

Appendix S1. Search strategy

The search strategies for MEDLINE, PsycINFO, and Cochrane Central Register of Controlled Trials are identical, and were conducted through Ovid.

Ovid Search Strategy:

1. (MS OR "multiple sclerosis").mp.
2. ("physical activit*" OR exercis* OR cycl* OR bicycl* OR treadmill OR walk* OR aerobic* OR train* OR aqua* OR strength* OR swim* OR anaerobic* OR rehab* OR endurance OR resistance OR activit* OR fitness).mp.
3. (Anxiety OR anxious* OR tension OR panic OR mood OR stress OR "mental health").mp.
4. (Random* OR trial OR RCT).mp.
5. 1 and 2 and 3 and 4

CINAHL Search Strategy:

(MS OR "multiple sclerosis") AND ("physical activit*" OR exercis* OR cycl* OR bicycl* OR treadmill OR walk* OR aerobic* OR train* OR aqua* OR strength* OR swim* OR anaerobic* OR rehab* OR endurance OR resistance OR activit* OR fitness) AND (Anxiety OR anxious* OR tension OR panic OR mood OR stress OR "mental health") AND (Random* OR trial OR RCT)

Figure 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram of study selection process

Search included studies published up to March 30, 2018. MS, multiple sclerosis; RCT, randomized controlled trial.

