

***Supplementary Material***  
**Supplementary Table 1 PRISMA 2020 Checklist**

| Section and Topic             | Item # | Checklist item                                                                                                                                                                                                                                                                                       | Location where item is reported |
|-------------------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>TITLE</b>                  |        |                                                                                                                                                                                                                                                                                                      |                                 |
| Title                         | 1      | Identify the report as a systematic review, meta-analysis, or both.                                                                                                                                                                                                                                  |                                 |
| <b>ABSTRACT</b>               |        |                                                                                                                                                                                                                                                                                                      |                                 |
| Abstract                      | 2      | Provide a structured summary, including: study purpose, data source, research method, study content, study time limit, interventions, study results, results analysis, conclusions, limitations.                                                                                                     |                                 |
| <b>INTRODUCTION</b>           |        |                                                                                                                                                                                                                                                                                                      |                                 |
| Rationale                     | 3      | Describe the rationale for the review in the context of existing knowledge.                                                                                                                                                                                                                          |                                 |
| Objectives                    | 4      | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).                                                                                                                                           |                                 |
| <b>METHODS</b>                |        |                                                                                                                                                                                                                                                                                                      |                                 |
| Eligibility criteria          | 5      | Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.                                                                                                                                                                                          |                                 |
| Information sources           | 6      | Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.                                                                                            |                                 |
| Search strategy               | 7      | Present the full search strategies for all databases, registers and websites, including any filters and limits used.                                                                                                                                                                                 | supplementary table 2           |
| Selection process             | 8      | Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.                     |                                 |
| Data collection process       | 9      | Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process. |                                 |
| Data items                    | 10a    | List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.                        |                                 |
|                               | 10b    | List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.                                                                                         |                                 |
| Study risk of bias assessment | 11     | Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.                                    |                                 |
| Effect measures               | 12     | Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.                                                                                                                                                                  |                                 |
| Synthesis methods             | 13a    | Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).                                                                                 |                                 |
|                               | 13b    | Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data                                                                                                                                                             |                                 |

| Section and Topic             | Item # | Checklist item                                                                                                                                                                                                                                                                       | Location where item is reported |
|-------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
|                               |        | conversions.                                                                                                                                                                                                                                                                         |                                 |
|                               | 13c    | Describe any methods used to tabulate or visually display results of individual studies and syntheses.                                                                                                                                                                               |                                 |
|                               | 13d    | Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.                          |                                 |
|                               | 13e    | Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).                                                                                                                                                 |                                 |
|                               | 13f    | Describe any sensitivity analyses conducted to assess robustness of the synthesized results.                                                                                                                                                                                         |                                 |
| Reporting bias assessment     | 14     | Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).                                                                                                                                                              |                                 |
| Certainty assessment          | 15     | Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.                                                                                                                                                                                |                                 |
| <b>RESULTS</b>                |        |                                                                                                                                                                                                                                                                                      |                                 |
| Study selection               | 16a    | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.                                                                                         | Figure 1                        |
|                               | 16b    | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.                                                                                                                                                          |                                 |
| Study characteristics         | 17     | Cite each included study and present its characteristics.                                                                                                                                                                                                                            | Table 2                         |
| Risk of bias in studies       | 18     | Present assessments of risk of bias for each included study.                                                                                                                                                                                                                         | Figure 2                        |
| Results of individual studies | 19     | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.                                                     | Figure 3-9                      |
| Results of syntheses          | 20a    | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.                                                                                                                                                                               |                                 |
|                               | 20b    | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. |                                 |
|                               | 20c    | Present results of all investigations of possible causes of heterogeneity among study results.                                                                                                                                                                                       |                                 |
|                               | 20d    | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.                                                                                                                                                                           |                                 |
| Reporting biases              | 21     | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.                                                                                                                                                              | Table 3                         |
| Certainty of evidence         | 22     | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.                                                                                                                                                                                  |                                 |
| <b>DISCUSSION</b>             |        |                                                                                                                                                                                                                                                                                      |                                 |
| Discussion                    | 23a    | Provide a general interpretation of the results in the context of other evidence.                                                                                                                                                                                                    |                                 |
|                               | 23b    | Discuss any limitations of the evidence included in the review.                                                                                                                                                                                                                      |                                 |
|                               | 23c    | Discuss any limitations of the review processes used.                                                                                                                                                                                                                                |                                 |
|                               | 23d    | Discuss implications of the results for practice, policy, and future research.                                                                                                                                                                                                       |                                 |
| <b>OTHER INFORMATION</b>      |        |                                                                                                                                                                                                                                                                                      |                                 |

