

Effects of Mushroom Consumption on Cardiometabolic Disease Risk Factors: A Systematic Review of Randomized Controlled Trials

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Objectives: Mushrooms are edible fungi containing bioactive compounds that may elicit health benefits. This systematic review aimed to assess the effects of whole mushroom consumption on cardiometabolic disease risk factors.

Methods: Three researchers independently screened 700 articles published through July 2021, using searches developed for PubMed, CINAHL, Web of Science, Scopus, and Cochrane Library databases. Inclusion criteria were: English language; subjects aged ≥ 18 years; comparison of higher vs. lower or no mushroom consumption; reporting ≥ 1 outcome: diastolic and systolic blood pressure or serum/plasma lipids (total, HDL, and LDL cholesterols, or triglycerides); peer-reviewed RCTs.

Results: We identified 9 RCTs that met our inclusion criteria. The qualified RCTs included the following experimental design features:

6 placebo-controlled, parallel design; 3 non-placebo controlled (post-intervention vs. baseline); 4 included fresh mushrooms, 5 included dried; all 9 provided partial dietary control (i.e. mushrooms only). We found insufficient data to conduct a meta-analysis, therefore, we completed a qualitative assessment of the data. Among the 9 RCTs, mushroom intake did not statistically significantly affect cardiometabolic disease risk factors. The risk factors included systolic or diastolic blood pressures (1/3 studies report a decrease in both); total cholesterol (1/5 studies report a decrease); HDL cholesterol (2/6 studies report an increase); or LDL cholesterol (1/5 studies report a decrease). Four of five studies reported mushroom consumption decreased triglyceride concentrations.

Conclusions: Limited evidence suggests that mushroom consumption may improve serum/plasma triglycerides but not other lipids, lipoproteins, or blood pressures. The paucity of RCTs underscore the need for future research assessing mushrooms for cardiometabolic health, including data to conduct a meta-analysis.

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