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Meta-analysis of increased bifidobacteria through inulin consumption

Abstract

Inulin is thought to increase the number of bifidobacteria in the intestine by providing an ideal environment. In this study, we performed a meta-analysis to examine the effect of inulin on bifidobacteria in the gastrointestinal tract of human. We searched PubMed for articles on the association between inulin and bifidobacteria, resulting in the identification of five papers. Two articles included two separate experiments. As a result, seven experiments were analyzed in this meta-analysis.

The seven experiments included in this meta-analysis involved 246 subjects (123 in the experimental group and 123 in the control group). All results contained point estimations of increased bifidobacteria by inulin consumption. Seven studies had heterogeneity ($I^2 = 81\%$; $p < 0.01$), suggesting the use of the random effect model. The random effect model displayed an integrated effect of an 0.81 log₁₀ count/g increase (95% confidence interval: 0.63, 0.98). As a result of the meta-analysis, it was confirmed that inulin increases bifidobacteria in the gastrointestinal tract.