| Section and Topic                              | Item # | Checklist item                                                                                                                                                                                                                             | Location where item is reported |
|------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| Registration and protocol                      | 24a    | Provide registration information for the review, including register name and registration number, or state that the review was not registered.                                                                                             |                                 |
|                                                | 24b    | Indicate where the review protocol can be accessed, or state that a protocol was not prepared.                                                                                                                                             |                                 |
|                                                | 24c    | Describe and explain any amendments to information provided at registration or in the protocol.                                                                                                                                            |                                 |
| Support                                        | 25     | Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.                                                                                                              |                                 |
| Competing interests                            | 26     | Declare any competing interests of review authors.                                                                                                                                                                                         |                                 |
| Availability of data, code and other materials | 27     | Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review. |                                 |

**Supplementary Table 2** Systematic search detail

| The PubMed database Search Strategy |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Sequence                            | Search terms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Number |
| #1                                  | Axial Spondylarthritis [Mesh]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 131    |
| #2                                  | ((((((((((((((((((Axial Spondylarthritis [Title/Abstract]) OR (Bechterew's Disease [Title/Abstract])) OR (Bechterews Disease [Title/Abstract])) OR (Marie-Struempell Disease [Title/Abstract])) OR (Marie Struempell Disease [Title/Abstract])) OR (Spondylarthritis Ankylopoietica [Title/Abstract])) OR (Rheumatoid Spondylitis [Title/Abstract])) OR (Spondylitis, Rheumatoid [Title/Abstract])) OR (Ankylosing Spondylitis [Title/Abstract])) OR (Ankylosing Spondylarthritis [Title/Abstract])) OR (Ankylosing Spondyarthritides [Title/Abstract])) OR (Spondylarthritides, Ankylosing [Title/Abstract])) OR (Spondylarthritis, Ankylosing [Title/Abstract])) OR (Ankylosing Spondyloarthritis [Title/Abstract])) OR (Ankylosing Spondyloarthritides [Title/Abstract])) OR (Spondyloarthritides, Ankylosing [Title/Abstract])) OR (Spondyloarthritis, Ankylosing [Title/Abstract])) OR (Spondylitis Ankylopoietica [Title/Abstract])) OR (Bechterew Disease [Title/Abstract])) OR (Spondyloarthritis Ankylopoietica [Title/Abstract])) |        |
| #3                                  | #1 OR #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |
| #4                                  | Mind-Body Therapies [MeSH Terms]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |
| #5                                  | (((((Mind Body Therapies [Title/Abstract]) OR (Mind-Body Therapy [Title/Abstract]) OR (Therapies, Mind-Body [Title/Abstract]) OR (Therapy, Mind-Body [Title/Abstract]) OR (Mind-Body Medicine [Title/Abstract]) OR (Mind Body Medicine [Title/Abstract]))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        |
| #6                                  | mind-body exercise[Title/Abstract]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |
| #7                                  | #4 OR #5 OR #6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| #8                                  | Tai Ji[MeSH Terms]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |
| #9                                  | (((((((((Tai-ji[Title/Abstract]) OR (Tai Chi[Title/Abstract])) OR (Chi, Tai[Title/Abstract])) OR (Tai Ji Quan[Title/Abstract])) OR (Ji Quan, Tai[Title/Abstract])) OR (Quan, Tai Ji[Title/Abstract])) OR (Taiji[Title/Abstract])) OR (Taijiquan[Title/Abstract])) OR (T'ai Chi[Title/Abstract])) OR (Tai Chi Chuan[Title/Abstract]))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |
| #10                                 | #8 OR #9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |
| #11                                 | Yoga[MeSH Terms]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |
| #12                                 | yoga[Title/Abstract]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |
| #13                                 | #11 OR #12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| #14                                 | Qigong[MeSH Terms]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |
| #15                                 | (((((Qi Gong[Title/Abstract]) OR (Ch'i Kung[Title/Abstract])) OR (Baduanjin[Title/Abstract])) OR (Wuqinxi[Title/Abstract])) OR (Yijinjing[Title/Abstract])) OR (Liuzijue[Title/Abstract]))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| #16                                 | #14 OR #15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| #17                                 | Exercise Movement Techniques[MeSH Terms]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |        |
| #18                                 | (((((Movement Techniques, Exercise[Title/Abstract]) OR (Exercise Movement Technics[Title/Abstract])) OR (Pilates-Based Exercises[Title/Abstract])) OR (Exercises, Pilates-Based[Title/Abstract])) OR (Pilates Based Exercises[Title/Abstract])) OR (Pilates Training[Title/Abstract])) OR (Training, Pilates[Title/Abstract]))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| #19                                 | #17 OR #18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |
| #20                                 | #7 OR #10 OR #13 OR #16 OR #19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |

