**Supplemental File:**

**S1 PRIOR checklist**

**S2 Search strategy**

**S3 Risk of Bias in Systematic Reviews**

**S4 Characteristics table**

**S5 GRADE table**

**S6 Risk of Bias in primary studies**

**File S1: PRIOR checklist**

**PRIOR Checklist**

(Gates M, Gates A, Pieper D, et al. Reporting guideline for overviews of reviews of healthcare interventions: development of the PRIOR statement. *BMJ* 2022;378:e070849. doi:10.1136/bmj-2022-070849.)

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| **Section** Topic | **#** | **Item** | **Location reported** |
| **TITLE** | |  |  |
| Title | 1 | Identify the report as an overview of reviews. | title |
| **ABSTRACT** | |  |  |
| Abstract | 2 | Provide a comprehensive and accurate summary of the purpose, methods, and results of the overview of reviews. | abstract |
| **INTRODUCTION** | |  |  |
| Rationale | 3 | Describe the rationale for conducting the overview of reviews in the context of existing knowledge. | Last paragraph - introduction |
| Objectives | 4 | Provide an explicit statement of the objective(s) or question(s) addressed by the overview of reviews. | 1st section - methodology |
| **METHODS** | |  |  |
| Eligibility criteria | 5a | Specify the inclusion and exclusion criteria for the overview of reviews. If supplemental primary studies were included, this should be stated, with a rationale. | PICOS – methodology section |
| 5b | Specify the definition of ‘systematic review’ as used in the inclusion criteria for the overview of reviews. | Study design – methodology  section |
| Information sources | 6 | Specify all databases, registers, websites, organizations, reference lists, and other sources searched or consulted to identify systematic reviews and supplemental primary studies (if included).  Specify the date when each source was last searched or consulted. | Search strategy – methodology section |
| Search strategy | 7 | Present the full search strategies for all databases, registers and websites, such that they could be reproduced. Describe any search filters and limits applied. | Supplemental file – referenced in methodology section |
| Selection process | 8a | Describe the methods used to decide whether a systematic review or supplemental primary study (if included) met the inclusion criteria of the overview of reviews. | Screening – methodology section |
| 8b | Describe how overlap in the populations, interventions, comparators, and/or outcomes of systematic reviews was identified and managed during study selection. | Data extraction in methodology section |
| Data collection process | 9a | Describe the methods used to collect data from reports. | Data extraction in methodology section |
| 9b | If applicable, describe the methods used to identify and manage primary study overlap at the level of the comparison and outcome during data collection. For each outcome, specify the method used to illustrate and/or quantify the degree of primary study overlap across systematic reviews. | n/a |
| 9c | If applicable, specify the methods used to manage discrepant data across systematic reviews during data collection. | n/a |
| Data items | 10 | List and define all variables and outcomes for which data were sought. Describe any assumptions made and/or measures taken to identify and clarify missing or unclear information. | Summarised figure 1and referenced in methodology section |
| Risk of bias assessment | 11a | Describe the methods used to *assess* risk of bias or methodological quality of the included systematic reviews. | ROBIS tool Referenced in quality appraisal section - table in supplemental file |
| 11b | Describe the methods used to *collect* data on (from the systematic reviews) and/or *assess* the risk of bias of the primary studies included in the systematic reviews. Provide a justification for instances where flawed, incomplete, or missing assessments are identified but not re-assessed. | Included in GRADE assessment in best evidence syntheses section |
| 11c | Describe the methods used to *assess* the risk of bias of supplemental primary studies (if included). | n/a |
| Synthesis methods | 12a | Describe the methods used to summarize or synthesize results and provide a rationale for the choice(s). | Best evidence synthesis using GRADE criteria – methodology section |
| 12b | Describe any methods used to explore possible causes of heterogeneity among results. | n/a |
| 12c | Describe any sensitivity analyses conducted to assess the robustness of the synthesized results. | n/a detail will be included in phase 2 publication |
| Reporting bias assessment | 13 | Describe the methods used to *collect* data on (from the systematic reviews) and/or *assess* the risk of bias due to missing results in a summary or synthesis (arising from reporting biases at the levels of the systematic reviews, primary studies, and supplemental primary studies, if included). | n/a |
| Certainty assessment | 14 | Describe the methods used to *collect* data on(from the systematic reviews) and/or *assess* certainty (or confidence) in the body of evidence for an outcome. | Best evidence synthesis using GRADE criteria – methodology section |
| **RESULTS** | |  |  |
| Systematic review and supplemental primary study selection | 15a | Describe the results of the search and selection process, including the number of records screened, assessed for eligibility, and included in the overview of reviews, ideally with a flow diagram. | PRISMA flow chart. Description of reviews referenced and available in results section |
| 15b | Provide a list of studies that might appear to meet the inclusion criteria, but were excluded, with the main reason for exclusion. | Will be included in phase 2 reported separately |

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| --- | --- | --- | --- |
| **Section** Topic | **#** | **Item** | **Location reported** |
| Characteristics of systematic reviews and supplemental primary studies | 16 | Cite each included systematic review and supplemental primary study (if included) and present its characteristics. | Supplemental file. Intervention and outcomes section – table 1 & 2 referenced and reported in results section |
| Primary study overlap | 17 | Describe the extent of primary study overlap across the included systematic reviews. | Description and figure 3 – results section |
| Risk of bias in systematic reviews, primary studies, and supplemental primary studies | 18a | Present assessments of risk of bias or methodological quality for each included systematic review. | Quality section – results Supplemental file |
| 18b | Present assessments (*collected* from systematic reviews or *assessed* anew) of the risk of bias of the primary studies included in the systematic reviews. | Supplemental file |
| 18c | Present assessments of the risk of bias of supplemental primary studies (if included). | n/a |
| Summary or synthesis of results | 19a | For all outcomes, summarize the evidence from the systematic reviews and supplemental primary studies (if included). If meta-analyses were done, present for each the summary estimate and its precision and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | Table 3 – best evidence syntheses in results section |
| 19b | If meta-analyses were done, present results of all investigations of possible causes of heterogeneity. | n/a |
| 19c | If meta-analyses were done, present results of all sensitivity analyses conducted to assess the robustness of synthesized results. | n/a |
| Reporting biases | 20 | Present assessments (*collected* from systematic reviews and/or *assessed* anew) of the risk of bias due to missing primary studies, analyses, or results in a summary or synthesis (arising from reporting biases at the levels of the systematic reviews, primary studies, and supplemental primary studies, if included) for each summary or synthesis assessed. | Included in GRADE assessment in results section |
| Certainty of evidence | 21 | Present assessments (*collected* or *assessed* anew) of certainty (or confidence) in the body of evidence for each outcome. | GRADE assessment table 3 referenced in results section |
| **DISCUSSION** | | |  |
| Discussion | 22a | Summarize the main findings, including any discrepancies in findings across the included systematic reviews and supplemental primary studies (if included). | Summary of findings section in discussion section paragraph 1-3 |
| 22b | Provide a general interpretation of the results in the context of other evidence. | Implications section in discussion section – paragraph 6 |
| 22c | Discuss any limitations of the evidence from systematic reviews, their primary studies, and supplemental primary studies (if included) included in the overview of reviews. Discuss any limitations of the overview of reviews methods used. | Strengths and limitations section in Discussion section – paragraph 4 -5 |
| 22d | Discuss implications for practice, policy, and future research (both systematic reviews and primary research). Consider the relevance of the findings to the end users of the overview of reviews, e.g., healthcare providers, policymakers, patients, among others. | Implications and conclusion headings- Discussion section – paragraph 6 |
| **OTHER INFORMATION** | | |  |
| Registration and protocol | 23a | Provide registration information for the overview of reviews, including register name and registration number, or state that the overview of reviews was not registered. | Published – Reference #25 |
| 23b | Indicate where the overview of reviews protocol can be accessed, or state that a protocol was not prepared. | As above |
| 23c | Describe and explain any amendments to information provided at registration or in the protocol. Indicate the stage of the overview of reviews at which amendments were made. | n/a |
| Support | 24 | Describe sources of financial or non-financial support for the overview of reviews, and the role of the funders or sponsors in the overview of reviews. | Online Declaration statement |
| Competing  interests | 25 | Declare any competing interests of the overview of reviews' authors. | none |
| Author information | 26a | Provide contact information for the corresponding author. | Title page |
| 26b | Describe the contributions of individual authors and identify the guarantor of the overview of reviews. | In journal submission portal |
| Availability of data and other materials | 27 | Report which of the following are available, where they can be found, and under which conditions they may be accessed: template data collection forms; data collected from included systematic reviews and supplemental primary studies; analytic code; any other materials used in the overview of reviews. | Supplemental file |

**File S2: SEARCH STRATEGY**

**MEDLINE (OVID)**

**Stroke**

1. cerebrovascular disorders/ or exp basal ganglia cerebrovascular disease/ or exp brain ischemia/ or exp carotid artery diseases/ or exp intracranial arterial diseases/ or exp intracranial arteriovenous malformations/ or exp "intracranial embolism and thrombosis"/ or exp intracranial hemorrhages/ or stroke/ or exp brain infarction/ or vasospasm, intracranial/ or vertebral artery dissection/

2. (stroke or poststroke or post-stroke or cerebrovasc$ or brain vasc$ or cerebral vasc$ or cva$ or apoplex$ or SAH or TIA or transient isch?emic attack or vertebral artery dissection).tw.

