**Supplementary Materials**

**Supplementary Table 1: PRISMA-P1 (Preferred Reporting Items for Systematic review and Meta-Analysis Protocols) 2015 checklist: recommended items to address in a systematic review protocol\***

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| --- | --- | --- | --- |
| Section and topic | Item No | Checklist item | Reported on Page # |
| ADMINISTRATIVE INFORMATION |  |
| Title: |  |  |  |
|  Identification | 1a | Identify the report as a protocol of a systematic review | **P1** |
|  Update | 1b | If the protocol is for an update of a previous systematic review, identify as such | **It is not an update of a previous systematic review** |
| Registration | 2 | If registered, provide the name of the registry (such as PROSPERO) and registration number | **P3, P5** |
| Authors: |  |  |  |
|  Contact | 3a | Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author  | **P1** |
|  Contributions | 3b | Describe contributions of protocol authors and identify the guarantor of the review | **P19** |
| Amendments | 4 | If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments | **We plan to document important protocol amendments** |
| Support: |  |  |  |
|  Sources | 5a | Indicate sources of financial or other support for the review  | **P19** |
|  Sponsor | 5b | Provide name for the review funder and/or sponsor | **P19** |
|  Role of sponsor or funder | 5c | Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol | **P19** |
| INTRODUCTION |  |
| Rationale | 6 | Describe the rationale for the review in the context of what is already known | **P3-P5** |
| Objectives | 7 | Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO) | **P5** |
| METHODS |  |
| Eligibility criteria | 8 | Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review | **P6-P10** |
| Information sources | 9 | Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage | **P10** |
| Search strategy | 10 | Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated | **P10 and Supplementary** |
| Study records: |  |  |  |
|  Data management | 11a | Describe the mechanism(s) that will be used to manage records and data throughout the review | **P10-P12** |
|  Selection process | 11b | State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis) | **P10-P11** |
|  Data collection process | 11c | Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators | **P11-P12** |
| Data items | 12 | List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications | **Table 1-4** |
| Outcomes and prioritization | 13 | List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale | **P8-P9** |
| Risk of bias in individual studies | 14 | Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis | **P12-P13** |
| Data synthesis | 15a | Describe criteria under which study data will be quantitatively synthesised | **P13** |
| 15b | If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall’s τ) | **P13-P14** |
| 15c | Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression) | **P14-P15** |
| 15d | If quantitative synthesis is not appropriate, describe the type of summary planned | **P14** |
| Meta-bias(es) | 16 | Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies) | **P15** |
| Confidence in cumulative evidence | 17 | Describe how the strength of the body of evidence will be assessed (such as GRADE) | **P15-P16-** |

**\* It is strongly recommended that this checklist be read in conjunction with the PRISMA-P Explanation and Elaboration (cite when available) for important clarification on the items. Amendments to a review protocol should be tracked and dated. The copyright for PRISMA-P (including checklist) is held by the PRISMA-P Group and is distributed under a Creative Commons Attribution Licence 4.0.**

**Reference**

19. Shamseer L, Moher D, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. *BMJ.* 2015;350:g7647. doi:10.1136/bmj.g7647

