

# INPLASY PROTOCOL

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## Effects of exercise on emotion regulation: A protocol for systematic review and meta-analysis

Yin, ZG<sup>1</sup>; Yang, CB<sup>2</sup>; Liu, T<sup>3</sup>; Yu, JL<sup>4</sup>.

**Review question / Objective:** Having a good ability to regulate emotions is able to prevent or more quickly reduce the impact of negative emotional states on these events. Exercise enhances an individual's physical and psychological adaptation, and regular exercise can reduce the risk associated with disorders such as anxiety and depression. Despite significant advances in the psychological community in understanding emotions and emotion regulation processes, neurobiological evidence for mood changes is insufficient due to the complex mechanisms underlying human emotions. Therefore, there is a need for more quantitative data to better understand the effect of exercise on emotion regulation. **Participants:** Physically healthy people (no mental illness or underlying disease). **Intervention:** exercise. **Comparison:** rest, or sedentary stretching activities, meditation, etc. **Outcome indicators:** POMS depression subscale; State-Trait Anxiety Inventory (STAI); Feeling Scale; Event-related potentials (ERP) etc. **Type of study:** RCT.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 June 2023 and was last updated on 06 June 2023 (registration number INPLASY202360022).

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**Corresponding author:**  
Zhonggen Yin

457686478@qq.com

**Author Affiliation:**  
Chengdu Sport University,  
Chengdu, Sichuan Province,  
China.

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**Review Stage at time of this  
submission:** Data analysis.

**Conflicts of interest:**  
None declared.

### INTRODUCTION

**Review question / Objective:** Having a good ability to regulate emotions is able to prevent or more quickly reduce the impact of negative emotional states on these events. Exercise enhances an individual's

physical and psychological adaptation, and regular exercise can reduce the risk associated with disorders such as anxiety and depression. Despite significant advances in the psychological community in understanding emotions and emotion regulation processes, neurobiological

evidence for mood changes is insufficient due to the complex mechanisms underlying human emotions. Therefore, there is a need for more quantitative data to better understand the effect of exercise on emotion regulation. Participants: Physically healthy people (no mental illness or underlying disease). Intervention: exercise. Comparison: rest, or sedentary stretching activities, meditation, etc. Outcome indicators: POMS depression subscale; State-Trait Anxiety Inventory (STAI); Feeling Scale; Event-related potentials (ERP) etc. Type of study: RCT.

**Condition being studied:** Effective emotion regulation is essential for overall mental health, so it's important to investigate potential ways to optimize emotion regulation. However, the previous literature has mostly focused on a priori methods, taking into account well-studied brain networks and their changes after regular exercise. In addition, while the effects of aerobic exercise on cognitive function have been studied, the neural mechanisms underlying its effects on mood remain elusive.

## METHODS

**Search strategy:** Terms: (((TS=(Emotional Regulation or Emotional Regulations or Regulation, Emotional or Regulations, Emotional or Emotion Self-Regulation or Emotion Self Regulation or Emotion Self-Regulations or Self-Regulation, Emotion or Self-Regulations, Emotion or Emotional Self-Regulation or Emotional Self Regulation or Emotional Self-Regulations or Self-Regulation, Emotional or Self-Regulations, Emotional or Emotion Regulation or Regulation, Emotion))) and (TS=(Exercise or Exercises or Physical Activity or Activities, Physical or Activity, Physical or Physical Activities or Exercise, Physical or Exercises, Physical or Physical Exercise or Physical Exercises or Acute Exercise or Acute Exercises or Exercise, Acute or Exercises, Acute or Exercise, Isometric or Exercises, Isometric or Isometric Exercises or Isometric Exercise or Exercise, Aerobic or Aerobic Exercise or Aerobic Exercises or Exercises, Aerobic or

Exercise Training or Exercise Trainings or Training, Exercise or Trainings, Exercise)) NOT (SILOID=="PPRN")) and ((TS=(randomized controlled trial or randomized or placebo)) or (AB=(randomized controlled trial or randomized or placebo))). Electronic databases: WOS; EMBASE; PUBMED; COCHRANE LIBRARY; PSYCINFO.

**Participant or population:** XPhysically healthy people (no mental illness or underlying disease).

**Intervention:** Exercise.

**Comparator:** Rest, or sedentary stretching activities, meditation, etc.

**Study designs to be included:** Randomized controlled trials (RCTs).

**Eligibility criteria:** Inclusion criteria1. The type of study must be a randomized controlled trial2. Participants must be in good healthExclusion criteria1. The sample size is very small2. Outcome data were missing.

**Information sources:** WOS; EMBASE; PUBMED; COCHRANE LIBRARY; PSYCINFO.

**Main outcome(s):** POMS depression subscale; State-Trait Anxiety Inventory (STAI); Feeling Scale; Event-related potentials (ERP) etc.

**Quality assessment / Risk of bias analysis:** Cochrane tool.

**Strategy of data synthesis:** There was heterogeneity and random-effects pooled data were selected; There was no heterogeneity and fixed-effect pooled data were selected.

**Subgroup analysis:** Subgroup studies were conducted based on factors such as gender, age, exercise style, and other factors of the participants.

**Sensitivity analysis:** After deleting any one of the documents, the combined results of

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the remaining documents are not much different from those without deletion, which means that the sensitivity analysis has passed.

**Language restriction:** English.

**Country(ies) involved:** China.

**Keywords:** Exercise, emotion regulation, systematic review, protocol.

**Contributions of each author:**

Author 1 - Zhonggen Yin.

Email: 457686478@qq.com

Author 2 - Chengbo Yang.

Author 3 - Tong Liu.

Author 4 - Jialiang Yu.