3. ((brain$ or cerebr$ or cerebell$ or intracran$ or intracerebral) adj5 (isch?emi$ or infarct$ or thrombo$ or emboli$ or occlus$ or disorder$)).tw.

4. ((brain$ or cerebr$ or cerebell$ or intracerebral or intracranial or subarachnoid) adj5 (haemorrhage$ or hemorrhage$ or haematoma$ or hematoma$ or bleed$)).tw.

5. 1 or 2 or 3 or 4

**Risk reduction**

6. exp Health Education/ or exp Health Promotion/ or exp Health Behavior/ or exp Secondary Prevention/ or exp Counseling/

7. (health education or health promotion or health behavior or secondary prevention or counseling or counsel$).mp.

8. (health adj5 (educat$ or program$ or promotion$ or behavio?r)).tw.

9. (patient adj5 (educat$ or program$)).tw.

10. 6 or 7 or 8 or 9

11. ((secondary or multifactor$) adj3 (prevention or intervention)).tw.

12. (risk adj3 factor$ adj5 (reduc$ or manag$ or intervent$)).tw.

13. (lifestyle adj3 (intervent$ or advice)).tw.

14. (life?style adj3 (intervention$ or advice or alter$ or educat$ or chang$)).tw.

15. (behavio?r$ adj3 chang$).tw.

16. (health?care adj3 advice).tw.

17. non?pharmacologic$.tw.

18. 11 or 12 or 13 or 14 or 15 or 16 or 17

19. ethanol.mp. or exp Ethanol/

20. (alcohol$ or ethanol$ or wine or beer or spirit$ or ((problem or hazardous or harmful) adj3 drink$)).tw.

21. 19 or 20

22. exp Tobacco/ or "Tobacco Use Cessation"/ or exp smoking/ or exp smoking cessation/

23. tobacco.mp.

24. (tobacco or smok$).tw.

25. 22 or 23 or 24

26. diet$.tw.

27. (healthy adj3 eating).tw.

28. (diet adj3 chang$).tw.

29. 26 or 27 or 28

30. exercise.mp. or exp Exercise/

31. (physical adj3 activ$).tw.

32. 30 or 31

33. 10 or 18 or 21 or 25 or 29 or 32

34. 5 and 33

35. limit 34 to humans

**Systematic reviews**

36. meta-analysis/ or literature review/

37. systematic review.pt.

38. meta?analy$.tw.

39. ((systematic or quantitative or methodolog$) adj (overview$ or review$)).tw.

40. integrative research review$.tw.

41. 36 or 37 or 38 or 39 or 40

**42. 35 and 41**

**EMBASE (Platform)**

#1 'cerebrovascular disease'/de OR 'basal ganglion hemorrhage'/exp OR 'brain ischemia'/exp OR 'carotid artery disease'/exp OR 'cerebral artery disease'/exp OR 'brain arteriovenous malformation'/exp OR 'brain embolism'/exp OR 'occlusive cerebrovascular disease'/exp OR 'brain hemorrhage'/exp OR 'cerebrovascular accident'/exp OR 'brain infarction'/exp OR 'brain vasospasm'/exp OR 'artery dissection'/exp

#2 stroke:ti,ab,kw OR poststroke:ti,ab,kw OR 'post stroke':ti,ab,kw OR cerebrovsc\*:ti,ab,kw OR 'brain vasc\*':ti,ab,kw OR 'cerebral vasc\*':ti,ab,kw OR cva\*:ti,ab,kw OR apoplex\*:ti,ab,kw OR sah:ti,ab,kw OR tia:ti,ab,kw OR 'transient ischaemic attack':ti,ab,kw OR 'transient ischemic attack':ti,ab,kw OR 'vertebral artery dissection':ti,ab,kw

#3 ((brain\* OR cerebr\* OR cerebell\* OR intracran\* OR intracerebral) NEAR/5 (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder\*)):ti,ab,kw

#4 ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) NEAR/5 (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)):ti,ab,kw

**#5 #1 OR #2 OR #3 OR #4**

#6 'health education'/exp OR 'health promotion'/exp OR 'health behavior'/exp OR 'secondary prevention'/exp OR 'counseling'/exp

#7 'health education':kw OR 'health promotion':kw OR 'health behavior':kw OR 'health behaviour':kw OR 'secondary prevention':kw OR counseling:kw OR counsel\*:kw

#8 ((health NEAR/5 (educat\* OR program\* OR promotion\* OR behavior OR behaviour))):ti,ab,kw

#9 ((patient NEAR/5 (educat\* or program\*))):ti,ab,kw

**#10** #6 OR #7 OR #8 OR #9

#11 ((secondary OR multifactor\*) NEAR/3 (prevention OR intervention)):ti,ab,kw

#12 (risk NEAR/3 factor\* NEAR/5 (reduc\* OR manag\* OR intervent\*)):ti,ab,kw

#13 (lifestyle NEAR/3 (intervent\* OR advice)):ti,ab,kw

#14 ('life style' NEAR/3 (intervention\* OR advice OR alter\* OR educat\* OR chang\*)):ti,ab,kw

#15 (behavior\* OR behaviour\*) NEAR/3 chang\*):ti,ab,kw

#16 (('health care' OR healthcare) NEAR/3 advice):ti,ab,kw

#17 'non pharmacologic\*':ti,ab,kw OR nonpharmacologic\*:ti,ab,kw

**#18** #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17

#19 'alcohol'/exp OR 'alcohol'

#20 alcohol\*:ti,ab,kw OR ethanol\*:ti,ab,kw OR wine:ti,ab,kw OR beer:ti,ab,kw OR spirit\*:ti,ab,kw OR (((problem OR hazardous OR harmful) NEAR/3 drink\*):ti,ab,kw)

**#21** #19 OR #20

#22 'tobacco'/exp OR 'smoking cessation'/exp OR 'smoking'/exp OR 'tobacco use'/exp

#23 tobacco:kw

#24 tobacco:ti,ab,kw OR smok\*:ti,ab,kw

**#25** #22 OR #23 OR #24

#26 diet\*:ti,ab,kw

#27 (healthy NEAR/3 eating):ti,ab,kw

#28 (diet NEAR/3 chang\*):ti,ab,kw

**#29** #26 OR #27 OR #28

#30 'exercise'/exp OR exercise:kw

#31 (physical NEAR/3 activ\*):ti,ab,kw

**#32** #30 OR #31

**#33** #10 OR #18 OR #21 OR #25 OR #29 OR #32

**#34** #5 AND #33

#35 #5 AND #33 AND [humans]/lim

#36 'meta analysis'/exp OR 'literature review'/exp

#37 'systematic review (topic)'

#38 'meta analysis'/exp OR 'meta analysis'

#39 (systematic:ti,ab,kw OR quantitative:ti,ab,kw OR methodolog\*:ti,ab,kw) AND (overview\*:ti,ab,kw OR review\*:ti,ab,kw)

#40 'integrative research review\*':ti,ab,kw

**#41** #36 OR #37 OR #38 OR #39 OR #40

**#42 #35 AND #41**

**Epistemonikos**

**stroke**

1. (title:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection") OR abstract:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection"))

2. (title:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)) OR abstract:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)))

3. (title:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder)) OR abstract:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder)))

