

*PHYSICAL EXERCISE AND MAJOR DEPRESSIVE DISORDER IN ADULTS: SYSTEMATIC REVIEW AND
META-ANALYSIS.*

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SEARCH STRATEGY

MEDLINE (via OVID)

Hits: 5

No restriction on timeline

Medline was searched with appropriate Medical Subject Headings (MeSH). A filter was established: randomized controlled trials.

1	exp " Depressive Disorder, Major "	35624
2	Depression, Involutional/	35624
3	Major Depressive Disorder Melancholia/	0
4	Involutional Paraphrenia/	35624
5	Involutional Psychosis/	35624
6	Involutional/	0
7	1 or 2 or 3 or 4 or 5 or 6	35624
8	exp " Resistance Training "	11203
9	Training, Resistance/	11203
10	Strength Training/	11203
11	Training, Strength/	11203
12	Weight-Lifting Strengthening Program/	11203
13	Strengthening Program, Weight-Lifting/	11203
14	Strengthening Programs, Weight-Lifting/	11203
15	Weight Lifting Strengthening Program/	11203
16	Weight-Lifting Strengthening Programs/	11203
17	Weight-Lifting Exercise Program/	11203
18	Exercise Program, Weight-Lifting/	11203
19	Exercise Programs, Weight-Lifting/	11203
20	Weight Lifting Exercise Program/	11203
21	Weight-Lifting Exercise Programs/	11203
22	Weight-Bearing Strengthening Program/	11203
23	Strengthening Program, Weight-Bearing/	11203
24	Strengthening Programs, Weight-Bearing/	11203
25	Weight Bearing Strengthening Program/	11203
26	Weight-Bearing Strengthening Programs/	11203
27	Weight-Bearing Exercise Program/	11203
28	Exercise Program, Weight-Bearing/	11203
29	Exercise Programs, Weight-Bearing/	11203
30	Weight Bearing Exercise Program/	11203
31	Weight-Bearing Exercise Programs/	11203
32	8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31	11203
33	exp " Exercise "	231597
34	Acute Exercise/	132154
35	Aerobic Exercise/	132154
36	Exercise Training/	132154
37	Exercise, Aerobic/	132154

38	Exercise, Physical/	132154
39	33 or 34 or 35 or 36 or 37 or 38	231597
40	7 and 32 and 39	5

CENTRAL

Hits: **131**

No restriction on timeline

CENTRAL was searched with appropriate Medical Subject Headings (MeSH). A filter was established: randomized controlled trials.

#1	Depressive Disorder, Major	14304
#2	Depression, Involutional	54
#3	Major Depressive Disorder Melancholia	119
#4	Involutional Paraphrenia	2
#5	Involutional Psychosis	12
#6	Involutional	165
#7	#1 OR #2 OR #3 OR #4 OR #5 OR #6	14445
#8	Resistance Training	14847
#9	Training, Resistance	14847
#10	Strength Training	18025
#11	Training, Strength	18025
#12	Weight-Lifting Strengthening Program	40
#13	Strengthening Program, Weight-Lifting	40
#14	Strengthening Programs, Weight-Lifting	24
#15	Weight Lifting Strengthening Program	71
#16	Weight-Lifting Strengthening Programs	24
#17	Weight-Lifting Exercise Program	323
#18	Exercise Program, Weight-Lifting	323
#19	Exercise Programs, Weight-Lifting	126
#20	Weight Lifting Exercise Program	406
#21	Weight-Lifting Exercise Programs	126
#22	Weight-Bearing Strengthening Program	134
#23	Strengthening Program, Weight-Bearing	134
#24	Strengthening Programs, Weight-Bearing	68
#25	Weight Bearing Strengthening Program	143
#26	Weight-Bearing Strengthening Programs	68
#27	Weight-Bearing Exercise Program	497
#28	Exercise Program, Weight-Bearing	497
#29	Exercise Programs, Weight-Bearing	164
#30	Weight Bearing Exercise Program	545
#31	Weight-Bearing Exercise Programs	164
	#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31	
#32		25442
#33	Exercise	112598
#34	Acute Exercise	11230

#35	Aerobic Exercise	15012
#36	Exercise Training	38383
#37	Exercise, Aerobic	15012
#38	Exercise, Physical	49875
#39	#33 OR #34 OR #35 OR #36 OR #37 OR #38	112598
#40	#7 AND #32 AND #39	131

Embase

Hits: 50

No restriction on timeline

Embase was searched with appropriate Medical Subject Headings (MeSH). A filter was established: randomized controlled trials.