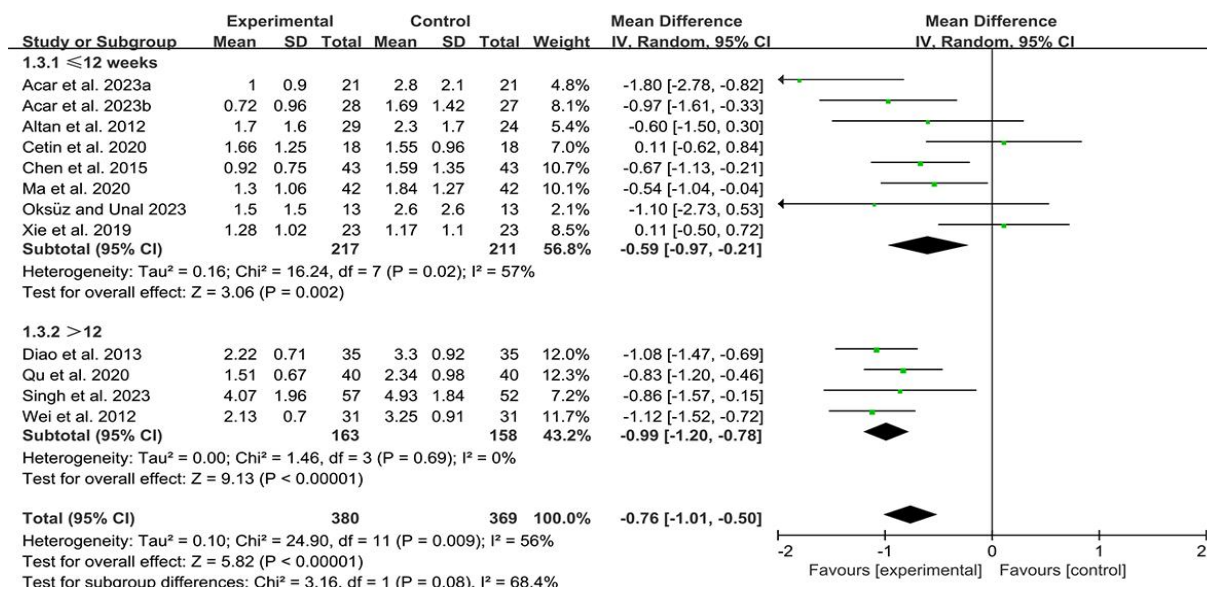
|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| #21                                           | #3 AND #20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| The Web of science database Search Strategy   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |
| Sequence                                      | Search terms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Number |
| #1                                            | TS = (axial spondylarthritis OR Bechterew's Disease OR Bechterews Disease OR Marie-Struempell Disease OR Marie Struempell Disease OR Spondylarthritis Ankylopoietica OR Rheumatoid Spondylitis OR Spondylitis, Rheumatoid OR Ankylosing Spondylitis OR Ankylosing Spondylarthritis OR Ankylosing Spondylarthritides OR Spondylarthritides, Ankylosing OR Spondylarthritis, Ankylosing OR Ankylosing Spondyloarthritis OR Ankylosing Spondyloarthritides OR Spondyloarthritides, Ankylosing OR Spondyloarthritis, Ankylosing OR Spondylitis Ankylopoietica OR Bechterew Disease OR Spondyloarthritis Ankylopoietica)     | 30     |
| #2                                            | TS = (mind-body exercise OR Tai Ji OR Tai-ji OR Tai Chi OR Chi, Tai OR Tai Ji Quan OR Ji Quan, Tai OR Quan, Tai Ji OR Taiji OR Taijiquan OR T'ai Chi OR Tai Chi Chuan OR Yoga OR Qigong OR Qi Gong OR Ch'i Kung OR Baduanjin OR Wuqinxi OR Yijinjing OR Liuzijue OR Exercise Movement Techniques OR Movement Techniques, Exercise OR Exercise Movement Technics OR Pilates-Based Exercises OR Exercises, Pilates-Based OR Pilates Based Exercises OR Pilates Training OR Training, Pilates)                                                                                                                             |        |
| #3                                            | TS = (randomized controlled trial OR controlled trial, randomized OR randomised controlled study OR randomised controlled trial OR randomized controlled study OR randomized controlled trial OR trial, randomized controlled)                                                                                                                                                                                                                                                                                                                                                                                          |        |
| #4                                            | #1 AND #2 AND #3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |
| The Cochrane library database Search Strategy |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |
| Sequence                                      | Search terms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Number |
| #1                                            | MeSH descriptor: [Axial Spondyloarthritis] explode all trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 48     |
| #2                                            | (axial spondylarthritis OR Bechterew's Disease OR Bechterews Disease OR Marie-Struempell Disease OR Marie Struempell Disease OR Spondylarthritis Ankylopoietica OR Rheumatoid Spondylitis OR Spondylitis, Rheumatoid OR Ankylosing Spondylitis OR Ankylosing Spondylarthritis OR Ankylosing Spondylarthritides OR Spondylarthritides, Ankylosing OR Spondylarthritis, Ankylosing OR Ankylosing Spondyloarthritis OR Ankylosing Spondyloarthritides OR Spondyloarthritides, Ankylosing OR Spondyloarthritis, Ankylosing OR Spondylitis Ankylopoietica OR Bechterew Disease OR Spondyloarthritis Ankylopoietica):ti,ab,kw |        |