4. 1 OR 2 OR 3 (title:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder)) OR abstract:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))) OR (title:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder)) OR abstract:((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))) OR (title:(stroke) OR abstract:(stroke)) OR (title:(poststroke) OR abstract:(poststroke)) OR (title:(post-stroke) OR abstract:(post-stroke)) OR (title:(cerebrovasc\*) OR abstract:(cerebrovasc\*)) OR (title:("brain vasc\*") OR abstract:("brain vasc\*")) OR (title:(CVA\*) OR abstract:(CVA\*)) OR (title:(apoplex\*) OR abstract:(apoplex\*)) OR (title:(SAH) OR abstract:(SAH)) OR (title:(TIA) OR abstract:(TIA)) OR (title:("transient ischaemic attack" OR "transient ischemic attack") OR abstract:("transient ischaemic attack" OR "transient ischemic attack")) OR (title:("vertebral artery dissection") OR abstract:("vertebral artery dissection"))

(title:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection") OR abstract:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection")) OR (title:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*))) OR abstract:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)))) OR (title:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))) OR abstract:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))))

**Risk**

5. (title:("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*) OR abstract:("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*))

6. (title:(health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour)) OR abstract:(health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour)))

7. (title:(patient AND (educat\* OR program\*)) OR abstract:(patient AND (educat\* OR program\*)))

8. 5 OR 6 OR 7 (title:(patient AND (educat\* OR program\*)) OR abstract:(patient AND (educat\* OR program\*))) OR (title:(health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour)) OR abstract:(health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour))) OR (title:("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*) OR abstract:("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*))

9. (title:(((secondary OR multifactor\*) AND (prevention OR intervention))) OR abstract:(((secondary OR multifactor\*) AND (prevention OR intervention))))

10. (title:(risk factor\* AND (reduc\* OR manag\* OR intervent\*)) OR abstract:(risk factor\* AND (reduc\* OR manag\* OR intervent\*)))

11. (title:((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*)) OR abstract:((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*)))

12. (title:((behavior\* OR behaviour\*) AND chang\*) OR abstract:((behavior\* OR behaviour\*) AND chang\*))

13. (title:((health care OR healthcare) AND advice) OR abstract:((health care OR healthcare) AND advice))

14. (title:(non-pharmacologic\* OR nonpharmacologic\*) OR abstract:(non-pharmacologic\* OR nonpharmacologic\*))

15. 9 OR 10 OR 11 OR 12 OR 13 OR 14 (title:(non-pharmacologic\* OR nonpharmacologic\*) OR abstract:(non-pharmacologic\* OR nonpharmacologic\*)) OR (title:((health care OR healthcare) AND advice) OR abstract:((health care OR healthcare) AND advice)) OR (title:((behavior\* OR behaviour\*) AND chang\*) OR abstract:((behavior\* OR behaviour\*) AND chang\*)) OR (title:((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*)) OR abstract:((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*))) OR (title:(risk factor\* AND (reduc\* OR manag\* OR intervent\*)) OR abstract:(risk factor\* AND (reduc\* OR manag\* OR intervent\*))) OR (title:(((secondary OR multifactor\*) AND (prevention OR intervention))) OR abstract:(((secondary OR multifactor\*) AND (prevention OR intervention))))

16. (title:(ethanol OR alcohol) OR abstract:(ethanol OR alcohol))

17. (title:(((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*)) OR abstract:(((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*)))

18. (title:(tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation") OR abstract:(tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation"))

19. (title:(diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*)) OR abstract:(diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*)))

20. (title:(exercise OR "physical activ\*" OR (physical AND activ\*)) OR abstract:(exercise OR "physical activ\*" OR (physical AND activ\*)))

21. 15 OR 16 OR 17 OR 18 OR 19 OR 20 (title:(exercise OR "physical activ\*" OR (physical AND activ\*)) OR abstract:(exercise OR "physical activ\*" OR (physical AND activ\*))) OR (title:(diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*)) OR abstract:(diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*))) OR (title:(tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation") OR abstract:(tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation")) OR (title:(((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*)) OR abstract:(((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*))) OR (title:(ethanol OR alcohol) OR abstract:(ethanol OR alcohol))

33. **Risk reduction AND Stroke**

(title: (("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*)) OR abstract:(("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*))) OR (title: ((health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour))) OR abstract:((health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour)))) OR (title: ((patient AND (educat\* OR program\*))) OR abstract:((patient AND (educat\* OR program\*)))) OR (title: (((secondary OR multifactor\*) AND (prevention OR intervention))) OR abstract:(((secondary OR multifactor\*) AND (prevention OR intervention)))) OR (title: ((risk factor\* AND (reduc\* OR manag\* OR intervent\*))) OR abstract:((risk factor\* AND (reduc\* OR manag\* OR intervent\*)))) OR (title: (((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*))) OR abstract:(((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*)))) OR (title: (((behavior\* OR behaviour\*) AND chang\*)) OR abstract:(((behavior\* OR behaviour\*) AND chang\*))) OR (title: ((health care OR healthcare) AND advice) OR abstract:((health care OR healthcare) AND advice)) OR (title: (non-pharmacologic\* OR nonpharmacologic\*) OR abstract:(non-pharmacologic\* OR nonpharmacologic\*)) OR (title: (ethanol OR alcohol) OR abstract:(ethanol OR alcohol)) OR (title: ((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*) OR abstract:((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*)) OR (title: (tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation") OR abstract:(tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation")) OR (title: (diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*)) OR abstract:(diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*))) OR (title: (exercise OR "physical activ\*" OR (physical AND activ\*)) OR abstract:(exercise OR "physical activ\*" OR (physical AND activ\*)))

AND

(title:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection") OR abstract:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection")) OR (title:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*))) OR abstract:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)))) OR (title:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))) OR abstract:(((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))))

**Stroke**

stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection" OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)) OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))

**Risk reduction**

(("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*)) OR ((health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour))) OR ((patient AND (educat\* OR program\*))) OR (((secondary OR multifactor\*) AND (prevention OR intervention))) OR ((risk factor\* AND (reduc\* OR manag\* OR intervent\*))) OR (((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*))) OR (((behavior\* OR behaviour\*) AND chang\*)) OR ((health care OR healthcare) AND advice) OR (non-pharmacologic\* OR nonpharmacologic\*) OR (ethanol OR alcohol) OR ((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*) OR (tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation") OR (diet\* OR "healthy eating" OR (healthy AND eating) OR (diet AND chang\*)) OR (exercise OR "physical activ\*" OR (physical AND activ\*))

**Combined using AND, limited to Title/Abstract**

(title:((title:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection" OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)) OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder))) OR abstract:(stroke OR poststroke OR post-stroke OR cerebrovasc\* OR "brain vasc\*" OR "CVA" OR apoplex\* OR "SAH" OR "TIA" OR "transient ischemic attack" OR "transient ischaemic attack" OR "vertebral artery dissection" OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)) OR ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) AND (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\* OR disorder)))) AND (title:((("health education" OR "health promotion" OR "health behavior" OR "health behaviour" OR "secondary prevention" OR counseling OR counsel\*)) OR ((health AND (educat\* OR program\* OR promotion\* OR behavior OR behaviour))) OR ((patient AND (educat\* OR program\*))) OR (((secondary OR multifactor\*) AND (prevention OR intervention))) OR ((risk factor\* AND (reduc\* OR manag\* OR intervent\*))) OR (((lifestyle OR life-style) AND (intervent\* OR advice OR alter\* OR educat\* OR chang\*))) OR (((behavior\* OR behaviour\*) AND chang\*)) OR ((health care OR healthcare) AND advice) OR (non-pharmacologic\* OR nonpharmacologic\*) OR (ethanol OR alcohol) OR ((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* OR (problem OR hazardous OR harmful)) AND drink\*) OR (tobacco OR smok\* OR "tobacco use cessation" OR "smoking cessation") OR (diet\* OR 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**Limited to systematic reviews**

**Cochrane Library**

1. (MeSH descriptor: [Cerebrovascular Disorders] this term only OR MeSH descriptor: [Basal Ganglia Cerebrovascular Disease] explode all trees OR MeSH descriptor: [Brain Ischemia] explode all trees OR MeSH descriptor: [Carotid Artery Diseases] explode all trees OR MeSH descriptor: [Intracranial Arterial Diseases] explode all trees OR MeSH descriptor: [Intracranial Arteriovenous Malformations] explode all trees OR MeSH descriptor: [Intracranial Embolism and Thrombosis] explode all trees OR MeSH descriptor: [Intracranial Hemorrhages] explode all trees OR MeSH descriptor: [Stroke] this term only OR MeSH descriptor: [Brain Infarction] explode all trees OR MeSH descriptor: [Vasospasm, Intracranial] this term only OR MeSH descriptor: [Vertebral Artery Dissection] this term only)