#39. #7 AND #31 AND #38	50
#38. #32 OR #33 OR #34 OR #35 OR #36 OR #37	404
#37. 'exercise, physical'	1
#36. 'exercise, aerobic'/de	20
#35. 'exercise training'/de	326
#34. 'aerobic exercise'/de	20
#33. 'acute exercise'/de	21
#32. 'exercise'/exp	404
#31. #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30	24
#30. 'weight-bearing exercise programs'	4
#29. 'weight bearing exercise program'	24
#28. 'exercise programs, weight-bearing'	3
#27. 'exercise program, weight-bearing'	1
#26. 'weight-bearing exercise program'	24
#25. 'weight-bearing strengthening programs'	1
#24. 'weight bearing strengthening program'	3
#23. 'strengthening programs, weight-bearing'	2
#22. 'strengthening program, weight-bearing'	2
#21. 'weight-bearing strengthening program'	3
#20. 'weight-lifting exercise programs'	1
#19. 'weight lifting exercise program'	2
#18. 'exercise programs, weight-lifting'	2
#17. 'exercise program, weight-lifting'	2
#16. 'weight-lifting exercise program'	2
#15. 'weight-lifting strengthening programs'	2
#14. 'weight lifting strengthening program'	2
#13. 'strengthening programs, weight-lifting'	2
#12. 'strengthening program, weight-lifting'	2
#11. 'weight-lifting strengthening program'	2
#10. 'training, strength'	199
#9. 'training, resistance'	192
#8. 'resistance training'/exp	23600

#7. #1 OR #2 OR #3 OR #4 OR #5 OR #6	77166
#6. involuntional	2372
#5. 'involuntional psychosis'/de	15
#4. 'involuntional paraphrenia'	13
#3. 'major depressive disorder melancholia'	13
#2. 'depression, involuntional'/de	321
#1. 'depressive disorder, major'/exp OR 'depressive disorder, major'	75152

PsycINFO

Hits: 0

No restriction on timeline

PsycINFO was searched with appropriate Medical Subject Headings (MeSH). A filter was established: randomized controlled trials.

```
exp " Depressive Disorder, Major"/
"Depression, Involuntional"/
"Major Depressive Disorder Melancholia"/
"Involuntional Paraphrenia"/
"Involuntional Psychosis"/
Involuntional/
exp " Depressive Disorder, Major" / OR Any Field: "Depression, Involuntional" / OR Any Field: "Major
Depressive Disorder Melancholia" / OR Any Field: "Involuntional Paraphrenia" / OR Any 622
Field: "Involuntional Psychosis" / OR Any Field: Involuntional/
exp " Resistance Training"/
"Training, Resistance"/
"Strength Training"/
"Training, Strength"/
"Weight-Lifting Strengthening Program"/
"Strengthening Program, Weight-Lifting"/
"Strengthening Programs, Weight-Lifting"/
"Weight Lifting Strengthening Program"/
"Weight-Lifting Strengthening Programs"/
"Weight-Lifting Exercise Program"/
"Exercise Program, Weight-Lifting"/
"Exercise Programs, Weight-Lifting"/
"Weight Lifting Exercise Program"/
"Weight-Lifting Exercise Programs"/
"Weight-Bearing Strengthening Program"/
"Strengthening Program, Weight-Bearing"/
"Strengthening Programs, Weight-Bearing"/
"Weight Bearing Strengthening Program"/
"Weight-Bearing Strengthening Programs"/
"Weight-Bearing Exercise Program"/
"Exercise Program, Weight-Bearing"/
"Exercise Programs, Weight-Bearing"/
```