| #3                                            | #1 OR #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |
| #4                                            | (mind-body exercise):ti,ab,kw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |
| #5                                            | MeSH descriptor: [Tai Ji] explode all trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |
| #6                                            | (Tai-ji OR Tai Chi OR Chi, Tai OR Tai Ji Quan OR Ji Quan, Tai OR Quan, Tai Ji OR Taiji OR Taijiquan OR T'ai Chi OR Tai Chi Chuan):ti,ab,kw                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| #7                                            | #5 OR #6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |
| #8                                            | MeSH descriptor: [Yoga] explode all trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |
| #9                                            | (yoga):ti,ab,kw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |        |
| #10                                           | #8 OR #9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        |
| #11                                           | MeSH descriptor: [Qigong] explode all trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |        |
| #12                                           | (Qi Gong OR Ch'i Kung OR Baduanjin OR Wuqinxi OR Yijinjing OR Liuzijue):ti,ab,kw                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        |
| #13                                           | #11 OR #12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| #14                                           | MeSH descriptor: [Exercise Movement Techniques] explode all trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |        |
| #15                                           | (Movement Techniques, Exercise OR Exercise Movement Technics OR Pilates-Based Exercises OR Exercises, Pilates-Based OR Pilates Based Exercises OR Pilates Training OR Training, Pilates):ti,ab,kw                                                                                                                                                                                                                                                                                                                                                                                                                       |        |
| #16                                           | #14 OR #15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |
| #17                                           | #4 OR #7 OR #10 OR #13 OR #16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| #18                                        | #3 AND #17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
| <b>The Embase database Search Strategy</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |
| <b>Sequence</b>                            | <b>Search terms</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Number</b> |
| #1                                         | 'axial spondyloarthritis'/exp OR 'axial spondyloarthritis'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 7             |