(#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 **= #13**)

2. ((stroke OR poststroke OR post-stroke OR cerebrovsc\* OR brain vasc\* OR cerebral vasc\* OR CVA\* OR apoplex\* OR SAH OR TIA OR transient ischaemic attack OR transient ischemic attack OR vertebral artery dissection)):ti,ab,kw (#14)

3. ((brain\* OR cerebr\* OR cerebell\* OR intracran\* OR intracerebral) NEAR/5 (ischemi\* OR ischaemi\* OR infarct\* OR thrombo\* OR emboli\* OR occlus\*)):ti,ab,kw (#15)

4. ((brain\* OR cerebr\* OR cerebell\* OR intracerebral OR intracranial OR subarachnoid) NEAR/5 (haemorrhage\* OR hemorrhage\* OR haematoma\* OR hematoma\* OR bleed\*)):ti,ab,kw (#16)

5. #13 OR #14 OR #15 OR #16 = **#17**

6. (MeSH descriptor: [Health Education] explode all trees OR MeSH descriptor: [Health Promotion] explode all trees OR MeSH descriptor: [Health Behavior] explode all trees OR MeSH descriptor: [Secondary Prevention] explode all trees OR MeSH descriptor: [Counseling] explode all trees) (#18 OR #19 OR #20 OR #21 OR #22) = #23

7. ((health education OR health promotion OR health behavior OR health behaviour OR secondary prevention OR counseling OR counsel\*)):kw (#24)

8. ((health NEAR/5 (educat\* OR program\* OR promotion\* OR behavior OR behaviour))):ti,ab,kw (#25)

9. ((patient NEAR/5 (educat\* or program\*))):ti,ab,kw (#26)

10. #23 OR #24 OR #25 OR #26 = **#27**

11. (((secondary or multifactor\*) NEAR/3 (prevention or intervention))):ti,ab,kw (#28)

12. (((risk NEAR/3 factor\* NEAR/5 (reduc\* OR manag\* OR intervent\*)))):ti,ab,kw (#29)

13. ((lifestyle NEAR/3 (intervent\* or advice))):ti,ab,kw (#30)

14. (((life style NEAR/3 (intervention\* OR advice OR alter\* OR educat\* OR chang\*)))):ti,ab,kw (#31)

15. ((((behavior\* OR behaviour\*) NEAR/3 chang\*))):ti,ab,kw (#32)

16. ((((health care OR healthcare) NEAR/3 advice))):ti,ab,kw (#33)

17. ((non-pharmacologic\* OR nonpharmacologic\*)):ti,ab,kw (#34)

18. #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 **= #35**

19. ((ethanol):kw) OR (MeSH descriptor: [Ethanol] explode all trees)

(#36 OR #37)

20. (((alcohol\* OR ethanol\* OR wine OR beer OR spirit\* or ((problem or hazardous or harmful) NEAR/3 drink\*)))):ti,ab,kw (#38)

21. #36 OR #37 OR #38 = **#39**

22. (MeSH descriptor: [Tobacco] explode all trees OR MeSH descriptor: [Tobacco Use Cessation] explode all trees OR MeSH descriptor: [Smoking] explode all trees OR MeSH descriptor: [Smoking Cessation] explode all trees) (#40 OR #41 OR #42 OR #43) =#44

23. (tobacco):kw

24. (((tobacco OR smok\*))):ti,ab,kw

25. (#44 OR #45 OR #46) = **#47**

26. (diet\*):ti,ab,kw #48

27. (((healthy NEAR/3 eating))):ti,ab,kw #49

28. (((diet NEAR/3 chang\*))):ti,ab,kw #50

29. #48 OR #49 OR #50 = **#51**

30. ((exercise):kw) OR (MeSH descriptor: [Exercise] explode all trees) #52 OR #53

31. (((physical NEAR/3 activ\*))):ti,ab,kw

32. #52 OR #53 OR #54 = #55

33. #27 OR #35 OR #39 OR #47 OR #51 OR #55 = **#56**

34. #17 AND #56 = **#57** **limit to Cochrane Reviews**

**File S3: Tabular presentation of ROBIS (Risk of Bias in Systematic Reviews) Result**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Review | 1. Study Eligibility Criteria | 2. Identification and Selection of Studies | | 3. Data Selection and Study Appraisal | 4. Synthesis and Findings | Overall Risk of Bias in the Review |
| 1. Allida 2020 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 2. Bridgwood 2018 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 3. Deijle 2017 | ☺ | ? | ? | | ? | ? |
| 4. Fryer 2016 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 5. Heron 2017 | ☺ | ? | ☺ | | ☹ | ☹ |
| 6. Jeffares 2021 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 7. Lawrence 2012 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 8. Lawrence 2015 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 9. Lennon 2014 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 10. Liljehult 2020 | ☹ | ☺ | ☺ | | ? | ☺ |
| 11. Parappilly 2018 | ☺ | ? | ? | | ☺ | ? |
| 12. Sakakibara 2017 | ☺ | ? | ? | | ☺ | ? |
| 13. Tao 2022 | ☺ | ☺ | ☺ | | ☺ | ☺ |
| 14. Wan 2021 | ☺ | ☺ | ☺ | | ☹ | ? |
| 15. Wang 2018 | ☺ | ☺ | ☺ | | ☺ | ☺ |

