INPLASY PROTOCOL

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Support: **None.**

Review Stage at time of this submission: **Formal screening of search results.**

Conflicts of interest:
None declared.

Lifestyle changes at midlife to prevent cardiovascular disease: a systematic review protocol

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Review question / Objective: **What kind of evidence-based diet and physical activity should or can be recommended to adults in order to reduce their cardiovascular risk.**
Condition being studied: **Cardiovascular disease.**
Eligibility criteria: **Publications will be extracted independently by two researchers according to defined search string and get color coded as agreed on: Yellow: studies and RCTs of the association of nutrients, physical activity and cardiovascular outcomes for discussion. Green: meta-analysis of studies and RCTs of the association of nutrients, physical activity and cardiovascular outcomes. Green subgroup AMSTAR-2: meta-analysis of studies and RCTs of the association of food-patterns and cardiovascular outcomes. The AMSTAR-2 checklist will be used for evaluating the methodological quality of these studies.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 April 2022 and was last updated on 10 April 2022 (registration number INPLASY202240061).

*Both authors contributed equally to the project.

INTRODUCTION

Review question / Objective: **What kind of evidence-based diet and physical activity should or can be recommended to adults in order to reduce their cardiovascular risk.**

Rationale: **Cardiovascular disease is the leading cause of mortality worldwide. Dietary factors as well as physical activity activity seem to play a major role. However, evidence to specific recommendations with regard to cardiovascular disease and mortality is still limited.**

Condition being studied: **Cardiovascular disease.**

METHODS

Search strategy: The search string read: (sport OR exercise OR workout OR physical activity OR lifestyle OR nutrition OR nutrients OR supplements OR vitamins OR meat OR legumes OR vegetable OR fruit OR plant based OR carbohydrate OR fat OR trans-fat OR saturated fat OR unsaturated OR protein OR calorie OR diet OR dietary OR energy OR fibre OR alcohol OR smoking OR smoker) AND (cardiovascular OR coronary OR coronary artery disease OR infarction OR myocardial infarction OR heart attack OR angina OR ischemia OR acute coronary syndrome OR macroangiopathy OR cerebrovascular OR cerebrovascular disease OR stroke OR apoplexy OR insult OR apoplectic OR apoplexia cerebri OR brain attack OR peripheral vascular OR peripheral arterial OR peripheral artery disease OR peripheral artery occlusive OR atherosclerosis OR atherosclerotic OR arteriosclerosis OR arteriosclerotic OR plaque OR intima media thickness OR acute coronary syndrome).

Participant or population: Adults.

Intervention: The interventions need to comprise major foods able to add up to entire nutrition and, if available, physical activity.

Comparator: The comparators need to comprise major foods able to add up to entire nutrition and, if available, physical activity.

Study designs to be included: Meta-analyses of observational studies and RCTs.

Eligibility criteria: Publications will be extracted independently by two researchers according to defined search string and get color coded as agreed on: Yellow: studies and RCTs of the association of nutrients, physical activity and cardiovascular outcomes for discussion. Green: meta-analysis of studies and RCTs of the association of nutrients, physical activity and cardiovascular outcomes. Green subgroup AMSTAR-2: meta-analysis of studies and RCTs of the association of food-patterns and cardiovascular outcomes. The AMSTAR-2 checklist will be used for evaluating the methodological quality of these studies.

Information sources: The open-access electronic database PubMed is to be searched for meta-analyses of observational studies and RCTs published within the recent 5 years.

Main outcome(s): Cardiovascular mortality and cardiovascular disease: total mortality, cardiovascular disease, cardiovascular disease incidence, cardiovascular disease mortality, coronary heart disease, coronary heart disease incidence, coronary heart disease mortality, stroke, stroke incidence, stroke mortality.

Additional outcome(s): Not applicable.

Quality assessment / Risk of bias analysis: As to bias meta-analyses and included studies will be assessed according to the methodology applied by the respective authors. Only RCT-derived meta-analyses will be rated as proof. Observational studies will be rated as hypothetical suggestions and suggestions to define hypotheses.

Strategy of data synthesis: Not applicable, identified meta-analyses will be discussed independently.

Subgroup analysis: Subgroups will not be analyzed, but may add to the discussion.

Sensitivity analysis: Not applicable.

Language: English.

Country(ies) involved: Germany.

Other relevant information: Both authors contributed equally to the project.

Keywords: food pattern; dietary pattern; nutrition; physical activity; prevention; cardiovascular disease; coronary heart disease; stroke; cerebrovascular disease.

Dissemination plans: We intend to publish the review on completion.

Contributions of each author:

Author 1 - Birgit-Christiane Zyriax - designed the project, independently screened the abstracts and full-text records assessed for eligibility, and wrote the manuscript.
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