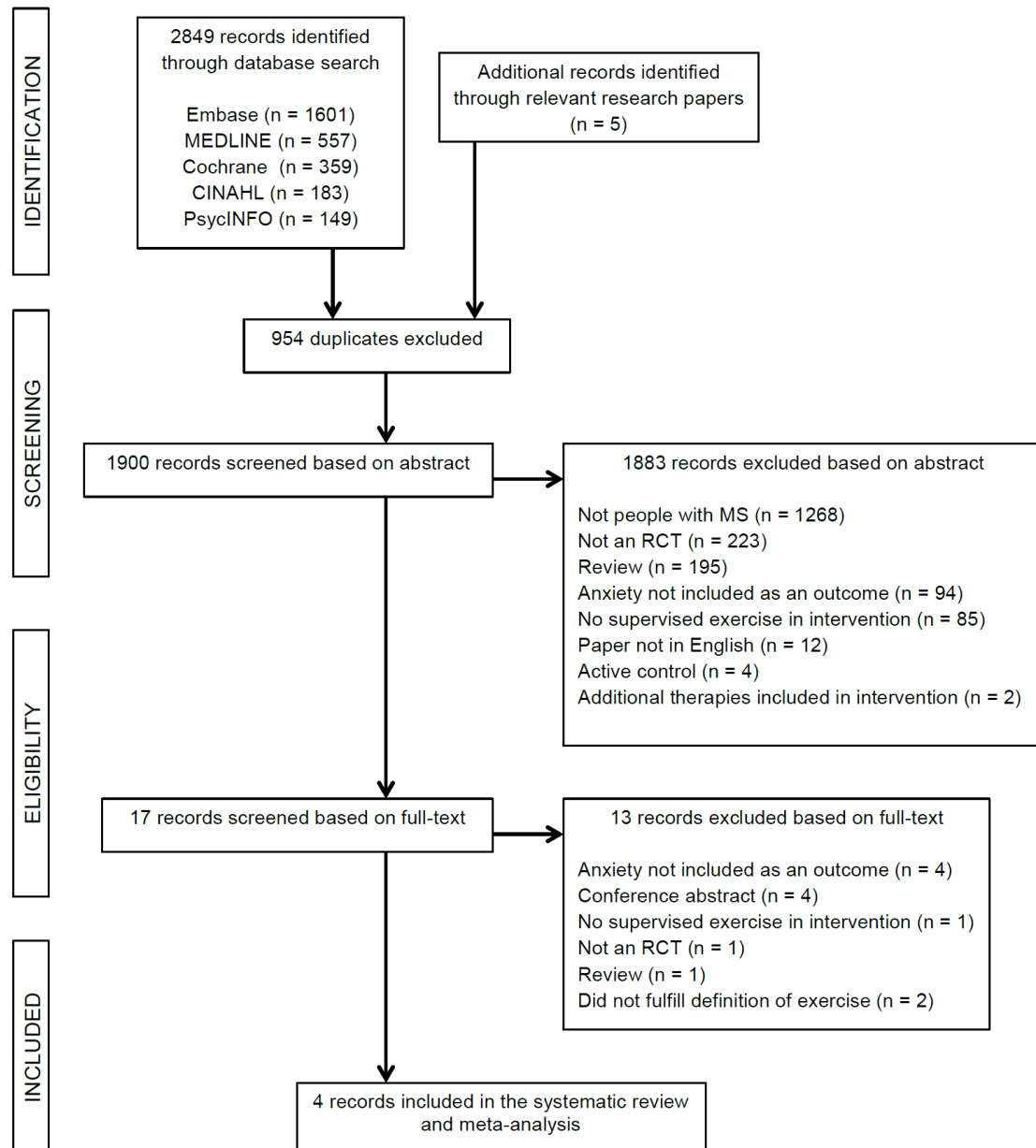


Table S1. List of data extracted from all eligible studies

Citation details
Reference (1st Author, Year) Study identification Study design Country Name of trial (if applicable) Sources used to obtain study information (e.g. journal publication, protocol)
Details of the study's methods
From where were the study participants recruited? E.g. hospital, community, etc. Inclusion criteria for enrollment into study Exclusion criteria for enrollment into study Diagnostic criteria used? Type of diagnostic criteria used Type of MS Type of exercise Physical intensity of exercise Mean (SD) EDSS Mean (SD) time since diagnosis to randomization Number of participants on anxiety medication and MS medication Mean (SD) age of participants at baseline (years) Number of participants randomized Number of females randomized Exercise duration per week (hours) Intervention duration (weeks) Minutes of exercise per week Anxiety measure(s) used Was the measure self or clinician reported? Was anxiety the primary outcome?
Randomization
What method was used to generate the random allocation?

<p>Is this method random?</p> <p>Was the allocation sequence concealed until participants were recruited and assigned to interventions?</p> <p>Were participants aware of their assigned intervention during the trial?</p> <p>Were carers and trial personnel aware of participants' assigned intervention during the trial?</p>
Details of the statistical methods
<p>Was there a sample size calculation?</p> <p>Describe the statistical analysis used to analyze the data</p> <p>Was evidence of robustness provided?</p> <p>What analyses were used to test for robustness?</p> <p>Were there analyses to estimate the effect of starting and adhering to the intervention?</p>
Results
<p>Baseline</p> <p>Number of participants randomized to intervention group</p> <p>Were there baseline imbalances that suggest a problem with the randomization process?</p> <p>Anxiety score (mean and SD) for intervention group</p> <p>Number of participants randomized to comparison group</p> <p>Anxiety score (mean and SD) for comparison group</p> <p>Follow-up immediately after intervention finishes</p> <p>Timing of follow-up 1 (weeks)</p> <p>Number of participants lost to follow-up in intervention group (excluded from analysis)</p> <p>Anxiety score (mean and SD) for intervention group</p> <p>Number of participants lost to follow-up in comparison group (excluded from analysis)</p> <p>Anxiety score (mean and SD) for comparison group</p> <p>Effect estimate (e.g. mean difference and 95% CI)</p> <p>Follow-up after intervention finishes</p> <p>Timing of follow-up 2 (weeks)</p>

Number of participants lost to follow-up in intervention group (excluded from analysis)

Anxiety score (mean and SD) for intervention group

Number of participants lost to follow-up in comparison group (excluded from analysis)

Anxiety score (mean and SD) for comparison group

Effect estimate (e.g. mean difference and 95% CI)

Were there any deviations from the intended intervention?

Were deviations from the intended intervention unbalanced between groups?

Were outcome assessors aware of the intervention received by study participants?

Abbreviations: CI=Confidence Interval; EDSS=Expanded Disability Status Scale;

MS=Multiple sclerosis; SD=Standard deviation.