| #2                                         | 'Axial Spondylarthritis':ab,ti OR 'Bechterews Disease':ab,ti OR 'Bechterews Disease':ab,ti OR 'Marie-Struempell Disease':ab,ti OR 'Marie Struempell Disease':ab,ti OR 'Spondylarthritis Ankylopoietica':ab,ti OR 'Rheumatoid Spondylitis':ab,ti OR 'Spondylitis, Rheumatoid':ab,ti OR 'Ankylosing Spondylitis':ab,ti OR 'Ankylosing Spondylarthritis':ab,ti OR 'Ankylosing Spondyarthritides':ab,ti OR 'Spondylarthritides, Ankylosing':ab,ti OR 'Spondylarthritis, Ankylosing':ab,ti OR 'Ankylosing Spondyloarthritis':ab,ti OR 'Ankylosing Spondyloarthritides':ab,ti OR 'Spondyloarthritides, Ankylosing':ab,ti OR 'Spondyloarthritis, Ankylosing':ab,ti OR 'Spondylitis Ankylopoietica':ab,ti OR 'Bechterew Disease':ab,ti OR 'Spondyloarthritis Ankylopoietica':ab,ti |               |
| #3                                         | #1 OR #2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
| #4                                         | 'mind-body exercise':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
| #5                                         | 'tai chi'/exp OR 'tai chi'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
| #6                                         | 'tai-ji':ab,ti OR 'tai ji':ab,ti OR 'chi, tai':ab,ti OR 'tai ji quan':ab,ti OR 'ji quan, tai':ab,ti OR 'quan, tai ji':ab,ti OR 'taiji':ab,ti OR 'taiji quan':ab,ti OR 'tai chi':ab,ti OR 'tai chi chuan':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |
| #7                                         | #5 OR #6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
| #8                                         | 'yoga'/exp OR 'yoga'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |
| #9                                         | 'yoga':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |
| #10                                        | #8 OR #9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
| #11                                        | 'qigong'/exp OR 'qigong'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
| #12                                        | 'qi gong':ab,ti OR 'chi kung':ab,ti OR 'baduanjin':ab,ti OR 'wuqinxi':ab,ti OR 'yijinjing':ab,ti OR 'liuzijue':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |
| #13                                        | #11 OR #12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
| #14                                        | 'exercise movement techniques'/exp OR 'exercise movement techniques'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |
| #15                                        | 'movement techniques, exercise':ab,ti OR 'exercise movement technics':ab,ti OR 'pilates-based exercises':ab,ti OR 'exercises, pilates-based':ab,ti OR 'pilates based exercises':ab,ti OR 'pilates training':ab,ti OR 'training, pilates':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |
| #16                                        | #14 OR #15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |
| #17                                        | #4 OR #7 OR #10 OR #13 OR #16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |
| #18                                        | 'controlled trial, randomized':ab,ti OR 'randomised controlled study':ab,ti OR 'randomised controlled trial':ab,ti OR 'randomized controlled study':ab,ti OR 'randomized controlled trial':ab,ti OR 'trial, randomized controlled':ab,ti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |
| #19                                        | #3 AND #17 AND #18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |

**Supplementary Table 3** Details of adverse events in the included studies.

| Study                | Intervention (T/C)   |         | Adverse events                                                                                                                                                                                                        |
|----------------------|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oksüz and Unal. 2023 | Pilates plus Aerobic | Aerobic | Not specified                                                                                                                                                                                                         |
| Altan et al. 2012    | Pilates              | UC      | Not specified                                                                                                                                                                                                         |
| Acar et al. 2023     | Pilates              | HBE     | Not specified                                                                                                                                                                                                         |
| Bağlan et al. 2022   | Pilates              | HBE     | Not specified                                                                                                                                                                                                         |
| Singh et al. 2023    | Yoga plus UC         | UC      | None                                                                                                                                                                                                                  |
| Cetin et al. 2020    | Tai Chi              | HBE     | None                                                                                                                                                                                                                  |
| Xie et al. 2019      | Qigong               | NT      | None                                                                                                                                                                                                                  |
| Lee et al. 2008      | Tai Chi plus UC      | UC      | None                                                                                                                                                                                                                  |
| Acar et al. 2023     | Yoga                 | UC      | Not specified                                                                                                                                                                                                         |
| Diao et al. 2013     | Qigong plus UC       | UC      | Not specified                                                                                                                                                                                                         |
| Qu et al. 2020       | Tai Chi plus UC      | UC      | After 2 weeks of treatment, one participant in the observation group experienced mild stomach pain, and two participants in the control group experienced abdominal pain, which was tolerated and returned to normal. |
| Chen et al. 2015     | Tai Chi plus UC      | UC      | None                                                                                                                                                                                                                  |
| Wei et al. 2012      | Qigong plus UC       | UC      | One participant in each of the intervention and control groups experienced mild epigastric distension                                                                                                                 |
| Tian et al. 2023     | Qigong plus UC       | UC      | Not specified                                                                                                                                                                                                         |
| Ma et al. 2020       | Tai Chi plus UC      | UC      | Not specified                                                                                                                                                                                                         |

Note: HBE: Home-based exercise; UC: Usual care; NT: No treatment.