**Supplementary Table 2: Detailed search strategy for** **PubMed**

|  |  |
| --- | --- |
| **#1** | “Back Pain” [MeSH Terms] OR “Low Back Pain” [MeSH Terms] OR “Back Injuries” [MeSH Terms] OR “Spine” [MeSH Terms] OR “Spinal Fusion” [MeSH Terms] OR “Spinal Diseases” [MeSH Terms] OR “Sciatica” [MeSH Terms] OR “Sciatic Neuropathy” [MeSH Terms] OR “Sciatic Nerve” [MeSH Terms] OR “Spondylosis” [MeSH Terms] OR “Discitis” [MeSH Terms] OR “Arachnoiditis” [MeSH Terms] OR “Spondylolisthesis” [MeSH Terms] OR “Lumbar Vertebrae” [MeSH Terms] OR “Sacrum” [MeSH Terms] OR “Coccyx” [MeSH Terms] OR “Intervertebral Disc” [MeSH Terms] OR “Intervertebral Disc Degeneration” [MeSH Terms] OR “Intervertebral Disc Displacement” [MeSH Terms] OR “Intervertebral disc disease” [MeSH Terms]  |
| **#2** | “Back Pain\*” [Title/Abstract] OR “Backpain” [Title/Abstract] OR “Pain, Back” [Title/Abstract] OR “Pains, Back” [Title/Abstract] OR “Backach\*” [Title/Abstract] OR “Back Ach\*” [Title/Abstract] OR “Vertebrogenic Pain Syndrome\*” [Title/Abstract] OR “Low Back Pain\*” [Title/Abstract] OR “Lowback Pain” [Title/Abstract] OR “Pain, Low Back” [Title/Abstract] OR “Pains, Low Back” [Title/Abstract] OR “Pain, Lower Back” [Title/Abstract] OR “Pains, Lower Back” [Title/Abstract] OR “Low Back Ache\*” [Title/Abstract] OR “Low Backache\*” [Title/Abstract] OR “Lumbago” [Title/Abstract] OR “Lumbar” [Title/Abstract] OR “Lumbal Pain” [Title/Abstract] OR “Lumbalg\*” [Title/Abstract] OR “Lumbodynia” [Title/Abstract] OR “Lumbosacral pain” [Title/Abstract] OR “Lumbosacral Root Syndrome” [Title/Abstract] OR “Lumbosacroiliac strain” [Title/Abstract] OR “Pain, lumbosacral” [Title/Abstract] OR “Back Disorder\*” [Title/Abstract] OR “Sciatic\*” [Title/Abstract] OR “Ischia\*” [Title/Abstract] OR “Spine” [Title/Abstract] OR “Spinal” [Title/Abstract] OR “Columna Dorsalis” [Title/Abstract] OR “Dorsal Column” [Title/Abstract] OR “Vertebra\*” [Title/Abstract] OR “Spondylo\*” [Title/Abstract] OR “Spondylarthrosis” [Title/Abstract] OR “Coccy\*” [Title/Abstract] OR “Tail bone” [Title/Abstract] OR “Tailbone” [Title/Abstract] OR “Sacrum\*” [Title/Abstract] OR “Sacra\*” [Title/Abstract] OR “Disciti\*” [Title/Abstract] OR “Diskiti\*” [Title/Abstract] OR “Back Disease” [Title/Abstract] OR “Arachnoid\*” [Title/Abstract] OR “Arachnitis” [Title/Abstract] OR “Back Injur\*” [Title/Abstract] OR “Ischiatic Nerve” [Title/Abstract] OR “Ischiadic Nerve” [Title/Abstract] OR “Nervus Ischiadicus” [Title/Abstract] OR “Olisthes\*” [Title/Abstract] OR “Lumbo-sacral” [Title/Abstract] OR “Lumbosacral” [Title/Abstract] OR “Dorsalgia” [Title/Abstract] OR “Dorsalgia” [Title/Abstract] OR “Facet Joint\*” [Title/Abstract] OR “Loin Pain” [Title/Abstract] OR “Lumboischialgia” [Title/Abstract] OR “Ischialgia” [Title/Abstract] OR “Intervertebral Dis\*” [Title/Abstract] OR “Disc, Intervertebral” [Title/Abstract] OR “Disk, Intervertebral” [Title/Abstract] OR “Disc Degeneration\*” [Title/Abstract] OR “Disk Degeneration\*” [Title/Abstract] OR “Degeneration, Dis\*” [Title/Abstract] OR “Disk Degradation\*” [Title/Abstract] OR “Disc Degradation\*” [Title/Abstract] OR “Degradation, Dis\*” [Title/Abstract] OR “Degenerative Disc Disease\*” [Title/Abstract] OR “Degenerative Disk Disease\*” [Title/Abstract] OR “Disk Disease, Degenerative” [Title/Abstract] OR “Disc Disease, Degenerative” [Title/Abstract] OR “Disc Displacement, Intervertebral” [Title/Abstract] OR “Disk Protrusion\*” [Title/Abstract] OR “Disc Protrusion\*” [Title/Abstract] OR “Protrusion, Dis\*” [Title/Abstract] OR “Protruded Dis\*” [Title/Abstract] OR “Disk, Protruded” [Title/Abstract] OR “Disc, Protruded” [Title/Abstract] OR “Slipped Dis\*” [Title/Abstract] OR “Slipped Dis\*” [Title/Abstract] OR “Disc, Slipped” [Title/Abstract] OR “Disk Prolapse\*” [Title/Abstract] OR “Disc, Prolapse\*” [Title/Abstract] OR “Prolapsed Dis\*” [Title/Abstract] OR “Herniated Dis\*” [Title/Abstract] OR “Herniation Dis\*” [Title/Abstract] OR “Disk, Herniated” [Title/Abstract] OR “Disc, Herniated” [Title/Abstract] OR “Disk, Herniation\*” [Title/Abstract] OR “Disc, Herniation\*” [Title/Abstract] OR “Hernia Dis\*” [Title/Abstract] OR “Disk Hernia” [Title/Abstract] OR “Disc Hernia” [Title/Abstract] OR “Herniated Dis\*” [Title/Abstract] OR “Herniated Nucleus Pulposus” [Title/Abstract] OR “Intervertebral Prolapse” [Title/Abstract] OR “Nucleus Pulposus Hernia” [Title/Abstract] OR “Discal Lumbosciatica” [Title/Abstract] OR “Discal Lumbosciatica” [Title/Abstract] OR “Disc Protrusions, Intervertebral” [Title/Abstract] OR “Disk Protrusions, Intervertebral” [Title/Abstract] OR “Intradiscal Pressure” [Title/Abstract] OR “Discus Intervertebralis” [Title/Abstract] OR “Diskopathy” [Title/Abstract] OR “Discopathy” [Title/Abstract] |
| **#3** | **#1 OR #2** |
| **#4** | “Depression” [MeSH Terms] OR “Depressive Disorder” [MeSH Terms] OR “Dysthymic Disorder” [MeSH Terms] OR “Adjustment Disorders” [MeSH Terms] OR “Affective Disorders, Psychotic” [MeSH Terms] |
| **#5** | “Depress\*” [Title/Abstract] OR “Melancholia\*” [Title/Abstract] OR “Dysthymi\*” [Title/Abstract] OR “Adjustment Disorder\*” [Title/Abstract] OR “Adjustment Disorder\*” [Title/Abstract] OR “Disorder, Adjustment” [Title/Abstract] OR “Disorders, Adjustment” [Title/Abstract] OR “Reactive Disorder\*” [Title/Abstract] OR “Reactive Disorder\*” [Title/Abstract] OR “Disorder, Reactive” [Title/Abstract] OR “Disorders, Reactive” [Title/Abstract] OR “Transient Situational Disturbance\*” [Title/Abstract] OR “Affective Disorder, Psychotic” [Title/Abstract] OR “Affective Disorders, Psychotic” [Title/Abstract] OR “Psychoses, Affective” [Title/Abstract] OR “Affective Psychoses” [Title/Abstract] OR “Psychotic Affective Disorder\*” [Title/Abstract] OR “Disorder, Psychotic Affective” [Title/Abstract] OR “Disorders, Psychotic Affective” [Title/Abstract] OR “Psychotic Mood Disorder\*” [Title/Abstract] OR “Mood Disorder, Psychotic” [Title/Abstract] OR “Mood Disorders, Psychotic” [Title/Abstract] OR “Dysthymic Disorder” [Title/Abstract] OR “Adjustment Reaction” [Title/Abstract] OR “Transient Situational Disorder” [Title/Abstract] OR “Patient Health Questionnaire-9” [Title/Abstract] OR “HAMD” [Title/Abstract] OR “BDI” [Title/Abstract] OR “SDS” [Title/Abstract] OR “DSI” [Title/Abstract] OR “MADRS” [Title/Abstract] OR “PHQ-9” [Title/Abstract] OR “HDS” [Title/Abstract] |
| **#6** | **#4 OR #5** |
| **#7** | “Randomized Controlled Trials as Topic” [MeSH Terms] OR “Controlled Clinical Trials as Topic” [MeSH Terms] OR “Clinical Trials as Topic” [MeSH Terms] OR “Clinical Studies as Topic” [MeSH Terms] OR “Random Allocation” [MeSH Terms] OR “Multicenter Studies as Topic” [MeSH Terms] OR “Follow-Up Studies” [MeSH Terms] |
| **#8** | [Randomized Controlled Trial [Publication Type]](https://www.ncbi.nlm.nih.gov/mesh/68016449) OR [Controlled Clinical Trial [Publication Type]](https://www.ncbi.nlm.nih.gov/mesh/68018848) OR [Clinical Trial [Publication Type]](https://www.ncbi.nlm.nih.gov/mesh/68016430) OR Clinical Study [Publication Type] OR [Multicenter Study [Publication Type]](https://www.ncbi.nlm.nih.gov/mesh/68016448) OR Comparative Study [Publication Type] |
| **#9** | “Random\*” [Title/Abstract] OR “Allocat\*” [Title/Abstract] OR “Trial\*” [Title/Abstract] OR “RCT” [Title/Abstract] OR “Clinical” [Title/Abstract] OR “Controlled Stud\*” [Title/Abstract] OR “CCT” [Title/Abstract] OR “Multicent\*” [Title/Abstract] OR “Followup\*” [Title/Abstract] OR “Follow-Up\*” [Title/Abstract] |
| **#10** | **#7 OR #8 OR #9** |
| **#11** | **#3 AND #6 AND #10** |
| **#12** | “Animals” [MeSH Terms] NOT “Humans” [MeSH Terms] |
| **#13** | **#11 NOT #12** |

