INPLASY PROTOCOL

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Support: **None.**

Review Stage at time of this submission: **The review has not yet started.**

Conflicts of interest:
None declared.

Does flavonoid supplementation alleviate non-alcoholic fatty liver disease? A systematic review and meta-analysis of randomized controlled trials

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Review question / Objective: **To evaluate whether flavonoid supplementation alleviates non-alcoholic fatty liver disease.**
Condition being studied: **Effects of flavonoid supplementation on adults with non-alcoholic fatty liver disease.**
Information sources: **Systematic literature search will be conducted in Cochrane Central Registry of Controlled Trials (CENTRAL), PubMed, Web of Science, and Science Direct Online.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 June 2022 and was last updated on 13 June 2022 (registration number INPLASY202260057).

INTRODUCTION

Review question / Objective: **To evaluate whether flavonoid supplementation alleviates non-alcoholic fatty liver disease.**

Condition being studied: **Effects of flavonoid supplementation on adults with non-alcoholic fatty liver disease.**

METHODS

Participant or population: **Adults with non-alcoholic fatty liver disease.**

Intervention: **Flavonoid supplementation.**

Comparator: **Control group without flavonoid supplementation.**

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Study designs to be included: Randomized controlled trials.

Eligibility criteria: Randomized controlled trials to investigate the effects of flavonoid supplementation on adults with non-alcoholic fatty liver disease.

Information sources: Systematic literature search will be conducted in Cochrane Central Registry of Controlled Trials (CENTRAL), PubMed, Web of Science, and Science Direct Online.

Main outcome(s): Liver stiffness and function, lipid profile, inflammation and insulin resistance.

Quality assessment / Risk of bias analysis: Two researchers who have been trained in literature quality evaluation will carry out literature searching, screening, quality evaluation, and data extraction. If any differences arise, they will be resolved through rechecking or discussion or consultation with relevant experts. The Risk of Bias tool (RoB) from the Cochrane Collaboration will be used to assess the risk of bias of the randomized controlled studies included in this systematic review and meta-analysis.

Strategy of data synthesis: The standardized mean difference (SMD) will be used to compare the continuous variables when different methods are used to evaluate the same outcome, whereas mean difference (MD) will be used when the same method is used. The SMD or MD of each outcome will be calculated using a random-effects model. The potential existence of publication bias will be determined by the Egger's test, with visual inspection of the distributions of the effect size on the funnel plot. All statistical results with P value <0.05 will be considered statistically significant.

Subgroup analysis: To evaluate the effects of flavonoid supplementation on different outcomes in adults with non-alcoholic fatty liver disease.

Sensitivity analysis: Sensitivity analysis will be performed to evaluate the influence of each study on the overall effect by eliminating them individually.

Country(ies) involved: China, UK.

Keywords: flavonoid, non-alcoholic fatty liver disease, RCTs, systematic review, meta-analysis.

Contributions of each author:
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Author 4 - Yueyue He.
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