**Fig. S1** Subgroup analysis of BASFI score according to exercise duration

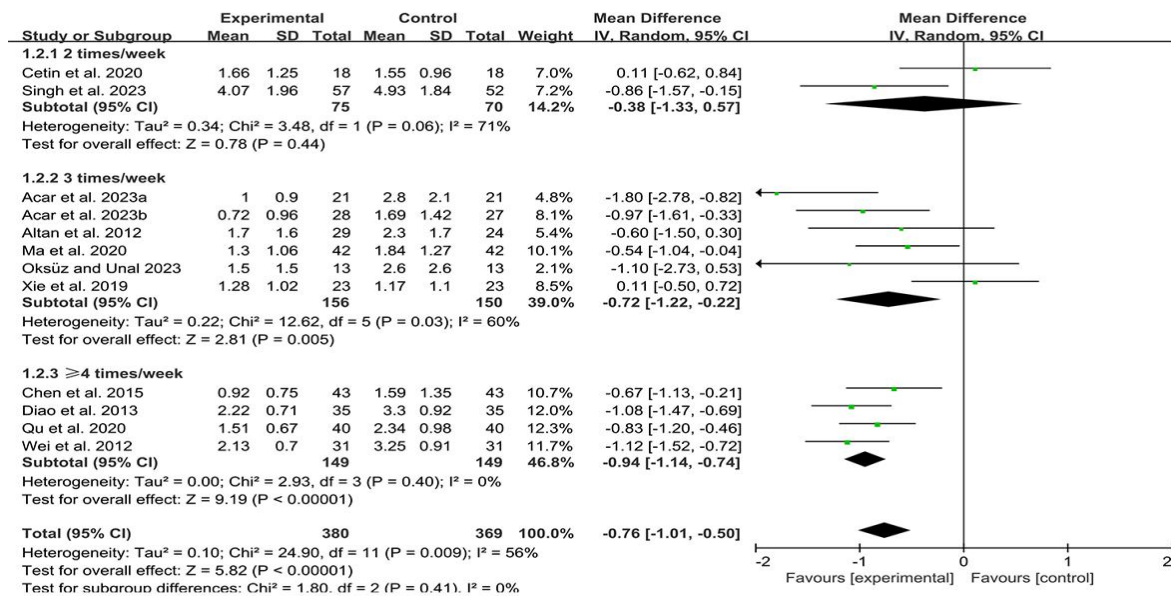


Fig. S2 Subgroup analysis of BASFI score according to exercise frequency

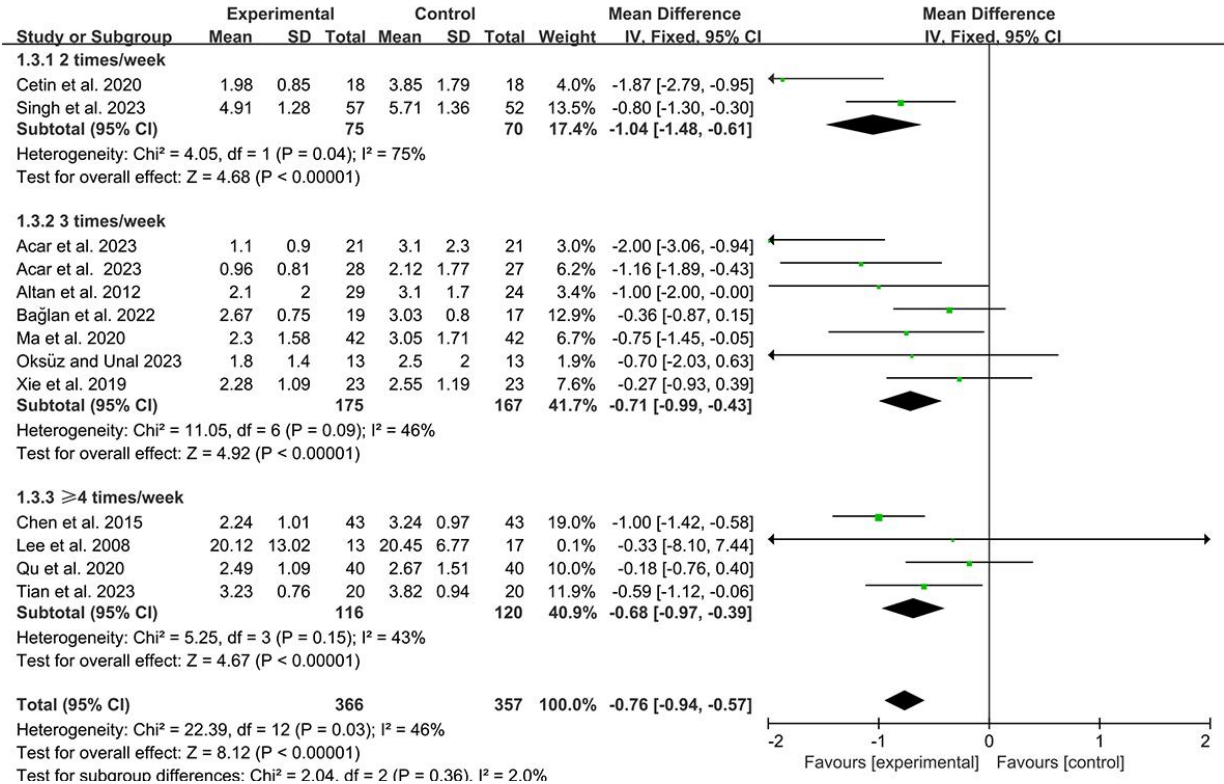
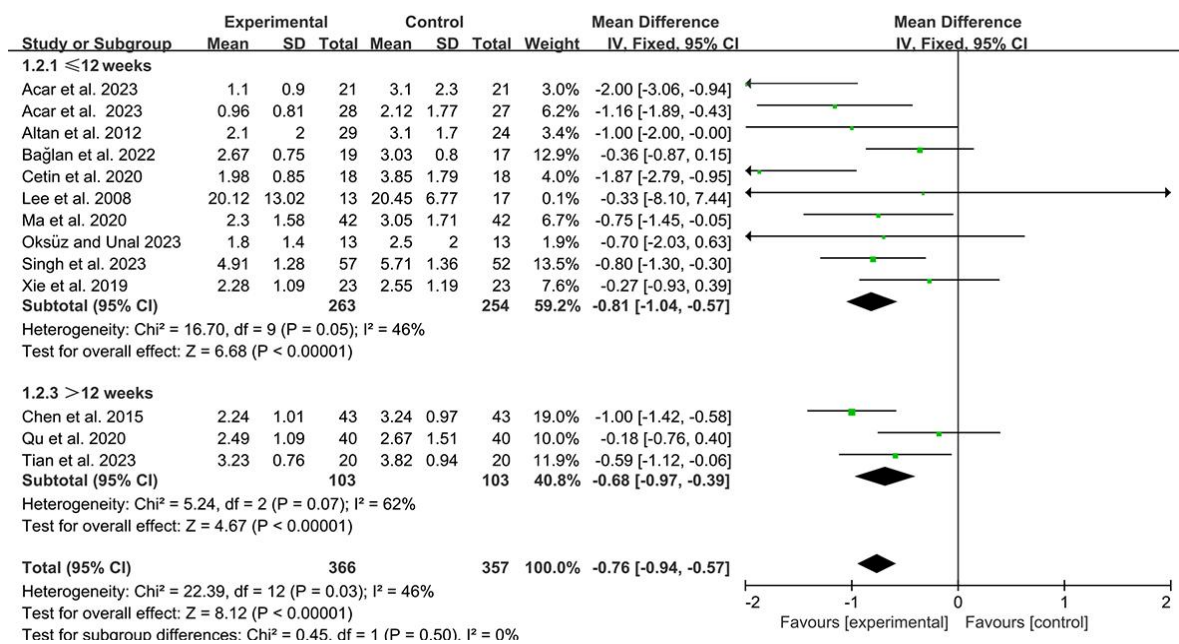