☺ = low risk; ☹ = high risk; ? = unclear risk

**File S4: Characteristics of Included Systematic Reviews**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Systematic review** | **No. of RCT studies** | **Population** | **Intervention and stated aim** | **Outcomes reported** | **Main findings** | **Meta- analysis** | **ROBIS** |
| Pharmacological, psychological, and non‐invasive brain stimulation interventions for treating depression after stroke. **Allida** 2020 | 16 (from a total of 49)  N =1469 | Male & female diagnosed with post-stroke depression (included ischaemic & haemorrhagic) | Psychological therapy vs UC / attention control and +/- pharmacology to (1) reduce the prevalence of diagnosable depression after stroke (2)reduce levels of depressive symptoms, improve physical and neurological function. Intervention Category: Psychological therapies | (1)Depression (remission) (2)change in scores (i)depression, (ii) psychological distress Timepoints: (a)end of treatment and (b)end of f/u | Very low-certainty evidence suggests that psychological therapies can reduce the prevalence of depression | RR of effect of interventions on depression dx at (a): 6RCTs N=521 RR 0.77 [0.62, 0.95]; (b): 3RCTs N=201 RR 0.85 [0.59, 1.21] MD in change in depression scores at (a) 3 RCTs N=189 MD -6.20 [-8.24, -4.16] MD in change in psychological distress scores at (a) 2RCTs N=377 MD -0.21 [-1.89, -1.48] | Low risk |
| Interventions for improving modifiable risk factor control in the secondary prevention of stroke. **Bridgwood** 2018 | 16 (from a total of 42)  N = 6051 | Adults aged 18yrs and older with confirmed ischaemic/  haemorrhagic stroke/TIA | Educational and behavioural interventions for stroke patients vs usual care or without individualised advice to improve modifiable risk factor control. Exercise/physical rehab, knowledge and smoking cessation excluded (included organisational interventions not reported here). Intervention Category: Education/Behavioural Counselling | (1)Physiological e.g. BP, lipids, HbA1c, BMI, risk score; (2)Medication adherence; (3)Recurrent stroke; (4)MI; | Educational and behavioural interventions showed no clear benefit for any of the review outcomes, which included mean systolic and diastolic blood pressure, mean body mass index, achievement of HbA1c target, lipid profile, mean HbA1c level, medication adherence, or recurrent cardiovascular events. | (1)MDs SBP: 11 RCTs N=1398: MD -2.81 mmHg (-7.02, +1.39); MDs DBP: MD -0.83 mmHg (-2.8, + 1.13); OR BP target achieved: 3 RCTs N=266 OR 1.34 [0.70, 2.59]; MD TC: 7 RCTs N=721: MD 0.1mmol/L (-0.28, +0.41); MD LDL: 4RCTs N=495: MD -0.13 mmol/L (-0.28, +0.02); MD BMI: 2RCTs N=127: MD + 0.22 kg/m²(-0.85, +1.29)(2) Medication adherence: 13 RCTs N=33762 no difference found; (3) Recurrent stroke: 4RCTs N=4333: OR 0.82 [0.37, 1.84]; TIAs: 2 RCTs N=N=4207: OR 1.09 [0.52, 2.30] (4) MI: 3 RCTs N=4277: OR 0.53 [0.17, 1.65]; | Low risk |
| Lifestyle Interventions to Prevent Cardiovascular Events After Stroke and Transient Ischemic Attack: Systematic Review and Meta-Analysis. **Deijle** 2017 | 13 (from a total of 22)  N = 1852 | Adults with stoke/TIA | Lifestyle interventions focusing on behaviour change (1), cardiovascular fitness (2), combination (3) vs usual care, to prevent recurrence, reduce mortality, improve modifiable risk factors.  Intervention Category: Multi-modal programmes | (1)Cardiovascular event rates; (2) Mortality; (3) Physiological e.g. BP, Cholesterol; | Lifestyle interventions are effective in lowering systolic blood pressure but no effect on cardiovascular event rate mortality, diastolic bloodpressure, or total cholesterol. | (1) RR CV events: 4 RCTs N=506 RR 0.79 [0.30, 2.06]; (2)Mortality: 5(4)RCTs N=1492: RR 1.16[0.82, 1.63]; (3)MDs SBP: 10 RCTs N=650 (all interventions) MD -3.6mmHg ( -5.6, -1.6); MDs DBP: 8RCTs N=648 MD -0.15mmHg ( -2.23, +1.93); MDs TC: 3RCTs N=126 MD 0.09mmol/l ( -0.30, +0.48); | Unclear risk |
| Self-management programmes for quality of life in people with stroke. **Fryer** 2016 | 6 (from a total of 14)  N = 648 | Adults (aged 18 years and older)with stroke living in community | Self-management programmes (stroke specific & generic) vs usual care or active control (alternative intervention) to improve quality of life after stroke.  Intervention Category: Self-management | (1)QoL; Self-efficacy; Activity limits; (not reported here) (2)Impairments (changes in mood scores) | Individual studies reported benefits for health-related behaviours such as reduced use of health services, smoking, and alcohol intake, as well as improved diet and attitude. However, there was no superior effect for such programmes in the domains of locus of control, activities of daily living, medication adherence, participation, or mood. | MD in change in psychological distress scores: 6 RCTs N=648 MD -0.56 ( -1.27, + 0.15) | Low risk |
| Secondary prevention lifestyle interventions initiated within 90 days after TIA or 'minor' stroke: a systematic review and meta-analysis of rehabilitation programmes. **Heron** 2017 | 2 (from a total of 4)  N = 79 | Adults, males and females, aged 18 years and older with a diagnosis of TIA and/or minor stroke | Comprehensive rehab programme within 90 days of diagnosis vs usual care to review effectiveness on patients' optimal functioning. Intervention Category: Multi-modal programmes | Resting systolic BP | Limited evidence of the effectiveness with no significant change in resting and peak systolic blood pressure, resting heart rate, aerobic capacity, falls, or mortality | MDs in resting SBP: 2RCTs N=76 MD 2.6mmHg ( -7.93, +13.13) | High risk |
| A systematic review and meta-analysis of the effects of cardiac rehabilitation interventions on cognitive impairment following stroke. **Jeffares** 2021 | 5  N = 852 | Adults aged 18+ with primary diagnosis of TIA or stroke | Cardiac rehabilitation and cardiac rehabilitation-type interventions. Intervention Category: Multi-modal programmes | (1) Post-stroke cognitive function (not reported here) (2) Psychological well-being (depression and anxiety) | Cardiac rehabilitation programmes had a small significant effect on depression and anxiety scores | Depression scores: 5 RCTs N=852: SMD(d) 0.15 (0.01, 0.29); Anxiety scores: 4 RCTs N=663: SMD(d) 0.29 (0.12, 0.46) | Low risk |
| The effectiveness of secondary prevention lifestyle interventions designed to change lifestyle behavior following stroke: summary of a systematic review. **Lawrence** 2012 | 3  N = 581 | Adults aged 18+ who had a stroke/TIA | Educational/health promotional and other behavioural interventions to address one or more modifiable lifestyle risk factors to prevent recurrent stroke, and improve behavioural, physiological, psychological and/or learning outcomes. Intervention Category: Education/Behavioural Counselling | (1) Behaviour change e.g. tobacco use, physical activity, alcohol consumption, diet; (2) Physiological e.g. BP, lipids, Blood glucose, BMI, waist circumference; (3) Stroke recurrence | Secondary prevention lifestyle interventions are effective in terms of effecting positive change in lifestyle behaviours, and appear promising in relation to physiological outcomes however there was insufficient evidence to determine effect on stroke recurrence | (1) ORs in combined lifestyle behaviour: 3RCTs N=581: OR 0.81 [0.68, 0.96]; (2) ORs in combined physiological risk factors: 3RCTs N=581: OR 0.87 [ 0.75, 1.0] | Low risk |
| Multimodal secondary prevention behavioral interventions for TIA and stroke: a systematic review and meta-analysis. **Lawrence** 2015 | 16 (from a total of 20)  N = 5976 | Adults aged 18+ who had a stroke (broad definition included ischaemic/haemorrhagic/subarachnoid haemorrhage/TIA) | Multimodal complex interventions vs UC/modified UC, addressing (1)medication education +/- compliance education; (2) education/active information provision on stroke/lifestyle/risk factors; (3)lifestyle behaviours - smoking, diet, physical activity, alcohol consumption, and/or amelioration of lifestyle risk factors. Intervention Category: Multi-modal programmes | (1)Physiological e.g. BP, lipids, glucose, BMI; (2)Behaviour change; (3)Psychological wellbeing; (4)Recurrence/CV events; (5)mortality | Significant effect of intervention on the reduction of systolic and diastolic blood pressure; Positivetrends were noted in relation to blood lipids and anthropomorphic measures; significant positive effect on medication compliance, anxiety, reduction in recurrence of cardiac events | (1) MDs BP: 10RCTs N=1407: combined SBP/DBP MD: -2.57mmHg (-3.57, -1.56); SBP MD -4.21mmHg (-6.24, -2.18); DBP: MD: -2.03mmHg (-3.19, -0.87). Combined lipids 9RCTs N=1342 MD: 0.02mmol/L (-0.06, 0.10); Bl Glucose 3RCTs N=120 MD: -0.07mmol/L (-0.16, 0.02); BMI 6RCTs N=433 MD: -0.25kg/m2 (-1.04, 0.54); Weight 3RCTs N=186 MD: -1.53kg (-4.48, 1.43); Waist Circumference 2RCTs N=96 MD: -6.69cm (-11.44, -1.93). (2) ORs for smoking quitters: 5RCTs N=250 OR 1.15 (0.67, 1.99); MDs for diet/daily fruit & veg: 2RCTs N=74 MD 0.46 (-0.27, 1.19). (3) MDs Anxiety scores: 2RCTs N=143 MD: -1.20 (-1.77, -0.63). (4)ORs stroke recurrence: 4RCTs N=4053 OR 1.14 [0.81, 1.60]; ORs Cardiac events: 4RCTs N=4053 OR 0.38 [0.16, 0.88]. (5) ORs Mortality: 3 RCTs N=4261 OR 1.03 [0.57, 1.85] | Low risk |
