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## The effect of synbiotic supplementation on growth parameters in mild to moderate failure to thrive children aged 2-5 years

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**Statement of the Problem:** Undernutrition is a major problem especially in developing countries. Synbiotic (probiotic bacteria and prebiotic) has beneficial effects on the immune system and gastrointestinal tract but the results of the studies on the effect of synbiotic supplementation on growth parameters are conflicting

**Methods:** A randomized, triple-blind, placebo-controlled trial was conducted involving 69 children aged 2-5 years with mild to moderate FTT, who were assigned at random to receive symbiotic supplementation (109 colony-forming units) or placebo for 30 days. The weights, height, and BMI were recorded in a structured diary, and the questionnaires were completed to monitor the numbers of infection episodes, admission to hospital and appetite improvement during the study.

**Results:** There were no differences in the demographic characteristic between the two groups. The mean weight was similar at baseline. After 30 days of intervention, the mean weight of the participants in the synbiotic group increased significantly than those in the placebo group ( $600\pm37$  vs  $74\pm32$  gr/month, P:.000). BMI changes in synbiotic and placebo group was 0.44 and 0.07kg/m2 that the differences among the two groups were significant (p:0.045). Furthermore the height increment in synbiotic and placebo group 7(21.87%) children and in the control group, 8(25%) children had fever episodes (p:.862). Moreover antibiotic consumption in the case and control group was 4(12.5%) and 6(18.75%) respectively (p:0.520).

**Conclusion:** Administration of 30 days synbiotic supplementation may significantly improve weight and BMI in Iranian children with mild to moderate FTT, but there is no effect on the height in this study. Further studies should be designed to found out the effect of synbiotic on growth parameters in undernourished and well-nourished children.

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