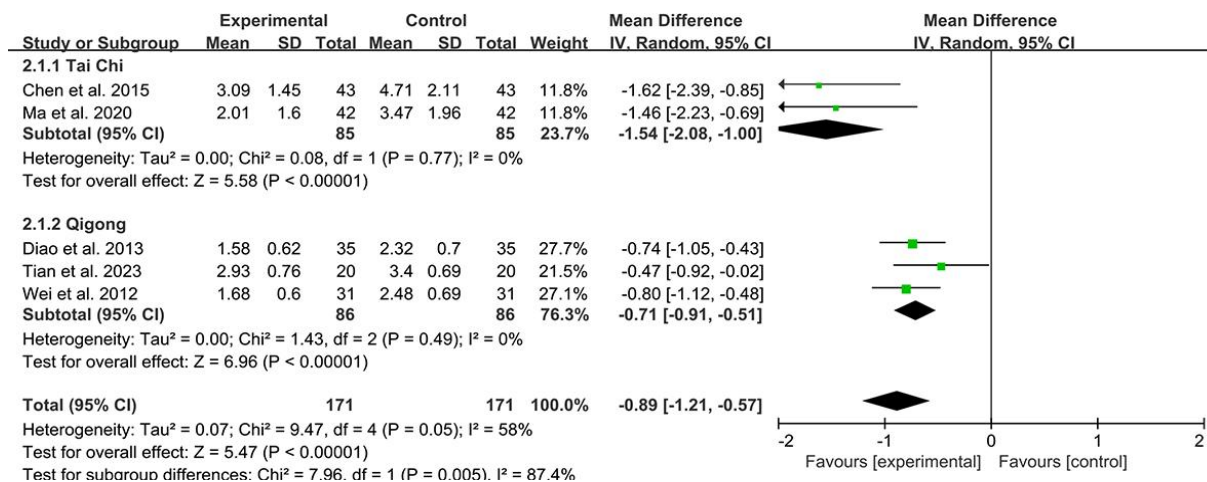


Fig. S3 Subgroup analysis of BASDAI score according to exercise duration



**Fig. S4** Subgroup analysis of BASDAI score according to exercise frequency



**Fig. S5** Subgroup analysis of VAS score according to exercise duration