"Weight Bearing Exercise Program"/
 "Weight-Bearing Exercise Programs"/
 exp " Resistance Training" / OR Any Field: "Training, Resistance" / OR Any Field: "Strength Training"
 / OR Any Field: "Training, Strength" / OR Any Field: "Weight-Lifting Strengthening Program"
 / OR Any Field: "Strengthening Program, Weight-Lifting" / OR Any Field: "Strengthening Programs,
 Weight-Lifting" / OR Any Field: "Weight Lifting Strengthening Program" / OR Any Field: "Weight-
 Lifting Strengthening Programs" / OR Any Field: "Weight-Lifting Exercise Program" / OR Any
 Field: "Exercise Program, Weight-Lifting" / OR Any Field: "Exercise Programs, Weight-Lifting" 912
 / OR Any Field: "Weight Lifting Exercise Program" / OR Any Field: "Weight-Lifting Exercise
 Programs" / OR Any Field: "Weight-Bearing Strengthening Program" / OR Any Field: "Strengthening
 Program, Weight-Bearing" / OR Any Field: "Strengthening Programs, Weight-Bearing" / OR Any
 Field: "Weight Bearing Strengthening Program" / OR Any Field: "Weight-Bearing Strengthening
 Programs" / OR Any Field: "Weight-Bearing Exercise Program" / OR Any Field: "Exercise Program,
 Weight-Bearing" / OR Any Field: "Exercise Programs, Weight-Bearing" / OR Any Field: "Weight
 Bearing Exercise Program" / OR Any Field: "Weight-Bearing Exercise Programs" /
 exp " Exercise"/

"Acute Exercise"/

"Aerobic Exercise"/

"Exercise Training"/

"Exercise, Aerobic"/

"Exercise, Physical"/

exp " Exercise" / OR Any Field: "Acute Exercise" / OR Any Field: "Aerobic Exercise" / OR Any 9285
 Field: "Exercise Training" / OR Any Field: "Exercise, Aerobic" / OR Any Field: "Exercise, Physical" /
 Any Field: exp " Depressive Disorder, Major" / OR Any Field: Any Field: "Depression, Involutional"
 / OR Any Field: Any Field: "Major Depressive Disorder Melancholia" / OR Any Field: Any Field:
 "Involutional Paraphrenia" / OR Any Field: Any Field: "Involutional Psychosis" / OR Any Field: Any
 Field: Involutional/ AND Any Field: exp " Resistance Training" / OR Any Field: "Training, Resistance"
 / OR Any Field: "Strength Training" / OR Any Field: "Training, Strength" / OR Any Field: "Weight-
 Lifting Strengthening Program" / OR Any Field: "Strengthening Program, Weight-Lifting" / OR Any
 Field: "Strengthening Programs, Weight-Lifting" / OR Any Field: "Weight Lifting Strengthening
 Program" / OR Any Field: "Weight-Lifting Strengthening Programs" / OR Any Field: "Weight-Lifting
 Exercise Program" / OR Any Field: "Exercise Program, Weight-Lifting" / OR Any Field: "Exercise 0
 Programs, Weight-Lifting" / OR Any Field: "Weight Lifting Exercise Program" / OR Any Field: "Weight-
 Lifting Exercise Programs" / OR Any Field: "Weight-Bearing Strengthening Program" / OR Any Field:
 "Strengthening Program, Weight-Bearing" / OR Any Field: "Strengthening Programs, Weight-Bearing"
 / OR Any Field: "Weight Bearing Strengthening Program" / OR Any Field: "Weight-Bearing
 Strengthening Programs" / OR Any Field: "Weight-Bearing Exercise Program" / OR Any Field: "Exercise
 Program, Weight-Bearing" / OR Any Field: "Exercise Programs, Weight-Bearing" / OR Any Field:
 "Weight Bearing Exercise Program" / OR Any Field: "Weight-Bearing Exercise Programs" / AND Any
 Field: exp " Exercise" / OR Any Field: "Acute Exercise" / OR Any Field: "Aerobic Exercise" / OR Any
 Field: "Exercise Training" / OR Any Field: "Exercise, Aerobic" / OR Any Field: "Exercise, Physical" /

Web of science

Hits: 2

No restriction on timeline

Web of science was searched with appropriate Medical Subject Headings (MeSH). A filter was established:
 randomized controlled trials.

