

## Supplementary Online Content

Herring MP, Puetz TW, O'Connor PJ, Dishman RK. Effect of exercise training on depressive symptoms among patients with a chronic illness: a systematic review and meta-analysis of randomized controlled trials. *Arch Intern Med*. 2012;172(2):101-111.

**eReferences.** References for Trials Included in the Meta-Analysis

**eTable 1.** Definitions for Levels of Moderators

**eFigure 1.** Funnel Plot

This supplementary material has been provided by the authors to give readers additional information about their work.

## **eReferences. References for Trials Included in the Meta-analysis**

### **Patients with a cardiovascular or cardiometabolic disease**

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### **Patients with chronic pain other than fibromyalgia**

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### **Patients with neurological disorders other than multiple sclerosis**

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### **Patients with multiple sclerosis**

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### **Patients with “other medical illnesses”**

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### **Patients with psychological disorders other than depression**

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**eTable 1. Definitions for Levels of Moderators**

Effect Moderator	Levels
<b>Primary</b> Trial Primary Outcome Change	<b>No change:</b> the confidence interval corresponding to Hedges' d effect size for the primary outcome change included zero <b>Significant change:</b> the confidence interval corresponding to Hedges' d effect size for the primary outcome change did not include zero <b>Not reported:</b> not enough information was reported to estimate whether the confidence interval corresponding to Hedges' d effect size for the primary outcome change did or did not include zero
Physical Activity Exposure	<b>Moderate:</b> intervention met Federal guidelines for moderate physical activity (150 minutes moderate intensity exercise per week) <b>Vigorous:</b> intervention met Federal guidelines for vigorous physical activity (75 minutes vigorous intensity exercise per week) <b>Not meeting either:</b> intervention did not meet moderate or vigorous physical activity recommendation <b>Not reported:</b> physical activity data were not obtained or were inadequately reported to determine whether recommendations were met
Illness	<b>Physical</b> <b>Cancer:</b> cancer patients and survivors <b>CV:</b> cardiovascular patients (e.g., CHD, hypertension, stroke) <b>COPD:</b> chronic obstructive pulmonary disease patients <b>Obesity:</b> obese patients not categorized in other illness category <b>MISC:</b> patients with chronic illnesses not categorized above  <b>Psychosomatic/Neurological</b> <b>Fibromyalgia:</b> fibromyalgia patients <b>MS:</b> multiple sclerosis patients <b>Neurological:</b> patients with neurological disorders other than MS (e.g., Alzheimer's dementia, spinal cord injury) <b>Psychological:</b> patients with a psychological disorder (e.g., eating disorder, generalized anxiety disorder, panic disorder) other than depression <b>Pain:</b> patients with chronic pain conditions (e.g., osteoarthritis, back pain) other than fibromyalgia
Fitness Change	<b>No change:</b> the confidence interval for Hedges' d effect size for fitness change included zero <b>Increased fitness:</b> the confidence interval for Hedges' d effect size for fitness change did not include zero <b>Not reported:</b> not enough information was reported to estimate whether the confidence interval for Hedges' d effect size for fitness change did or did not include zero
Blinded Allocation	<b>Yes:</b> research staff who conducted depressive symptom assessments were blinded to treatment allocation <b>No:</b> research staff who conducted depressive symptom assessments were not blinded to treatment allocation
Attention-Control Use	<b>Yes:</b> the intervention reported the use of an attention-control comparison condition in which participants in the exercise and control conditions were exposed to research staff for an equal amount of time. <b>No:</b> the intervention did not report the use of an attention-control condition
Intent-to-Treat Analysis	<b>Yes:</b> the intervention reported the use of intent-to-treat analysis for depressive symptoms <b>No:</b> the intervention did not report the use of intent-to-treat analysis

