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Abstract

The consumption of a high-fiber diet is associated with lowering the risk of many chronic diseases including colon cancer, cardiovascular disease, diabetes, hypertension, and obesity. Scientific evidence indicates that the consumption of soluble fiber, specifically oat beta-glucan, has positive effects on the glycemic response. The purpose of this systematic review was to determine the physiological effects of the ingestion of oat beta-glucan on glucose and insulin levels in adults. A PubMed and EBSCO search was performed with the search terms “glucose and oat beta-glucan”. Studies were limited to those published in English within the past 5 years. Of the seven randomized control trial studies reviewed, all evaluated the impact of oat beta-glucan on glucose levels while four additionally evaluated its effect on insulin and satiety levels. Five of the studies showed that oat beta-glucan significantly decreased postprandial glucose peaks in the glycemic response as compared to the controls. Insulin and satiety levels had more mixed results. Five studies indicated that oat beta-glucan significantly decreased postprandial insulin peaks and two studies showed it increased satiety levels significantly. Overall, this research supports the idea that oat beta-glucan may help control glucose and insulin peaks in the postprandial glycemic response. This may be beneficial to those who could benefit from additional regulation of the glycemic response, such as patients with diabetes mellitus. Future research is needed to investigate the effectiveness of different types of oat beta-glucan sources with adults diagnosed with diabetes mellitus.