" Depressive Disorder, Major"
 "Depression, Involutional"
 "Major Depressive Disorder Melancholia"
 "Involutional Paraphrenia"
 "Involutional Psychosis"

Involutional

1 ((((((ALL=(" Depressive Disorder, Major")) OR
ALL=("Depression, Involutional")))) OR ALL=("Major Depressive
Disorder Melancholia")) OR ALL=("Involutional Paraphrenia")) 1.168
OR ALL=("Involutional Psychosis")) OR ALL=(Involutional)

" Resistance Training"

"Training, Resistance"

"Strength Training"

"Training, Strength"

"Weight-Lifting Strengthening Program"

"Strengthening Program, Weight-Lifting"

"Strengthening Programs, Weight-Lifting"

"Weight Lifting Strengthening Program"

"Weight-Lifting Strengthening Programs"

"Weight-Lifting Exercise Program"

"Exercise Program, Weight-Lifting"

"Exercise Programs, Weight-Lifting"

"Weight Lifting Exercise Program"

"Weight-Lifting Exercise Programs"

"Weight-Bearing Strengthening Program"

"Strengthening Program, Weight-Bearing"

"Strengthening Programs, Weight-Bearing"

"Weight Bearing Strengthening Program"

"Weight-Bearing Strengthening Programs"

"Weight-Bearing Exercise Program"

"Exercise Program, Weight-Bearing"

"Exercise Programs, Weight-Bearing"

"Weight Bearing Exercise Program"

"Weight-Bearing Exercise Programs"

2	((((((((((((((((((((ALL=(" Resistance Training")) OR ALL=("Training, Resistance")) OR ALL=("Strength Training")) OR ALL=("Training, Strength")) OR ALL=("Weight-Lifting Strengthening Program")) OR ALL=("Strengthening Program, Weight-Lifting")) OR ALL=("Strengthening Programs, Weight- Lifting")) OR ALL=("Weight Lifting Strengthening Program")) OR ALL=("Weight-Lifting Strengthening Programs")) OR ALL=("Weight-Lifting Exercise Program")) OR ALL=("Exercise Program, Weight-Lifting")) OR ALL=("Exercise Programs, Weight-Lifting")) OR ALL=("Weight Lifting Exercise Program")) OR ALL=("Weight-Lifting Exercise Programs")) OR ALL=("Weight-Bearing Strengthening Program")) OR ALL=("Strengthening Program, Weight-Bearing")) OR ALL=("Strengthening Programs, Weight-Bearing")) OR ALL=("Weight Bearing Strengthening Program")) OR ALL=("Weight-Bearing Strengthening Programs")) OR ALL=("Weight-Bearing Exercise Program")) OR ALL=("Exercise Program, Weight-Bearing")) OR ALL=("Exercise Programs, Weight-Bearing")) OR ALL=("Weight Bearing Exercise Program")) OR ALL=("Weight-Bearing Exercise Programs"))	19.684
3	(" Exercise" "Acute Exercise" "Aerobic Exercise" "Exercise Training" "Exercise, Aerobic" "Exercise, Physical")	594.833
4	#1 AND #2 AND #3	2

Clinical Trials

Hits: 14

No restriction on timeline

Clinical trials were searched with appropriate Medical Subject Headings (MeSH). A filter was established: randomized controlled trials.

Other terms:	randomized
Study type:	Interventional Studies (Clinical Trials)
Study Results:	All Studies resistance training OR strength training AND Exercise OR Aerobic
Intervention/treatment:	Exercise
Outcome Measure:	Depressive Disorder, Major

https://clinicaltrials.gov/ct2/results?cond=Depressive+Disorder%2C+Major&term=randomized&type=Interventional&age_v=&gndr=&intr=resistance+training+OR+strength+training+AND+Exercise+OR+Aerobic+Exercise&titles=&outc=&spons=&lead=&id=&cntry=&state=&city=&dist=&locn=&rsub=&strd_s=&strd_e=&prcd_s=&prcd_e=&sfpd_s=&sfpd_e=&rfpd_s=&rfpd_e=&lupd_s=&lupd_e=&sort=

