

IMPACT OF STATIN THERAPY ON LDL REDUCTION AND ITS NUTRITIONAL IMPLICATIONS: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Elevated low-density lipoprotein (LDL) cholesterol is a major contributor to cardiovascular disease risk. Statins are widely prescribed as a first-line treatment to lower LDL levels, although treatment outcomes can vary based on drug combinations and the patient's nutritional status.

Objective: This review aims to systematically assess the effectiveness of statin therapy in lowering LDL cholesterol and to explore the potential benefits of combination treatments and the role of nutrition in enhancing therapeutic outcomes.

Methods: A systematic review was conducted using the PRISMA guidelines. Literature searches were performed on PubMed for the period between 2019 and 2024, focusing on clinical trials, randomized controlled trials, and meta-analyses involving human subjects. After screening and eligibility assessments, seven studies were included in the final analysis.

Results: Statins were consistently found to reduce LDL cholesterol and lower the risk of cardiovascular events. Combination therapies, including statins with ezetimibe, omega-3 fatty acids, or fenofibrate, yielded superior outcomes compared to monotherapy. Rosuvastatin demonstrated greater LDL-lowering potential than atorvastatin, though with a slightly increased risk of diabetes. Moreover, nutritional factors—such as adequate fiber intake, healthy fats, and micronutrients like vitamin D and magnesium—were shown to support and potentially enhance the effectiveness of statin treatment.

Conclusion: Statin therapy, whether used alone or in combination with other agents, is effective in managing LDL cholesterol and preventing cardiovascular disease. Integrating pharmacological treatment with personalized nutritional strategies may further improve therapeutic success and long-term health outcomes in patients with dyslipidemia.

Keywords: LDL cholesterol; Statins therapy; Nutrition impact