

# Exercise alleviates depression



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**To what extent does exercise alleviate depression?**

Depression is an important public health problem that is common amongst older adults, and is associated with a significant increased risk of mortality and morbidity. Despite the existence of effective treatments for depression, such as cognitive-behavioural therapy and antidepressant medication, many individuals still remain inadequately treated.

There is increasing evidence that people who are physically active are less likely to develop depression, and that exercise interventions are associated with significant benefits for patients with mild to moderate forms of depression as well as reducing anxiety (Nordic Journal of Psychiatry. 2008; 25). Several studies, such as Moses et al., 1989 and Sexton et al., 1989, proposed that in order to improve a person's psychological functioning and enhance their mood, aerobic exercises with low to moderate intensities are more useful than conventional anaerobic exercises with high intensities. These findings have led to the proposal that exercise may serve as an addition or even an alternative to traditional forms of therapy. While treatments in clinical psychology aim to alleviate emotional effects of stressors that have already occurred, exercise training provides a way to ameliorate the effects of stressors yet to arise. (Salmon, 2001). A number of studies in Japan, Germany, and the United States have revealed a direct association concerning the amount of exercise in a person's life and the incidence of depression (Farmer et al., 1988; McNeil, LeBlanc, & Joyner, 1991; Steiner & Marcopulos, 1991). However, although this awareness of exercise as a depression alleviator seems logical, the empirical evidence remains inconclusive, as many research investigations which have been

considered well-designed have come to the conclusion that exaggeration is often placed on the relations between being physically active and an improvement in well-being (McTeer & Curtis, 1990; Gauvin, 1989)

This review is a critique of the empirical evidence on whether exercise can be a beneficial way to help alleviate depressive symptoms. The appraisal will start off by discussing theories. It will also include the significant methodological limitations existing in studies, and provide suggestions for future research.

While exercise can help promote a number of things such as achieving a beneficial level of health and fitness (both physically and mentally), enhanced cardiovascular and respiratory functioning, and reduced risk of coronary artery disease ([http://www. faqs. org/nutrition/Erg-Foo/Exercise.html](http://www.faqs.org/nutrition/Erg-Foo/Exercise.html)), other factors associated with participating in physical activity, such as increased self-efficacy, may be responsible for alleviating the symptoms of depression. According to the theory of situation-specific self-confidence, four things can enhance self-efficacy: vicarious experiences, emotional arousal, verbal persuasion, and successful performances, successful performances being regarded as the most important factor. One psychological variable that has been recognized to develop with physical exercise and may possibly relate to alleviating depression is the self-efficacy factor. The theory of self-efficacy (Simons, Epstein, McGowan, Kupfer, & Robertson, 1995) maintains that physical activity improves a person's ability to do work. For that reason, an increase in work capacity results in a better sense of self-confidence and an increase in feeling of mastery over physical tasks, which in turn results in increased self-efficacy. Similarly, Harter's competence motivation theory is a <https://assignbuster.com/exercise-alleviates-depression/>

theory of achievement motivation based on individual's feelings of personal competency. According to this theory, when an individual successfully masters a task, competence motivation is increased. This encourages the person to master more tasks, and may enhance one's self-efficacy and, subsequently, their feeling state.

In a pilot study examining the potential mechanisms for exercise as a treatment for depression (Louise S. Foley et. al, 2008), the psychological, physiological, and cognitive changes accompanying exercise were explored. Depressed participants were assigned to either a 12-week stretching or aerobic exercise program at random. The primary outcome of this study was that stretching and exercise were both associated with a significant reduction in severity of depression, and an enhanced coping efficacy over the 12-week period. The self-efficacy theory suggests that being able to master a task is one of the strongest sources of self-efficacy (Bandura, 1997). Respectively, it may be that self-efficacy towards stretching or exercise increases as a participant is able to master various aspects of the program, resulting in spill-over effects into the individual's more general self-confidence in coping with depression. However, without a passive control condition in this study, it cannot be ruled out whether noted decreases in depression (in both conditions) were the result of a regression to the mean, or other threats to internal validity.

Another theory proposed to provide an explanation for how physical exercise may be considered effective when treating depressive disorders or in alleviating depressive symptoms is the social interaction theory projected by North, McCullagh, and Tran (1990). This social interaction theory puts

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forward the idea that when physical activity is accompanied with social interactions, it causes the persons pleasurable effects and results in positive mental health. It also maintains that when exercise is carried out with other people, the necessary stimulus for the antidepressant effects of physical activity are provided.

