

# Gut Health Supplements May Treat Pediatric Obesity

Butyrate supplements taken orally may be an effective treatment against obesity in pediatric patients, according to a study recently published in JAMA.

As rates of pediatric obesity have spiked in recent years, investigators saw a need to limit the burden of obesity through therapeutic strategies. Gut microbiome (GM) has been theorized as a factor in obesity, with a fiber rich diet leading to a metabolically healthy GM.

Butyrate dietary intake is mainly increased through nondigestible carbohydrates, which are fermented by the GM. Butyrate could potentially be used to treat obesity, leading investigators to conduct a Butyrate Against Pediatric Obesity trial to determine if butyrate supplementation is an effective treatment against pediatric obesity.

Participants in the trial included patients aged 5 to 17 years from the Tertiary Center for Pediatric Nutrition of the Department of Translational Medical Science at the University of Naples. To be eligible, patients needed to have a body mass index (BMI) greater than the 95th percentile of their sex and age.

Exclusion criteria included bariatric surgery, allergies, cancer, autoimmune diseases, chronic hematologic diseases, cystic fibrosis, celiac disease, respiratory disease, urinary tract diseases, gastrointestinal diseases, genetic and metabolic diseases, immunodeficiencies, neurologic or neuropsychiatric disorders, and inflammatory bowel diseases.

Patients were also excluded if they had participated in other trials or been treated with vitamins, metformin, prebiotics, probiotics, or postbiotics.

Standard care for obesity was given to the butyrate group, along with a sodium butyrate capsule. Dosages were 20 mg divided by body weight in kilograms and were given daily with a max of 800 mg per day. The control group was given cornstarch capsules alongside standard care. Treatment lasted for 6 months.

Capsules could be opened and have their contents dissolved in cases of children who were unable to swallow pills. A balanced Mediterranean diet made up standard care, along with a reduction of sedentary behaviors and at least 1 hour of aerobic activity per day.

The primary outcome was a decrease in BMI by 0.25 or more. Secondary outcomes included changes in cholesterol, serum glucose, insulin, waist circumference, low-density lipoprotein cholesterol (LDL-C), high-density lipoprotein cholesterol (HDL-C), ghrelin, triglyceride, microRNA-221, and interleukin-6 (IL-6) levels.

Patients were divided 1 to 1 into treatment groups, and at least 25 participants per group had an  $\alpha$  level of .05 and power of 0.9. Monitoring was completed by an independent trial monitor, who examined clinical forms for clarity, completeness, and consistency.

The medical history of patients was gathered upon enrollment, with monthly physical examinations taking place following enrollment. Full clinical evaluations were used to monitor the safety of treatment.

At the end of the study, there were 23 children in the butyrate group and 25 in the control group. Children in the butyrate group had a higher average age and greater BMI SD scores.

There were more children in the butyrate group who saw a reduction in BMI SD scores equal or greater than 0.25 than in the control group. Secondary outcomes also improved more in the butyrate group than the control group. Adverse events from butyrate included headache and mild nausea.

As butyrate supplements lowered BMI scores, investigators concluded they may be an effective treatment against pediatric obesity.

## Reference

Coppola S, Nocerino R, Paparo L, Bedogni G, Calignano A, Di Scala C, et al. Therapeutic effects of butyrate on pediatric obesity: a randomized clinical trial. *JAMA Netw Open*. 2022;5(12):e2244912. doi:10.1001/jamanetworkopen.2022.44912

[Gut health supplements may treat pediatric obesity - Health Reporter \(health-reporter.news\)](#)

The screenshot shows a news article from the 'Health Reporter' website. The header includes the site's logo and navigation links for 'Coronavirus', 'Dental', 'Diet & Nutrition', 'Fitness', and 'Health'. The main title of the article is 'Gut Health Supplements May Treat Pediatric Obesity'. Below the title, it says 'On Dec 9, 2022' and shows sharing options for social media. The article text discusses the therapeutic effects of butyrate on pediatric obesity, mentioning a study published in JAMA and the potential role of gut microbiome (GM). It details the study participants, exclusion criteria, and standard care. The article is categorized under 'MEDICAL SCIENCE'.