**Supplementary Table 3: Detailed search strategy for EMBASE**

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| --- | --- |
| **#1** | ‘Low Back Pain’/exp OR ‘Backache’/exp OR ‘Spine’/exp OR ‘Spine Fusion’/exp OR ‘Spine Disease’/exp OR ‘Sciatica’/exp OR ‘Sciatic Neuropathy’/exp OR ‘Sciatic Nerve’/exp OR ‘Spondylosis’/exp OR ‘Diskitis’/exp OR ‘Arachnoiditis’/exp OR ‘Spondylolisthesis’/exp OR ‘Lumbar Vertebra’/exp OR ‘Sacrum’/exp OR ‘Coccyx’/exp OR ‘Intervertebral Disk’/exp OR ‘Intervertebral Disk Degeneration’/exp OR ‘Intervertebral Disk Hernia’/exp OR ‘Lumbar Disk Hernia’/exp OR ‘Intervertebral Disk Disease’/exp OR ‘Ischialgia’/exp |
| **#2** | ‘Back Pain\*’:ab,ti OR ‘Backpain\*’:ab,ti OR ‘Pain\*, Back’:ab,ti OR ‘Backach\*’:ab,ti OR ‘Back Ach\*’:ab,ti OR ‘Ache\*, Back’:ab,ti OR ‘Vertebrogenic Pain Syndrome\*’:ab,ti OR ‘Low Back Pain\*’:ab,ti OR ‘Lowback Pain’:ab,ti OR ‘Pain\*, Low Back’:ab,ti OR ‘Pain\*, Lower Back’:ab,ti OR ‘Low Back Ache\*’:ab,ti OR ‘Low Backache\*’:ab,ti OR ‘Ache\*, Low Back’:ab,ti OR ‘Backache\*, Low’:ab,ti OR ‘Lumbago’:ab,ti OR ‘Lumbar’:ab,ti OR ‘Lumbal Pain’:ab,ti OR ‘Lumbalgesia’:ab,ti OR ‘Lumbalgia’:ab,ti OR ‘Lumbodynia’:ab,ti OR ‘Lumbosacral Pain’:ab,ti OR ‘Lumbosacral Root Syndrome’:ab,ti OR ‘Lumbosacroiliac Strain’:ab,ti OR ‘Pain, lumbosacral’:ab,ti OR ‘Back Disorder\*’:ab,ti OR ‘Sciatic\*’:ab,ti OR ‘Ischia\*’:ab,ti OR ‘Spine’:ab,ti OR ‘Spinal’:ab,ti OR ‘Columna dorsalis’:ab,ti OR ‘Dorsal column’:ab,ti OR ‘Vertebra\*’:ab,ti OR ‘Spondylo\*’:ab,ti OR ‘Spondylarthrosis’:ab,ti OR ‘Coccy\*’:ab,ti OR ‘Tail bone’:ab,ti OR ‘Tailbone’:ab,ti OR ‘Sacrum\*’:ab,ti OR ‘Sacra\*’:ab,ti OR ‘Sacra\*’:ab,ti OR ‘Disciti\*’:ab,ti OR ‘Diskiti\*’:ab,ti OR ‘Back Disease’:ab,ti OR ‘Arachnoid\*’:ab,ti OR ‘Arachnitis’:ab,ti OR ‘Back Injur\*’:ab,ti OR ‘Injur\*, Back’:ab,ti OR ‘Ischia\*ic Nerve’:ab,ti OR ‘Nervus Ischiadicus’:ab,ti OR ‘Olisthes\*’:ab,ti OR ‘Lumbo-sacral’:ab,ti OR ‘Lumbosacral’:ab,ti OR ‘Dorsalgia’:ab,ti OR ‘Facet Joint\*’:ab,ti OR ‘Loin Pain’:ab,ti OR ‘Lumboischialgia’:ab,ti OR ‘Ischialgia’:ab,ti OR ‘Intervertebral Dis\*’:ab,ti OR ‘Dis\*, Intervertebral\*’:ab,ti OR ‘Disc Degeneration\*’:ab,ti OR ‘Disk Degeneration\*’:ab,ti OR ‘Degeneration, Dis\*’:ab,ti OR ‘Disk Degradation\*’:ab,ti OR ‘Disc Degradation\*’:ab,ti OR ‘Degradation, Dis\*’:ab,ti OR ‘Degenerative Disc Disease\*’:ab,ti OR ‘Degenerative Disk Disease\*’:ab,ti OR ‘Dis\* Disease, Degenerative’:ab,ti OR ‘Dis\*, Degenerative Intervertebral’:ab,ti OR ‘Dis\* Displacement, Intervertebral’:ab,ti OR ‘Disk Protrusion\*’:ab,ti