It seems to be that the prevalence rates of depression depressive symptoms amongst older females declines with progressing years (Henderson et al, 1998). However, women continue to appear to be significant risk factors in developing late-life depression (Green et al, 1992). In a randomized control study (Williams, P., & Lord, S. R., 2008) determining whether a group exercise program carried out over a 12 month period had beneficial effects on mood, 187 older women participated. After the 12-month trial period, when compared with the control group, exercisers displayed improvements in measures of well-being, as well as signs of reduced anxiety.

In another study involving women, randomized control was also used to examine the effect of physical exercise on depressive states. This study used adolescent females, forty-nine volunteers, of which suffered mild-to-moderate depressive symptoms, took part. The results of the study showed that after an 8-week training regime, depressive score demonstrated a significant reduction, suggesting that exercise may be effective in improving depressive state of such individuals. In this study a counterbalancing technique was applied in order to make sure that the participants in separate groups were drawn into an equal condition. This technique was used to help prevent possible errors that could possibly come about at any time of the randomised controlled trial. Therefore, this technique ensures that the

protocol used in this experiment could be considered empirically a validated treatment that prevailed reliable and confident results. However, the study sample only included young females (aged 18-20) who suffered non-clinical, mild-to-moderate levels of depression, in this case it is possible that the obtained results may not be transferable to other persons with age differences, different social and cultural contexts, and dissimilar severities of depression. (Effects of physical exercise on depression, neuroendocrine stress hormones and

physiological fitness in adolescent females with depressive symptoms.)

“ How effective are physical activity interventions for alleviating depressive symptoms in older people? A systematic review” published on October 1, 2009 in the journal Clinical Rehabilitation, Vol. 23. The objective of this study was to assess the effectiveness of physical exercise for the treatment of depressive symptoms in adults over 60 years old. This study included “ randomized controlled trials and quasi-experimental studies of physical exercise interventions for depression”. Eleven randomized controlled trials, with 641 participants altogether (80% being > 60 years), were incorporated in the review. The results were that 9 studies showed short-term positive effects of exercise on depression and depressive symptoms, however, medium- to long-term effects of intervention were not as clear. The conclusion reached was that aerobic exercise programmes obtain clinically significant results in the treatment of depressive symptoms in elderly depressed persons. Although exercise may not be suitable for all older individuals, it may enhance mood in this population. To increase validity of this study further research would be essential in order to determine the

medium to long-term effects of exercise on depression, and whether physical exercise for the older population is cost-effective. In a similar study carried out by Mather et al (2002), older persons suffering from depression were randomly allocated to an intervention: either physical exercise classes or health education talks. Their report showed that a higher proportion of the exercise group experienced a decrease in depressive symptoms after 10 weeks of participation. However, because the exercise group contained 36 female and only 7 male, it is probable that this preponderance may have caused a bias in the results. Another related study was carried out by Krause, Goldenhar, Liang, Jay, and Maeda (1993) involving Japanese elderly people, structural equation modelling was used to test causal models, and results showed that exercise habits were linked with low a low level of depression.

Critical: It is hard to define depression as different people have different views on what can be classified as depression and clinical depression. What some may think is depression others may disagree, and it is hard to identify whereabouts on a depression scale someone is. It is also hard to determine whether an individual can be clinically classed as depressed.

**Conclusion:**

The findings of many of these studies provide support to the assumption that regular exercise is successful in promoting a range of physiological and psychological conditions, and may also be beneficial in among individuals with depressive symptoms. There are great difficulties in establishing specific guidelines with respect to the duration and intensity of exercise because of the lack of methodological consistencies across reviewed studies.

Relying on existing literature, it appears safe to accept the positive influences that physical exercise programmes have on depression, the most powerful effects being among the clinically depressed population.

Indisputably, exercise provides a vehicle for many non-specific therapeutic processes, including psychological benefits of mobilization and psychological benefits of self-mastery and social integration. Future research should explore effects in panic anxiety and clinical depression.

However, use of such a self-report measure as the primary outcome of this study would have rendered the results highly susceptible to patient expectation bias.

### **Future directions**

Further trials that are large and methodologically robust are required. Future meta-analyses and systematic reviews could be carried out in order to examine the effect of exercise on individuals who suffer from depression. Also, in order to provide information on addition insight into the possible mechanisms by which exercise may assist in alleviating depression, trials comparing two different types of exercise could be methodically reviewed. A future update of current reviews, including results from ongoing trials, will increase the précision of estimates of effect size.