Table 1 *Studies excluded and reason for exclusion*

Excluded studies with their respective reason	
Study	Reason for exclusion
Brüchle, 2021 Germany	Interventions based on physical activity programs.
Moncrieft, 2016 USA	The study was conducted with diabetic individuals with depressive symptoms. They did not have a diagnosis of Major Depressive Disorder.
Moraes, 2019 Brazil	The study comparison was aerobic exercise and low-intensity resistance exercise.
Pilu, 2007 Italy	This was a case-control study. They also carried out interventions based on physical activity programs.
Wa Chua, 2020 Hong Kong	Several of the participants in both the intervention and control groups were prescribed psychiatric medications.
Knubben, 2007 Alemania	The population did not have a diagnosis of major depression.
Foley, 2008 New Zealand	Included adults taking antidepressant medications.
Haboush, 2006 USA	This is a pilot study that conducted interventions with depressed older adults. However, they do not report whether they had a diagnosis of major depression.
Salehi, 2016 Iran	The comparator in this study is electroconvulsive therapy.
Kerling, 2015 Germany	Some of the individuals received regular therapy during the exercise interventions.
Legrand, 2016 France	During the interventions, the people were taking antidepressants.

Fig. 1 Risk of bias of individual studies

Summary of risk of bias of studies

Intention-to-treat	Unique ID	Study ID	Experimental	Comparator	Outcome	Weight	D1	D2	D3	D4	D5	Overall	
	1	Blumenthal 1999	Aerobic Exercise	Medication	Depressive symptoms	NA	+	!	+	+	!	+	Low risk
	2	Blumenthal 2007	Aerobic Exercise	Medication	Depressive symptoms	NA	+	+	+	+	+	+	Some concerns
	3	Dunn 2005	Aerobic Exercise	Placebo	Depressive symptoms	NA	+	!	+	+	!	+	High risk
	4	Herman 2002	Aerobic Exercise	Medication	Depressive symptoms	NA	+	+	+	+	!	+	
	5	Khatri 2001	Aerobic Exercise	Medication	Depressive symptoms	NA	+	!	+	!	!	+	D1 Randomisation process
	6	Krogh 2012	Aerobic Exercise	Stretching Exercise	Depressive symptoms	NA	+	!	+	+	+	!	D2 Deviations from the intended interventions
	7	Krogh 2014	Aerobic Exercise	Stretching Exercise	Depressive symptoms	NA	+	!	+	+	+	!	D3 Missing outcome data
	8	Sadeghi 2016	Aerobic Exercise	Cognitive Behavior	Depressive symptoms	NA	+	+	+	+	!	+	D4 Measurement of the outcome
	9	Singh 1996	Resistance Exercise	Health Education Program	Depressive symptoms	NA	!	!	+	+	!	+	D5 Selection of the reported result

Fig. 1 Risk of bias II graph: review authors' judgments about each risk of bias item presented as all included studies

Table 2 *Report of exercise interventions in physical exercise programs*

Report on the completeness of physical exercise interventions in the different modalities: resistance exercise and aerobic exercise			
CERT Ítem	Total interventions	Resistance exercise (n= 1) n (%)	Aerobic exercise (n= 12) n (%)
	(n= 13) n (%)		
1. What (materials)	12 (92.30%)	1 (100%)	11 (91.66%)
2. Who (Provider)	5 (38.46%)	1 (100%)	4 (33.33%)
3. Individual or group	9 (69.23%)	0 (0%)	9 (75.00%)
4. Supervised or unsupervised	13 (100%)	1 (100%)	12 (100%)
5. Adherence report	8 (61.53%)	0 (0%)	8 (66.66%)
6. Motivation strategies	0 (0%)	0 (0%)	0 (0%)
7a. Exercise progression	5 (38.46%)	1 (100%)	4 (33.33%)
7b. Program progression	4 (30.76%)	1 (100%)	3 (25.00%)
8. Replication of the exercise	13 (100%)	1 (100%)	12 (100%)
9. Home component	2 (15.38%)	0 (0%)	2 (16.66%)
10. Non-exercise components	2 (15.38%)	1 (100%)	1 (8.33%)
11. Adverse Event Reporting	9 (69.23%)	1 (100%)	8 (66.66%)
12. Environment	5 (38.46%)	0 (0%)	5 (41.66%)
13. Exercise description	13 (100%)	1 (100%)	12 (100%)
14a. Generic or personalized exercises	13 (100%)	1 (100%)	12 (100%)