OR ‘Disc Protrusion\*’:ab,ti OR ‘Protrusion, Dis\*’:ab,ti OR ‘Protruded Dis\*’:ab,ti OR ‘Dis\*, Protruded’:ab,ti OR ‘Slipped Dis\*’:ab,ti OR ‘Dis\*, Slipped’:ab,ti OR ‘Disk Prolapse\*’:ab,ti OR ‘Disc, Prolapse\*’:ab,ti OR ‘Prolapse\*, Disk’:ab,ti OR ‘Prolapse\*, Disc’:ab,ti OR ‘Prolapsed Dis\*’:ab,ti OR ‘Herniated Dis\*’:ab,ti OR ‘Dis\*, Herniated’:ab,ti OR ‘Disc Herniation\*’:ab,ti OR ‘Disk Herniation\*’:ab,ti OR ‘Dis\* Hernia’:ab,ti OR ‘Hernia Dis\*’:ab,ti OR ‘Herniated Dis\*’:ab,ti OR ‘Herniation, Dis\*’:ab,ti OR ‘Herniated Nucleus Pulposus’:ab,ti OR ‘Intervertebral Prolapse’:ab,ti OR ‘Nucleus Pulposus Hernia’:ab,ti OR ‘Discal Lumbosciatica’:ab,ti OR ‘Disc Protrusions, Intervertebral’:ab,ti OR ‘Disk Protrusions, Intervertebral’:ab,ti OR ‘Intradiscal Pressure’:ab,ti OR ‘Discus Intervertebralis’:ab,ti OR ‘Dis\*opathy’:ab,ti OR ‘Dis\* hernia’:ab,ti |
| **#3** | **#1 OR #2** |
| **#4** | ‘Depression’/exp OR ‘Chronic Depression’/exp OR ‘Dysthymia’/exp OR ‘Adjustment Disorder’/exp OR ‘Affective Psychosis’/exp  |
| **#5** | ‘Depress\*’:ab,ti OR ‘Melancholia\*’:ab,ti OR ‘Adjustment Disorder\*’:ab,ti OR ‘Disorder\*, Adjustment’:ab,ti OR ‘Reactive Disorder\*’:ab,ti OR ‘Disorder\*, Reactive\*’:ab,ti OR ‘Transient Situational Disturbance\*’:ab,ti OR ‘Affective Disorder\*, Psychotic’:ab,ti OR ‘Psychoses, Affective’:ab,ti OR ‘Affective Psychoses’:ab,ti OR ‘Psychotic Affective Disorder\*’:ab,ti OR ‘Disorder\*, Psychotic Affective’:ab,ti OR ‘Psychotic Mood Disorder\*’:ab,ti OR ‘Mood Disorder\*, Psychotic’:ab,ti OR ‘Dysthymic Disorder’:ab,ti OR ‘Adjustment Reaction’:ab,ti OR ‘Transient Situational Disorder’:ab,ti OR ‘Patient Health Questionnaire-9’:ab,ti OR ‘HAMD’:ab,ti OR ‘BDI’:ab,ti OR ‘SDS’:ab,ti OR ‘DSI’:ab,ti OR ‘MADRS’:ab,ti OR ‘PHQ-9’:ab,ti OR ‘HDS’:ab,ti OR ‘HDS’:ab,ti  |
| **#6** | **#4 OR #5** |
| **#7** | 'Randomized Controlled Trial (topic)'/exp OR 'Controlled Clinical Trial (topic)'/exp OR 'Clinical Trial (topic)'/exp OR 'Randomized Controlled Trial'/exp OR 'Controlled Clinical Trial'/exp OR 'Clinical Trial'/exp OR 'Clinical Study'/exp OR 'Trial'/exp OR 'Randomization'/exp OR 'Multicenter Study (topic)'/exp OR 'Multicenter Study'/exp OR 'Follow Up'/exp |
| **#8** | ‘Random\*’:ab,ti OR ‘Allocat\*’:ab,ti OR ‘Trial\*’:ab,ti OR ‘RCT’:ab,ti OR ‘Clinical’:ab,ti OR ‘Controlled Stud\*’:ab,ti OR ‘CCT’:ab,ti OR ‘Multicent\*’:ab,ti OR ‘Followup\*’:ab,ti OR ‘Follow-up\*’:ab,ti |
| **#9** | **#7 OR #8** |
| **#10** | **#3 AND #6 AND #9** |
| **#11** | 'Animal'/exp NOT 'Human'/exp |
| **#12** | **#10 NOT #11** |