| Lifestyle interventions for secondary disease prevention in stroke and transient ischaemic attack: a systematic review. **Lennon** 2014 | 15 (from a total of 17)  N = 7498 | Participants with ischaemic stroke or TIA (ICD classified) | Lifestyle intervention packages incorporating any key component of targeted health education or health promotion on lifestyle-related issues, lifestyle counselling and/or aerobic exercise and broadly based on the cardiac rehabilitation model Vs usual care (routine pharmacotherapy and guideline based advice +/- sham intervention) for secondary disease prevention.  Intervention Category: Multi-modal programmes | (1)Mortality; (2)Recurrent CVD rates;(3) Physiological e.g. BP, lipids; (4)Behaviour change e.g. physical activity; smoking; diet. | Promising blood pressure reductions; insufficient evidence on reduction in mortality, CVD event rates and cardio-metabolic risk factor profiles | (1) RR for mortality: 8RCTs N=2478 RR=1.13 [0.85, 1.5]). (2) RR CVD event rate: 4 RCTs N=1013 RR=1.16 [0.80, 1.17]. (3)Physiological: MDs BP: 6 RCTs N=1155 MD SBP: -1.34mmHg ( -2.54, -0.14); MD DBP: −1.40 mmHg (−2.43, −0.37); MDs TC: 5RCTs N=806 MD -2.06 mmol/l (-5.21, 1.09). (4)SMDs for physical activity participation: 5 RCTs N=657 SMD 0.24 (0.08, 0.41). | Low risk |
| Effect and efficacy of lifestyle interventions as secondary prevention. **Liljehult** 2020 | 22 (from a total of 29)  N = 7273 | Adults (>= 18) with 1st or recurrent stroke or TIA | Counselling or educational (individual or group) interventions targeting single/multiple risk factors +/- supervised exercise.  Intervention Category: Multi-modal programmes | (1)Physiological e.g. SBP,DBP, SBP<140, HR; lipids, glucose/HbA1c; BMI, weight, waist-hip ratio; (2)Mortality; (3)Recurrent stroke/TIA; | There may be a moderate beneficial effect on blood pressure, especially if the intervention includes supervised physical training | (1) RR for SBP<140: 6 RCTs N=1546, RR: 1.14mmHg [1.03, 1.25]; MD SBP 14 RCTs N=2222, MD −3.85mmHG [−6.43, −1.28]; MD DBP 12 RCTs N=1711, MD : −1.60mmHg [−3.09, −0.11]; MD TC 10 RCTs N=925, MD: −4.25mmol/L [−9.27, 1.22]; MD FBG 2 RCTs N=75, MD: −0.19mmol/L [−0.47, 0.10]; MD HbA1c 2 RCTs N=170, MD : 0.12 [−0.46, 0.70]; MD BMI 4 RCTs N=329, MD: −0.44kg/m2 [−1.38, 0.51]; MD weight 4 RCTs N=175, MD: −0.53kg [−4.09, 3.03]; waist-hip 2 RCTs N=75, MD: 0.0 [−0.04, 0.03 (2) RR of Mortality: 5 RCTs N=4668, (all causes)RR 0.97 [0.58, 1.61]. (3) RR of Recurrent stroke/TIA 4 RCTs N=4330, RR 1.08 [0.78, 1.50] | Low risk |
| Effectiveness of interventions involving nurses in secondary stroke prevention: A systematic review and meta-analysis. **Parappilly** 2018 | 16  N = 3568 | Adult patients diagnosed with stroke/TIA | Secondary prevention interventions at any time post stroke/TIA where nurses had a primary role in risk factor modification vs usual care/modified usual care. Intervention Category: Education/Behavioural Counselling | (1) Physiological e.g. BP, lipids,HbA1c; (2)Behavioural change e.g. diet, physical activity, medication adherence, smoking cessation, alcohol consumption | Significant effect on reducing systolic blood pressure, diastolic BP, improved physical activity, diet, medication adherence. No effect on smoking cessation or reduction in the use of alcohol. | (1) Physiological SMDs: SMD SBP 7 RCTs N=1941, SMD −0.03mmHg (−0.26, 0.21); SMD DBP 5 RCTs N=1372, SMD 0.22mmHg (−0.20, 0.641); SMD lipids: TC 2 RCTs N=768, SMD -0.11mmol/L (-0.25, 0.04); LDL 2 RCTs N=578, SMD -0.64mmol/L (-1.30, 0.02); HDL 2 RCTs N=604, SMD 0.00mmol/L (-0.16, 0.17); HbA1c 3 RCTs N=809, SMD -0.17mmol/L (-0.59, 0.24). (2) Behaviour change SMDs: Diet 3 RCTs N=393, SMD -0.21(-0.40, -0.02); ORs on number of smokers 6 RCTs N=1592, OR = 1.12 ( 0.87, 1.45); ORs of Physical inactivity 5 RCTs N=1233, OR = 0.60 (0.37, 0.97); ORs of Alcohol use 3 RCTs N=984, OR=0.89 (0.46, 1.60) | Unclear risk |
| A Systematic Review and Meta-Analysis on Self-Management for Improving Risk Factor Control in Stroke Patients. **Sakakibara** 2017 | 14  N = 2303 | Adults aged 18yrs and older post stroke/TIA | To improve risk factors in adults aged 18 years and older who have had a stroke/TIA using at least one self-management skill/technique identified as: 1)Setting goals/ planning actions; 2) Using resources; 3)Obtaining feedback on performance; 4) Making decisions; 5) Forming intentions to improve lifestyle behaviours; 6) Problem solving; 7) Self-monitoring. Intervention Category: Self-management | (1) Lifestyle behaviours - physical activity, diet/nutrition, smoking, alcohol, med adherence; (2) Physiological - BP, lipids; | Appears to be effective at improving overall risk factor control; Greatest effect seen on lifestyle behaviour risk factors particularly medication adherence | (1) Behaviour change SMDs: PA 7 RCTs N=730, SMD 0.08 [-0.08, 0.25]; Diet/nutrition 5RCTs N=490, SMD 0.14 [-0.08, 0.36]; Smoking 5RCTs N=533, SMD 0.20 [-0.18, 0.58]; Alcohol 3 RCTs N=138, SMD 0.12 [-0.37, 0.61]; Medication adherence 5 RCTs N=802, SMD 0.31 [0.07, 0.56]; (2) Physiological SMDs: BP 7 RCTs N=1474, SMD -0.16mmHg [-0.43, 0.11]; TC 5 RCTs N=946, SMD -0.06mmol/L [-0.24, 0.12]; | Unclear risk |
| Effectiveness of mindfulness-based stress reduction and mindfulness-based cognitive therapy on depression in poststroke patients-A systematic review and meta-analysis of randomized controlled trials. **Tao** 2022 | 7  N = 502 | Adults > 18 years diagnosed with stroke diseases with or without poststroke depression or mental fatigue | Mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT) interventions versus usual care, waitlist control, no treatment control, patient education with no mindful component on effectiveness in depressed mood poststroke  Intervention Category: Psychological therapies | Depression scores | Both MBSR and MBCT significantly improved depressive symptoms in poststroke patients in the stable and acute period, immediately post intervention and up to 3 months follow-up, despite high heterogeneity. | Pooled depression scores: 7 RCTs N=502, SMD -0.93 [-1.34, -0.53]  Poststroke depression patients: 4 RCTs N=315, SMD -1.27 [-1.71, -0.84] | Low risk |
| Effects of peer support interventions on physical and psychosocial outcomes among stroke survivors: A systematic review and meta-analysis. **Wan** 2021 | 3 (from a total of 11)  N = 290 | Adults over 18yrs of age, with 1st or recurrent ischaemic or haemorrhagic stroke | Peer led interventions - self management programmes, peer education, peer support, Vs inactive usual care to improve physical and psychosocial outcomes among stroke survivors. (QoL, social participation, physical - ADLs, limb function, not reported here)  Intervention Category: Self-management | Depression scores | Peer support interventions could improve psychological (depression, anxiety) outcomes | Depression scores: 3 RCTs N=290, SMD −1.49 [−2.54, −0.44]; | Unclear risk |
| Cognitive behavioral therapy for post-stroke depression: A meta-analysis. **Wang** 2018 | 23 N = 1972 | Patients with post stroke depression diagnosed | CBT +/- antidepressants/placebo Vs attention/routine care or antidepressants alone  Intervention Category: Psychological therapies | (1) Change in depression scores; (2) remission & response rates; (3) self-report anxiety | CBT showed positive effects on PSD | (1) SMDs Depression scores: 23 RCTs N=1972, SMD −0.83 [−1.05, −0.60]; CBT alone 7 RCTs N=859, SMD −0.76 [−1.22, −0.29]; CBT +antidepressant 14 RCTs N=970, SMD −0.95 [−1.20, −0.71] (2) RR Remission rates: 6 RCTs N=556, RR 1.76 [1.37, –2.25]; RR Response rates: 6 RCTs N=553) RR = 1.41 [1.22, 1.63]; (3) Anxiety SMDs 5 RCTs N=403, SMD −0.49 [−0.79, −0.19] | Low risk |

