

EPA guidance on exercise as a treatment for severe mental illness: a systematic review of the evidence, and position statement from the European Psychiatric Association (EPA), supported by the International Organization of Physical Therapists in Mental Health (IOPTMH)

Citation

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Review question

The overall aim of this meta-review is to address the following question: What are the benefits of exercise among people with pooled serious mental illness (SMI) and individual SMI including schizophrenia spectrum, bipolar disorder and major depression?

Searches

Two independent authors will search MEDLINE/PubMed, PsycINFO, EMBASE and the Cochrane databases, from their respective inception dates, for systematic reviews (with and without meta-analyses) or randomised controlled trials of studies investigating exercise among people with SMI, including schizophrenia, bipolar disorder or depression.

The search terms will include (exercise or aerobic exercise or physical activity or resistance training) and (schizophrenia or psychosis or psychotic or major depression or depression or bipolar disorder or serious mental illness or serious mental disorder).

We will also search the reference lists of all included articles.

Types of study to be included

We will follow the European Psychiatric Association manual for identifying and conducting this review, and the evidence will be hierarchically considered from systematic reviews, randomised controlled trials and, if required, observational studies. The specific inclusion criteria are as follows: 1) Systematic reviews (with or without meta-analyses) that synthesize randomised, controlled clinical trials or randomised controlled trials (RCTs) or controlled clinical trials (CCTs); 2) Involve exercise interventions, including aerobic, high-intensity and resistance exercise as monotherapy, or in conjunction with other treatment options including psychotropic medication or psychological therapies; 3) Include people with pooled SMI or schizophrenia spectrum, bipolar disorder or major depression, confirmed through validated assessment measures (e.g. DSM, ICD criteria); 4) Have a non-active/non-exercise control group (e.g. does not include physical activity).

Condition or domain being studied

Severe mental illnesses (SMI: major depressive disorder, bipolar disorder, schizophrenia) with its high frequencies and global disease burden are of enormous public health importance, as they are associated with and observed increase in physical morbidity (cardiometabolic disorders), overall mortality, and specific-cause mortality (suicidality, cardio-metabolic disorder related deaths).

Participants/population

We will include people with SMI residing in any location, and of any age.

Intervention(s), exposure(s)

We will include systematic reviews/RCTs/CCTs investigating the benefits of exercise in people with SMI. Exercise is here defined as “planned, structured, and repetitive and has as a final or an intermediate objective the improvement or maintenance of physical fitness.” (Caspersen et al 1985).

Within this definition, we will include aerobic exercise, high-intensity exercise, resistance exercise and mixed exercise (i.e. aerobic and resistance exercise).

We will consider exercise studies used as monotherapy, or in combination with other types of treatment, e.g. psychotropic medication or psychological interventions.

Comparator(s)/control

All relevant control interventions will be included, for example:

- Treatment as usual/usual care;
- Waiting list;
- No treatment.

Context

We will include systematic reviews of exercise interventions and newer exercise RCTs involving people with SMI in any setting.

Main outcome(s)

The degree of psychopathology/mental health symptoms reported in each study, e.g. negative/ positive symptoms in people with schizophrenia; depressive symptoms in people with major depression or bipolar disorder.

Additional outcome(s)

We will include a wide range of secondary outcomes including:

Physical health factors: e.g. cardiovascular or metabolic parameter changes;

Anthropometric measures: e.g. body mass index, waist circumference;

Body composition measures: e.g. amount of intra-abdominal and cardiac adipose tissue;

Cardiorespiratory fitness (expressed as percentage maximal or peak oxygen uptake);

Muscular fitness;

Increasing physical activity levels;

Biomarkers, e.g. HbA1c, c-reactive protein;

Cognitive function;

Quality of life;

Adverse events;

Brain function or connectivity, e.g. magnetic resonance imaging or diffusor tension imaging changes;

Metabolic changes in MRI-spectroscopy;

Economic evaluations.

Data extraction (selection and coding)

Data extraction will be led by one author and cross-checked by another. We will extract data from systematic reviews and meta-analyses of RCTs/ CCTs investigating exercise interventions including:

the number of studies included, the number of participants in each arm, participant demographics, the length of follow-up, details of the exercise intervention, the statistical analyses conducted, effect size information, heterogeneity, publication bias and details of any meta-regression and subgroup analyses conducted.

If a systematic review is not available for an outcome, we will extract information from newer RCTs/ CCTs, including:

- Study design: randomisation, description of allocation concealment and blinding;
- Study participants: inclusion and exclusion criteria, country, region, population studied, and baseline characteristics such as age, ethnicity, sex, socio-economic indicators;
- Intervention and comparison groups: the frequency, intensity and type of exercise intervention, the duration, the mode of delivery, the person responsible for delivering the intervention, whether the intervention was conducted in a group or individual setting, the motivational strategies used, and full details of the control groups.
- Outcomes of interest, losses to follow-up and study sponsors.

Risk of bias (quality) assessment

Two independent authors will assess the quality of the systematic reviews and meta-analyses using the AMSTAR tool. The quality of the evidence will be graded using the SIGN (2011) recommendations, in accordance with EPA guidelines.

Strategy for data synthesis

Wherever possible, in accordance with EPA guidelines, we will summarise the effect sizes reported in the systematic reviews and meta-analyses using a best evidence synthesis, and will grade the evidence as indicated above. If we encounter sufficient RCTs for an abovementioned outcome, for which no current meta-analysis exists, we will pool the data for this outcome with a random effects meta-analysis, investigating the effects of exercise versus control conditions. For continuous data, we will calculate the Hedges' g statistic and 95% CIs comparing the outcomes of exercise versus control conditions, and for continuous data, we will calculate odds ratios or relative risks and 95% CIs. We will calculate heterogeneity using the Cochran's Q and the I-squared statistic, and publication bias will be assessed by means of a visual inspection of a funnel plot, and by the use of Begg's and Egger's regression tests. If publication bias is identified, the fail safe number of studies will be calculated.

Analysis of subgroups or subsets

We will report the subgroups within the systematic reviews. If we encounter sufficient RCTs to enable us to conduct a novel meta-analysis not reported in previous literature, we may conduct additional subgroup analyses to explore the benefits of exercise according to diagnosis, study setting, the type of exercise intervention, the grading of the study evidence and the control group used.

Contact details for further information

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Type and method of review

Systematic review

Anticipated or actual start date

01 June 2017

Anticipated completion date

01 June 2018

Funding sources/sponsors

This research received no specific funding.

BS and FG are, however, supported in part by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care South London at King's College Hospital NHS Foundation Trust.

The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR or the Department of Health.

Conflicts of interest

None known

Language

English

Country

England

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Bipolar Disorder; Depressive Disorder, Major; Exercise; Exercise Therapy; Humans; Mental Disorders; Mental Health; Mentally Ill Persons; Organizations; Practice Guidelines as Topic; Schizophrenia; Treatment Outcome

Date of registration in PROSPERO

30 May 2017

Date of first submission

15 January 2018

Details of any existing review of the same topic by the same authors

We are not aware of any existing EPA guidelines that have summarised and graded the evidence of exercise for people with SMI.

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	Yes
Risk of bias (quality) assessment	Yes	Yes
Data analysis	Yes	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they

understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

30 May 2017

17 January 2018