**eTable 1. Definitions for Levels of Moderators (cont.)**

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Effect Moderator	Levels
<b>Secondary</b>	
Exercise Session Duration	<b>10 to 20 minutes:</b> sessions lasted 10-20 minutes <b>21 to 30 minutes:</b> sessions lasted 21-30 minutes <b>31 to 45 minutes:</b> sessions lasted 31-45 minutes <b>&gt; 45 minutes:</b> sessions lasted greater than 45 minutes <b>Not reported:</b> session duration information was not reported
Program Length	<b>3 to 12 weeks:</b> exercise training of 3 to 12 weeks <b>13 to 26 weeks:</b> exercise training of 13 to 26 weeks <b>&gt; 26 weeks:</b> exercise training of greater than 26 weeks
Intervention Type	<b>Exercise alone:</b> the intervention compared exercise training to a no treatment, usual care, or wait list comparison condition <b>Multi-component intervention:</b> the intervention compared exercise training plus a placebo (e.g., placebo pill, stretching) with the same placebo, or exercise training plus a second treatment (e.g., cognitive-behavioral therapy, diet, pharmacotherapy) was compared with the same second treatment
Comparison Type	<b>No treatment:</b> the comparison condition involved no treatment <b>Usual care:</b> the comparison condition involved usual medical care <b>Wait list:</b> the comparison condition involved waiting to participate in the intervention <b>Placebo or second treatment:</b> the comparison condition involved a placebo or a second treatment that was added to the exercise condition
Age	<b>&lt; 30 years:</b> sample mean age of less than 30 years <b>30-60 years:</b> sample mean age of 30 to 60 years <b>&gt; 60 years:</b> sample mean age of greater than 60 years
Gender	<b>Female:</b> data from females only <b>Male:</b> data from males only <b>Mixed:</b> data from samples that combined females and males
Exercise Intensity	<b>Low:</b> low relative intensity: <40% heart rate reserve (HRR), <64% maximal heart rate (MHR), <12 perceived exertion (RPE), or <46% maximal oxygen uptake (VO <sub>2</sub> max) <b>Moderate:</b> moderate relative intensity: 40-59% HRR, 64-76% MHR, 12-13 RPE, or 46-63% VO <sub>2</sub> max <b>Vigorous:</b> high relative intensity: ≥60% HRR, ≥77% MHR, ≥14 RPE, or ≥64% VO <sub>2</sub> max <b>Not reported:</b> exercise intensity was inadequately reported

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**eTable 1. Definitions for Levels of Moderators (cont.)**

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Effect Moderator	Levels
Exercise Mode	<b>Aerobic:</b> used exercise modes commonly described as aerobic (e.g., walking, jogging, cycling) only <b>Resistance:</b> used weight lifting only <b>Aerobic+Resistance:</b> used both aerobic and weight lifting modes. <b>Aerobic+:</b> used traditional aerobic exercise mode and a second type of physical activity that was not weight lifting or yoga (e.g., flexibility, games) <b>Resistance+:</b> used weight lifting and a second type of physical activity that was not aerobic or yoga (e.g., flexibility, games) <b>Yoga:</b> used yoga only <b>Mixed:</b> used aerobic and weight lifting and another type of physical activity that was not yoga (e.g., games) <b>Tai Chi:</b> used Tai Chi Chuan alone <b>Other:</b> used a single type of exercise not categorized above
Exercise Timing	<b>Continuous:</b> Exercise bout was continuous (e.g., jogging) <b>Intermittent:</b> Exercise bout was intermittent (e.g., weight lifting) <b>Not reported:</b> Inadequate information was reported to determine exercise timing
Frequency	<b>1:</b> 1 exercise training session per week <b>2:</b> 2 exercise training sessions per week <b>3:</b> 3 exercise training sessions per week <b>4:</b> 4 exercise training sessions per week <b>5:</b> 5 exercise training sessions per week <b>7:</b> 7 exercise training sessions per week
Setting	<b>Home:</b> Exercise training was home-based <b>Clinic:</b> Exercise training was performed at a clinical research facility <b>Community facility:</b> Exercise training was performed at a community facility (e.g., fitness club or gym) <b>Mixed:</b> Exercise training was performed both at home and either at a clinical research or community facility
Social Interaction	<b>Alone:</b> Exercise training was performed alone <b>One-to-one with a leader:</b> Exercise training was performed alone except for a single exercise specialist <b>Group:</b> Exercise training was performed in a group with other patients <b>Mixed:</b> Exercise training included exercise bouts completed alone and in a group with other patients
Indoor-Outdoor	<b>Indoors:</b> Exercise training was performed indoors <b>Outdoors:</b> Exercise training was performed outdoors <b>Mixed:</b> Exercise training was performed both indoors and outdoors <b>Not reported:</b> Inadequate information was reported regarding whether exercise training was performed indoors or outdoors
Timing of Effect	<b>During treatment:</b> Hedges' d effect size corresponds to a measurement time during the intervention (e.g., midpoint) <b>Post treatment:</b> Hedges' d effect size corresponds to a post-intervention measurement <b>Follow-up:</b> Hedges' d effect size corresponds to a follow-up measurement

