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Can prebiotics assist in the Management of Cognition and Weight Gain in Schizophrenia?

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Abstract

Schizophrenia is among the top half of the 25 leading causes of disabilities worldwide with a 10-20 year decrease in life expectancy. Ineffective pharmacotherapy in the management of cognitive deficits and weight gain are known to be significant contributors; therefore interventions that may mitigate one, or both, of these parameters would be highly beneficial. Manipulation of the gut microbiome using dietary supplements such as prebiotics may be one such intervention. Preclinical studies have shown that a 2-4 week dietary supplementation with a prebiotic has beneficial effects on learning and memory, and prevents pro-inflammatory signals that are detrimental to cognitive processes. Furthermore, prebiotics influence metabolism, and in obesity they increase the expression of anorexigenic gut hormones such as peptide tyrosine tyrosine, glucagon-like peptide 1 and leptin, as well as decrease levels of orexigenic hormones such as ghrelin. Despite compelling evidence for the pro-cognitive and neuroprotective effects of prebiotics in rodents, their ability to alleviate cognitive deficits or enhance cognition needs to be evaluated in humans. Here we suggest that important symptoms associated with