecting an increasing number of children. Childhood obesity has been shown to predict obesity in adulthood. While, it is difficult for children to lose weight through dieting, prebiotics have been shown to help with appetite control in adults. Better appetite control can lead to a fewer calories consumed resulting in weight loss. There is limited research on prebiotic supplementation and appetite regulation in children.

#### Purpose

Past research shows a relationship between prebiotic supplementation and better appetite control in adults. However, limited research studies this relationship in children. This study examined the effects of prebiotic supplementation on appetite control and energy intake in children.

#### Population

This study included 42 male and female children ages 7 to 12 years old with a body mass index (BMI) greater than the 85<sup>th</sup> percentile.

#### Procedure

This study was randomized, double-blinded, and placebo controlled. The participants were randomly assigned to either the control (prebiotics) or the placebo group. Both the prebiotic and the placebo packets were added to water and consumed daily over a 16-week trial period. The prebiotic fiber content was increased over a two-week period to avoid potential symptoms. Diet and exercise were held constant during the study.

#### Results

The children receiving the prebiotic supplement showed better appetite control and higher ratings of satiety compared to the children taking the placebo. The older children (11 and 12 year olds) taking the prebiotic consumed less food measured at a breakfast buffet by the end of the 16-week trial compared to week one of the trial. This same effect was not seen in the younger children (ages 7-10 years old). Prebiotic supplementation also trended towards reducing BMI in the control group.

Prebiotic supplementation results in better appetite control in children

#### Conclusion

Prebiotic supplementation in children resulted in better appetite control. In addition, prebiotic supplementation reduced energy intake in older children (ages 11 and 12) but not in younger children (ages 7-10). Prebiotic supplementation may be used to help regulate appetite control in children resulting in fewer calories consumed. A reduction in energy consumption may result in weight loss of overweight and obese children.

#### Limitations

Using a parent-reported food record has its own known limitations in a study. In addition, the participants in this study were mostly white and of middle to high socioeconomic status, limiting the generalizability of this study to more diverse populations.

Reference: Hume, M. P., Nicolucci, A. C., & Reimer, R. A. (2017). Prebiotic supplementation improves appetite control in children with overweight and obesity: a randomized controlled trial. *The American Journal of Clinical Nutrition*, 105(4), 790-799. doi:10.3945/ajcn.116.140947