**Key**: RCT: randomized control trial; UC: usual care; ROBIS: risk of bias in systematic reviews; ICD: international classification of disease; TIA: transient ischaemic attack; CVD: cardiovascular disease; MI: myocardial infarction; BP: blood pressure; SBP: systolic blood pressure; DBP: diastolic blood pressure; BMI: body mass index; TC: total cholesterol; PA: physical activity; QoL: quality of life; ADL: activities of daily living; RR: risk ratio; OR: odds ratio; MD: mean difference; SMD: standardised mean difference

**File S5: GRADE of Evidence supporting interventions with statistically significant effects**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Outcome** | **Systematic review** | **Intervention category** | **RCT Studies** | **N** | **Effect Estimate** | **I2** | **Quality of evidence (GRADE)** | **Reasons for down-grade** |
| **Mortality and morbidity** | | | | | | | | |
| Cardiac events | Lawrence 2015 | Multimodal programme | 4 | 4053 | OR 0.38 [0.16, 0.88] | 0% | ⊕⊕⊕◯ Moderate | ROB; |
| **Adherence** | | | | | | | | |
| Medication adherence | Parappilly 2018 | Education / behavioural counselling | 2 | 238 | SMD 0.41  [0.17, 0.65] | 0% | ⊕◯◯◯ Very Low | ROB; limited data; indirectness |
|  | Sakakibara 2017 | Self- management | 5 | 802 | SMD 0.31 [0.07, 0.56] | 24% | ⊕⊕◯◯ Low | ROB; Inconsistencies: v wide CIs; Indirectness |
| **Physiological factors** | | | | | | | | |
| SBP | Liljehult 2020 | Multimodal programme | 14 | 2222 | MD −3.85 [−6.43, −1.28] | 53% | ⊕⊕◯◯ Low assigned by authors | ROB; indirect outcome measures |
|  | Deijle 2017 | Multimodal programme | 10 | 650 | MD −3.6mmHg [-5.6, -1.6] | 33% | ⊕⊕◯◯ Low | Inconsistency; Indirectness (different interventions); Imprecision (small numbers individual studies) |
|  | Lawrence 2015 | Multimodal programme | 10 | 1407 | MD −4.21mmHg [-6.24, -2.18] | 58% | ⊕⊕◯◯ Low | ROB; Inconsistency (wide CI); Imprecision (mod heterogeneity); |
|  | Lennon 2014 | Multimodal programme | 6 | 1155 | MD −1.34mmHg[-2.54 , -0.14mmHg] | 80% | ⊕⊕◯◯ Low | ROB; Inconsistency; Indirectness |
| DBP | Liljehult 2020 | Multimodal programmes | 12 | 1711 | MD −1.60 [−3.09, −0.11] | 40% | ⊕⊕◯◯ Low assigned by authors | ROB; indirect outcome measures |
|  | Lawrence 2015 | Multimodal programmes | 10 | 1407 | MD: −2.03 [-3.19, -0.87] | 52% | ⊕⊕◯◯ Low | ROB; Inconsistency (wide CI); Imprecision (mod heterogeneity); |
|  | Lennon 2014 | Multimodal programmes | 6 | 1155 | MD −1.40 mmHg [−2.43, −0.37] | 91% | ⊕⊕◯◯ Low | ROB; Inconsistency; Indirectness |
| SBP target <140mmHg | Liljehult 2020 | Multimodal programmes | 6 | 1546 | RR 1.14 [1.03, 1.25] | 23% | ⊕⊕◯◯ Low assigned by authors | ROB; indirect outcome measures |
| Cholesterol control (LDLc) | Liljehult 2020 | Multimodal programmes | 5 | 1003 | SMD −0.23mmol/L [-0.41, -0.05] | 36% | ⊕⊕◯◯ Low assigned by authors | ROB; indirectness, different interventions |
| Waist circumference | Lawrence 2015 | Multimodal programmes | 2 | 96 | MD: −6.69cm [-11.44,  -1.93] | 0% | ⊕⊕◯◯ Low | ROB; limited data |
| Pooled physiological | Lawrence 2012 | Multimodal programmes | 2 | 381 | OR 0.87 [0.75, 1.0] |  | ⊕⊕◯◯ Low | ROB; inconsistencies; limited data |
| **Psychological distress** | | | | | | | | |
| Remission | Wang 2018 | Psychological therapies | 6 | 556 | RR = 1.76 [1.37,2.25] | 0% | ⊕⊕⊕◯ moderate assigned by authors | ROB |
| Depression diagnosis | Allida 2020 | Psychological therapies | 6 | 521 | RR 0.77 [0.62, 0.95] | 36.16% | ⊕◯◯◯ Very Low (assigned by authors) | ROB; Imprecision |
| Depression scores | Wang 2018 | Psychological therapies | 7 | 859 | SMD −0.76 [−1.22, −0.29] | 91% | ⊕⊕⊕◯ moderate assigned by authors | ROB; high heterogeneity; Large effect increased quality of evidence |
|  | Allida 2020 | Psychological therapies | 2 | 189 | MD −6.20 [8.24,4.16] | 0% | ⊕◯◯◯ Very Low (assigned by authors) | ROB; imprecision with very wide Cis |
|  | Jeffares 2021 | Multimodal programmes | 5 | 772 | SMD 0.15 [0.01, 0.29] | 0% | ⊕⊕◯◯ Low  (assigned by authors) | ROB; indirectness – mixed pops, interventions |
|  | Wan 2021 | Self-management | 3 | 290 | SMD −1.49 [−2.54,−0.44] | 94% | ⊕◯◯◯ Very Low | ROB; lack of CI overlap, high heterogeneity; imprecision |
|  | Tao 2022 | Psychological therapies | 7 | 502 | SMD -0.93 [-1.34, -0.53] | 77% | ⊕◯◯◯ Very Low assigned by authors | Inconsistency; Imprecision |
| **Anxiety scores** | Wang 2018 | Psychological therapies | 5 | 403 | SMD −0.49 [−0.79, −0.19] | 55% | ⊕⊕◯◯ Low  (assigned by authors) | ROB; serious inconsistency due to heterogeneity |
|  | Jeffares 2021 | Multimodal programmes | 4 | 612 | SMD 0.29 [0.12, 0.46] | 9% | ⊕⊕◯◯ Low  (assigned by authors) | ROB; indirectness – mixed pops, interventions |
|  | Lawrence 2015 (HADS) | Multimodal programmes | 2 | 143 | MD −1.20 [-1.77,  -0.63] | 85% | ⊕⊕◯◯  Low | ROB; heterogeneity, imprecision |
| **Healthy lifestyle** | | | | | | | | |
| Physical activity participation | Lennon 2014 | Multimodal programme | 5 | 657 | SMD 0.24 [0.08, 0.41] | 47% | ⊕⊕⊕◯ moderate | ROB |
|  | Parappilly 2018 | Education / Behavioural counselling | 5 | 1233 | OR 0.60 [037, 0.97] | 56% | ⊕◯◯◯ Very Low | Unclear risk of bias across multiple domains in ROBIS; Poor PEDro scores; intervention differences |
| Healthy diet | Parappilly 2018 | Education / Behavioural counselling | 3 | 425 | SMD −0.21 [0.40, 0.02] | 33% | ⊕⊕◯◯ Low | ROB (fair to good PEDro scores <8/10); Different interventions; Imprecision |
| Combined lifestyle behaviours | Lawrence 2012 | Multimodal programmes | 3 | 581 | OR 0.81 [0.68, 0.96] | Not reported | ⊕⊕◯◯ Low | ROB; inconsistencies; limited data |

GRADE:

⊕⊕⊕⊕ High certainty: true effect lies close to that estimated. Confident

⊕⊕⊕◯ Moderate certainty: true effect is likely to be close to that estimated. Moderately confident

⊕⊕◯◯ Low certainty: true effect may be substantially different from estimated effect. Limited confidence

⊕◯◯◯ Very Low certainty: true effect likely to be substantially different to that estimated. Little confidence

Downgrade of the evidence:

Downgrade of the evidence: ROB: Unclear risk of bias across multiple domains in primary RCTs;

Inconsistencies: widely varying point estimates/ inconsistent direction of effect/ confidence interval overlap/ heterogeneity;

Indirectness: representativeness of population/ timeframe/ comparisons/ limited data;

Imprecision: wide confidence interval/ magnitude of sample/ limited studies;

