Influence of Food Glycemic Index on Cardiorespiratory Endurance ($\dot{V}O_2max$) in Sport Performance : A Scoping Review

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Abstract

$\dot{V}O_2max$ is the body's ability to take up, transport, and use oxygen during intense physical activity. A maximal $\dot{V}O_2max$ can enhance performance during exercise. One factor influencing $\dot{V}O_2max$ is the availability of energy in the body, with carbohydrates and fats serving as the primary energy sources during sports activities. Athletes often consume carbohydrates before exercising to provide energy and maintain muscle glycogen reserves. Carbohydrate foods' glycemic index (GI) can affect metabolic efficiency and athletic performance.This scoping review aims to map and evaluate the existing literature on the effect of dietary glycemic index on $\dot{V}O_2max$ in people with sports activities and provide insights that can guide nutritional strategies to improve aerobic performance. This review follows the Arksey and O'Malley framework and reviews research findings using the PRISMA Scr (Priority Reporting Items for Systematic Review Meta-analysis Extension for Scoping Reviews) framework. Five electronic databases were systematically searched, including PubMed, PMC, ScienceDirect, Google, and Google Scholar. Studies published in English after 2014 were eligible for selection. Eligibility criteria focused on experimental studies. Data were obtained and mapped based on relevant variables such as study design, type of intervention, and outcomes. Glycemic index levels of various foods contribute to $\dot{V}O_2max$. Consumption of foods with a low glycemic index can increase $\dot{V}O_2max$ in sports participants. This finding provides important insights for developing appropriate nutritional strategies for athletes to improve performance during sports.

Keywords: *Glycemic Index; $\dot{V}O_2max$; Sport Performance.*