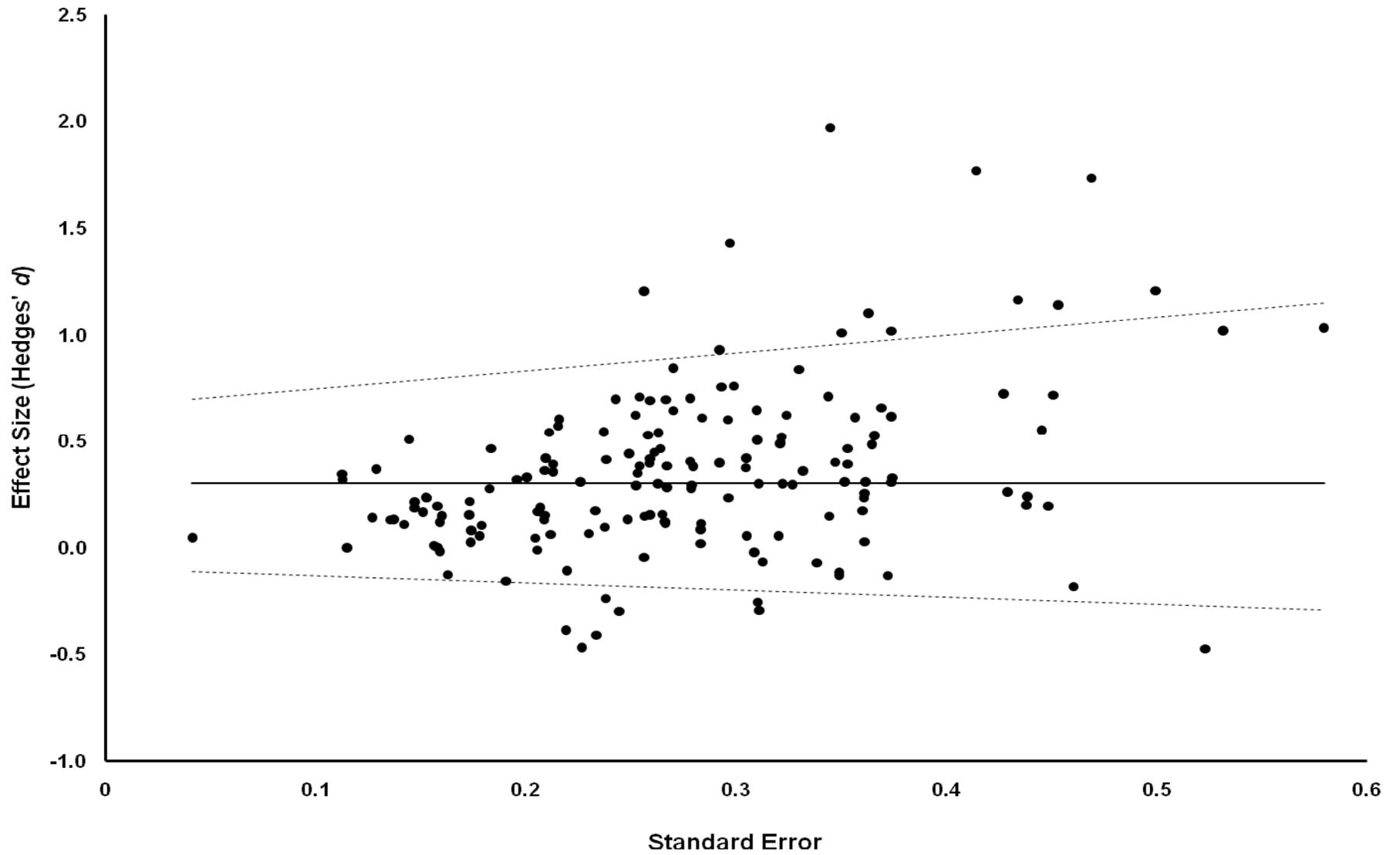
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**eTable 1. Definitions of Levels of Moderators**

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Effect Moderator	Levels
Author Reported Fitness Significance	<b>No:</b> authors reported that fitness was not significantly changed <b>Yes:</b> authors reported that fitness was significantly changed <b>Not reported:</b> significance of fitness change not reported
Depression Measure	<b>BDI:</b> used the Beck Depression Inventory <b>CES-D:</b> used the Center for Epidemiological Studies – Depression Scale <b>HADS-D:</b> used the depression scale of the Hospital Anxiety and Depression Scale <b>HAM-D:</b> used the Hamilton Rating Scale for Depression <b>FIQ-D:</b> used the depression scale of the Fibromyalgia Impact Questionnaire <b>GDS:</b> used the Geriatric Depression Scale <b>TAS:</b> used Toronto Attitude Scale <b>DASS:</b> used the depression scale of the Depression Anxiety Stress Scales <b>SCL-90:</b> used depression scale of the Symptom Checklist-90 <b>Other:</b> used depression measure not categorized above

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eFigure 1. Funnel Plot