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The Effects of Diet on Acne: A Literature Review

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Abstract

Background: Acne is a multi-factorial chronic inflammatory skin condition of the pilosebaceous unit that can be impacted by keratin proliferation, sebum production, bacteria, and hormone levels. Previous studies have shown conflicting evidence if diet can impact the pathogenesis of acne, and if so, which foods are acne protective and which are acnegenic. Some dietary factors that have been investigated include major dietary factors, such as carbohydrates, dairy and fat, and minor factors, such as, supplements, salt content and sweets.

Objective: To conduct a literature review to condense some of the available information and find a more definitive association between dietary nutrients and acne pathogenesis to help guide clinical decision making and incorporate integrative medicine into patient care.

Methods: This study was designed as a literature review using data gathered from randomized controlled trials (RCTs), systematic reviews, and observational studies. The terms “acne” AND “diet” were searched on Medline via EBSCOhost and PubMed to find articles over a 15-year time span from 2007-2022. A total of 10 articles were included in this review. More specifically, five systematic reviews, four randomized control trials and one observational study.

Results: Nine out of our 10 articles discussed carbohydrates' effect on acne and all agreed that a high glycemic index diet increases hyperinsulinemia and IGF-1 leading to increased production of both androgens and sebum which worsen acne lesions. For fats it was concluded that omega-6 fatty acids may be acnegenic while omega-3 fatty acids can be acne protective. Low-fat skim milk in particular was found to exacerbate acne lesions, but the carbohydrate content of milk was found to be a culprit. The question of chocolate’s effect on acne is still controversial due to its fat, sugar, and carbohydrate content. However, some studies show that the cocoa content may be to blame.

Conclusion: Overall, the recommendation is that low glycemic load diets, or the Mediterranean diet, may be beneficial in patients with acne and should be considered by dermatologists who are giving dietary recommendations to help holistically treat their patients.