14b. Adaptation of exercise to individuals	13 (100%)	1 (100%)	12 (100%)
15. Rules for the initial level	13 (100%)	1 (100%)	12 (100%)
16a. Adherence measurement	8 (61.53%)	0 (0%)	8 (66.66%)
16b. ¿Does the intervention match the planning?	13 (100%)	1 (100%)	12 (100%)

CERT: The Consensus on Exercise Reporting Template tool.

Table 3 Adverse events by degree of severity described for those in the aerobic exercise and usual care groups

EA Degrees	Aerobic exercise (Includes supervised aerobic exercise and unsupervised home aerobic exercise) [25 adverse events, 375 participants] (Total de AE^a - exercise-related AE)	Usual care (pharmacological, psychological or alternative: mind-body exercise, yoga or tai-chi) [39 adverse events, 308 participants] (Total AE^a - AE related to usual care)
1	Grade 1 adverse events: (5 - 5) Muscle event (3-3) Other painful manifestations- Chest pain (1-1) Other painful manifestations- Muscle/joint pain (1-1)	Grade 1 adverse events: Null
2	Grade 2 adverse events: (10 - 0) Mood disturbances-Worsening MDD (6-0*) Mood disturbances-Antidepressants under follow-up (4-0*)	Grade 2 adverse events: (14 - 1) Mood disturbances-Worsening MDD (6-1*) Mood disturbances-Antidepressants in follow-up (8-0*)
3^b	Grade 3 adverse events: (9 - 1) Unspecified medical reasons (3-0*) Medical contraindication (1-1) Mood disturbances-Psychiatric emergencies (3-0*) Mood disturbances-Admission to psychiatry (2-0*)	Grade 3 adverse events: (25 - 21) Medication AE-Dizziness, drowsiness, agitation, diarrhea (19-19) New Medical Condition (2-2) Mood disorders-Psychiatric emergencies (2-0*) Mood disturbances-Admission to psychiatry (2-0*)
4	Grade 4 adverse events: (1 - 0*) Mood disturbances-Suicidal ideation (1-0*)	Grade 4 adverse events: Null
5	Grade 5 adverse events: Null	Grade 5 adverse events: Null
AE =Adverse Event; * =not related to the intervention		
The AE were classified according to the Common Terminology Criteria: grade 1) mild or asymptomatic symptoms; grade 2) indicated moderate, minimal, local or non-invasive intervention and limitation of age-appropriate activities of daily living; grade 3) seriously or medically significant but not immediately life-threatening; grade 4) life-threatening consequences and indicated urgent intervention, or; Grade 5) Death		
^a Includes all AE (both exercise-related and non-exercise-related)		
^b The AE in those who were not reported to be grade 3.		

Table 4 *Subgroup analysis*

Summary of results based on subgroups with one or more studies.								
Outcomes	Subgroups	Studies	Sample		Std. Mean Difference IV, Random, 95% CI	Subgroup I ²	P	Total I ²
			IG	CG				
Depressive symptoms								
	Exercise modalities	7	428	386	-0.27 [-0.58, 0.04]		P = 0.09	76%
	Aerobic Exercise	6	413	373	-0.26 [-0.59, 0.07]	78%	P = 0.12	76%
	Resistance Exercise	1	15	13	-0.43 [-1.18, 0.32]	Not applicable	P = 0.26	76%
	Symptom assessment instrument	7	428	386	-0.27 [-0.58, 0.04]		P = 0.09	76%
	Hamilton Depression Rating Scale	4	265	235	-0.46 [-0.94, 0.01]	83%	P = 0.06	76%
	Beck Depression Inventory	4	163	151	-0.02 [-0.31, 0.28]	41%	P = 0.92	76%
	Body composition	4	238	206	-0.55 [-1.06, -0.04]		P = 0.03	82%
	Overweight adults	2	71	72	-0.05 [-0.55, 0.45]	40%	P = 0.84	82%
	Obese adults	1	104	98	-0.08 [-0.36, 0.20]	0%	P = 0.57	82%
	Overweight and obese adults	1	63	36	-1.27 [-2.65, 0.12]	88%	P = 0.07	82%
	Age comparison	7	428	386	-0.27 [-0.58, 0.04]		P = 0.09	76%
	Under 50 years old	2	119	95	-0.94 [-2.02, 0.13]	90%	P = 0.09	76%
	Over 50 years old	5	309	291	-0.03 [-0.19, 0.14]	0%	P = 0.76	76%
	Physical exercise frequency	7	428	386	-0.27 [-0.58, 0.04]		P = 0.09	76%
	Three days per week	7	398	368	-0.15 [-0.31, 0.01]	65%	P = 0.24	76%

