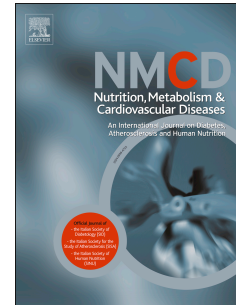


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Relationship between sleep duration and childhood obesity: systematic review including the potential underlying mechanisms

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Abstract:

Aim: The prevalence of obesity is continually increasing worldwide. Determining risk factors for obesity may facilitate effective preventive programs. The present review focuses on sleep duration as a potential risk factor for childhood obesity. The aim is to summarize the evidence on the association of sleep duration and obesity and to discuss the underlying potential physiological and/or pathophysiological mechanisms.

Methods: The Ovid MEDLINE, Scopus and Cochrane Central Register of Controlled Trials (CENTRAL) databases were searched for papers using text words with appropriate truncation and relevant indexing terms. All studies objectively measuring sleep duration and investigating the association between sleep duration and obesity or factors (lifestyle and hormonal) possibly associated with obesity were included, without making restrictions based on study design or language. Data from eligible studies were extracted in tabular form and summarized narratively.

Results: After removing duplicates, 3540 articles were obtained. Finally, 33 studies (including 3 randomized controlled trials and 30 observational studies) were included in the review.

Conclusion: Sleep duration seems to influence weight gain in children, however, the underlying explanatory mechanisms are still uncertain. In our review only the link between short sleep duration and the development of insulin resistance, sedentarism and unhealthy dietary patterns could be verified, while the role of other mediators, such as physical activity, screen time, change in ghrelin and leptin levels, remained uncertain. There are

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