Publication bias

**File S6: Risk of Bias of Primary Studies included in meta-analyses.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Study ID and outcomes** | | | **Risk of bias** | | | | | | |  |
| **Systematic reviews** ROB collected and presented from | **Primary study** | **Outcomes reported** | **Random sequence generation (Selection)** | **Allocation concealment (Selection)** | **Blinding of participants and personnel (Performance)** | **Blinding of outcome measure (Detection)** | **Incomplete data (Attrition)** | **Selective reporting** | **Other2** |  |
| Lawrence 2015, Liljehult 2020, Deijle 2017 | Faulkner 2013 | cardiac events, Blood pressure, waist circumference, | low | low | high | low | low | low | low |  |
| Lawrence 2015, Liljehult 2020, Deijle 2017 | Kono 2013 | cardiac events, Blood pressure, cholesterol | low | low | high | low | low | low | unclear |  |
| Liljehult 2020, Lawrence 2015, Lawrence 2012, Deijle 2017 | McManus 2009 | cardiac events, Blood pressure, anxiety | low | low | high | high | low | low | low |  |
| Lawrence 2015 | Peng 2014 | cardiac events | high | high | unclear | unclear | unclear | unclear | unclear |  |
| Lawrence 2015, Liljehult 2020, Deijle 2017 | Adie 2010 | Blood pressure | high | unclear | high | high | low | low | low |  |
| Lawrence 2015, Liljehult 2020, Deijle 2017 | Chanruengvanich 2006 | Blood pressure | unclear | unclear | high | high | low | low | high |  |
| Lawrence 2015, Parappilly 2018 | Fleming 2013 | Blood pressure, waist circumference, physical activity participation | high | unclear | unclear | high | high | high | high |  |
| Lawrence 2015, Liljehult 2020, Lennon 2014 | Hornnes 2011 | Blood pressure | low | unclear | low | high | high | low | low |  |
| Lawrence 2015, Liljehult 2020, Lennon 2014 | Joubert 2009 | Blood pressure, physical activity participation | unclear | high | high | high | high | low | high |  |
| Lawrence 2015, Liljehult 2020, Deijle 2017 | Kirk 2014 | Blood pressure, anxiety | unclear | unclear | high | low | low | low | low |  |
| Lawrence 2015 | Goldfinger 2012/Negron 2014 | Blood pressure | high | unclear | unclear | unclear | unclear | unclear | unclear |  |
| Lawrence 2015, Lawrence 2012 | Eames 2013 | anxiety, medication adherence | low | unclear | high | unclear | low | low | low |  |
| Lawrence 2015, Parappilly 2018 | Sit 2007 | medication adherence, physical activity participation, healthy diet | low | high | low | high | low | high | low |  |
| Liljehult 2020, Parappilly 2018 | Wan 2016 | medication adherence, healthy diet | low | low | high | low | low | low | high |  |
| Parappilly 2018, Liljehult 2020 | Allen 2009 | physical activity participation | low | low | high | low | low | low | high |  |
| Lennon 2014, Parappilly 2018 | Green 2007 | physical activity participation | unclear | low | not reported | low | low | low | not reported |  |
| Parappilly 2018 | Olalya 2017 (new ROB) | physical activity participation | low | low | unclear | low | low | low | Pedro score 8 reported | |
| Liljehult 2020, Parappilly 2018 | Nir 2004 | healthy diet | unclear | unclear | high | high | unclear | low | unclear |  |
| Liljehult 2020 Sakakibara 2017 | Evans-Hudnall 2014 | medication adherence | low | low | high | low | low | low | high |  |
| Sakakibara 2017, Deijle 2017, Liljehult 2020 | Kim 2013 | medication adherence, cholesterol | low | unclear | high | high | low | low | high |  |
| Sakakibara 2017, Bridgwood 2018 | Kronish 2014 | medication adherence | low | low | not reported | not reported | low | unclear | low |  |
| Sakakibara 2017, Bridgwood 2018 | MacKenzie 2013 | medication adherence | low | low | not reported | not reported | unclear | low | low |  |
| Sakakibara 2017 | O'Carroll 2013 (new ROB) | medication adherence | low | unclear | high | unclear | low | low | Pedro score 5 reported | |
| Liljehult 2020 | Barker-Collo 2015 | Blood pressure | low | low | high | low | high | low | unclear |  |
| Liljehult 2020, Deijle 2017 | Boss 2014 | Blood pressure, cholesterol | high | unclear | unclear | unclear | low | unclear | unclear |  |
| Liljehult 2020, Jeffares 2021 | Cheng 2018 | Blood pressure, cholesterol, depression | low | low | high | low | low | low | low |  |
| Liljehult 2020 | Holzemer 2011 | Blood pressure | low | unclear | high | high | high | unclear | high |  |
| Liljehult 2020 | Irewall 2015 | Blood pressure, cholesterol | low | low | high | high | low | low | low |  |
| Liljehult 2020 | Joubert 2006 | Blood pressure | low | unclear | high | high | unclear | high | high |  |
| Lawrence 2015, Deijle 2017 | Ellis 2005 | Blood pressure, anxiety | low | low | low | high | low | low | low |  |
| Deijle 2017, Lennon 2014 | Lennon 2008 | Blood pressure | low | low | low | low | low | low | low |  |
| Deijle 2017 | Potempa 1995 | Blood pressure | unclear | unclear | unclear | unclear | low | low | low |  |
| Deijle 2017 | Toledano Zarhi 2011 | Blood pressure | unclear | unclear | unclear | unclear | low | low | low |  |
| Lennon 2014 | Brotons 2011 | Blood pressure | low | low | not reported | high | low | low | not reported |  |
| Lennon 2014 | Maasland 2007 | Blood pressure | low | unclear | not reported | low | low | low | not reported |  |
| Lennon 2014 | van der Ploeg 2007 | physical activity participation | high | low | not reported | low | low | low | not reported |  |
| Lennon 2014 | Gilham 2010 | physical activity participation | low | unclear | not reported | low | low | low | not reported |  |
| Lennon 2014 | Rimmer 2000 | physical activity participation | unclear | unclear | not reported | unclear | low | low | not reported |  |
| Lennon 2014 | Boysen 2009 | physical activity participation | low | low | not reported | low | low | low | not reported |  |
| Wang 2018 | He 2010 | depression | unclear | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Tang 2014 | depression | unclear | high | high | high | low | unclear | unclear |  |
| Wang 2018 | Wang 2014 | depression | unclear | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Lan 2015 | depression | unclear | high | high | high | low | unclear | unclear |  |
| Wang 2018 | Zhou 2015 | depression | unclear | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Ge 2016 | depression | low | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Mei 2012 | depression | unclear | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Chen 2015 | depression | low | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Li 2015 | depression | low | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Yuan 2015 | depression | unclear | unclear | high | high | low | unclear | unclear |  |
| Wang 2018 | Gao 2017 | depression | low | low | low | high | low | low | unclear |  |
| Allida 2020 | Watkins 2007 | depression | low | high | high | high | low | unclear | low |  |
| Allida 2020 | Alexopoulus 2012 | depression | low | unclear | high | high | unclear | unclear | low |  |
| Allida 2020 | Kirkness 2017 | depression | low | unclear | high | low | high | unclear | low |  |
| Allida 2020 | Mitchell 2009 | depression | low | unclear | high | low | high | high | low |  |
| Allida 2020 | Fang 2017 | depression | low | high | high | low | high | unclear | unclear |  |
| Jeffares 2021 | Shi 2017 | depression | unclear | not reported | unclear | high | high | unclear | not reported |  |
| Jeffares 2021 | Matz 2015 | depression | low | not reported | low | high | low | low | not reported |  |
| Jeffares 2021 | Ihle-Hansen 2014 | depression | unclear | not reported | low | low | low | low | not reported |  |
| Jeffares 2021 | Lund 2012 | depression | low | not reported | unclear | high | unclear | low | not reported |  |
| Wan 2021 | Cadillac 2011 | depression | unclear | not reported | unclear | low | high | low | not reported |  |
| Wan 2021 | Min 2018 | depression | unclear | not reported | unclear | unclear | low | unclear | not reported |  |
| Wan 2021 | Zhang 2016 | depression | unclear | not reported | unclear | high | low | unclear | not reported |  |
| Tao 2022 | Baldo 2021 | depression | low | low | high | low | low | low | low |  |
| Tao 2022 | Johansson 2012 | depression | unclear | low | high | high | low | low | low |  |
| Tao 2022 | Xu 2015 | depression | low | unclear | high | unclear | low | unclear | high |  |
| Tao 2022 | Wang 2020 | depression | low | unclear | high | unclear | high | low | unclear |  |
| Tao 2022 | Huang 2017 | depression | low | unclear | high | unclear | low | unclear | high |  |
| Tao 2022 | Xue 2020 | depression | low | unclear | high | unclear | low | unclear | high |  |
| Tao 2022 | Zhang 2015 | depression | unclear | unclear | high | unclear | low | unclear | high |  |