[illegible]

Fig. 2 *Quality of life*

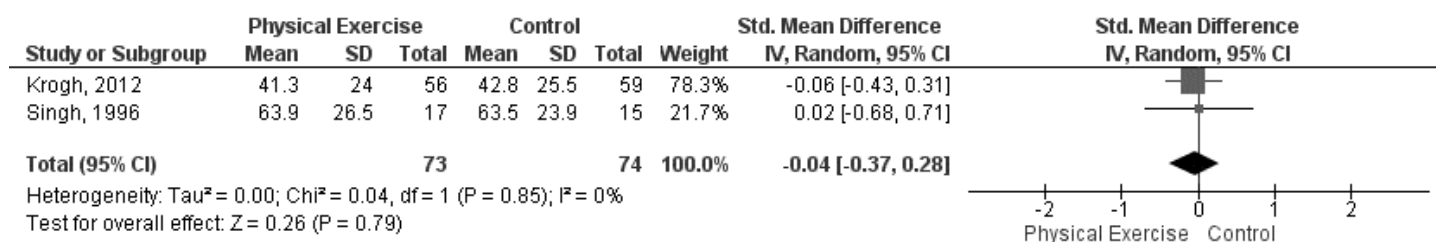


Fig. 2 Analysis of the effect of physical exercise programs on Quality of life in adults with major depressive disorder compared with control. I^2 : heterogeneity, p value <0.05 , Standardized mean difference, Random effects model

Table 5 Summary of findings

Physical exercise compared to usual care, mind-body exercise, or no intervention in adults with major depressive disorder who do not receive treatment (pharmacological and psychological therapy)

Patient or population: adults with major depressive disorder who do not receive treatment (pharmacological and psychological therapy)

Intervention: physical exercise

Comparison: usual care, mind-body exercise, or no intervention

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with usual therapy, mind-body exercise, or no intervention	Risk with physical exercise				
Depressive symptoms assessed with: Questionnaires (HAM-D, BDI, BDI-II) follow-up: range 8 weeks to 16 weeks	The mean depressive symptoms ranged from 6.29 a 23.3 score	SMD 0.27 score fewer (0.58 fewer to 0.04 more)	-	814 (7 RCTs)	⊕○○○ Very low ^{a,b,c,d}	The physical exercise may reduce little to no effect on depressive symptoms, but the evidence is very uncertain
Adverse events assessed with: Common Terminology Criteria for adverse events	105 per 1.000	0 per 1.000 (0 to 0)	not estimable	812 (7 RCTs)	⊕⊕○○ Low ^{a,d,e}	The evidence suggests that physical exercise does not increase adverse events
Quality of life assessed with: Questionnaires (SF-36, WHQ-5)	The mean quality of life ranged from 42.8 a 63.5 score	SMD 1.14 score fewer (9.28 fewer to 7 more)	-	143 (2 RCTs)	⊕○○○ Very low ^{c,d,f,g}	The physical exercise may have little to no effect on quality of life, but the evidence is very uncertain
Mortality - not reported	-	-	-	-	-	

***The risk in the intervention group** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI). **CI:** confidence interval; **MD:** mean difference

GRADE Working Group grades of evidence.

High certainty: we are very confident that the true effect lies close to that of the estimate of the effect.

Moderate certainty: we are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

Low certainty: our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.

Very low certainty: we have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.