

The Optimal Way to Boost Your Mood Through Exercise

Analysis by [Dr. Joseph Mercola](#)

November 15, 2024

STORY AT-A-GLANCE

- › Exercise is a natural, effective strategy for managing depression and boosting mood. It releases hormones like endocannabinoids, dopamine and oxytocin, which contribute to improved mental health
- › Research states that to maximize the benefits of exercise for mental health, do it for at least 30 minutes at moderate intensity, and maintain consistency for three weeks. Include social elements, and vary your routines for better outcomes
- › Physical activity is beneficial for preventing and treating postpartum depression, with aerobic exercise showing significant efficacy when performed three to four times weekly at moderate intensity
- › Regular exercise helps combat insomnia, which is closely linked to depression. Consistent physical activity over time is key to maintaining sleep benefits
- › Moderate-intensity exercise is recommended over high-intensity workouts for overall health benefits, including mental well-being, as excessive vigorous exercise has diminishing returns

Most people are aware of the importance of keeping your body in top shape to ward off disease. However, many others are overlooking their mental health, which can have devastating effects on quality of life. According to the National Institute of Mental Health, around 57.8 million Americans are currently dealing with a form of mental illness.¹

Out of all mental illnesses, major depression is the most diagnosed. Based on collated data, an estimated 21 million Americans have had at least one major depressive episode² and typically, the first line of treatment is antidepressants. Usage is so widespread, it's become a multibillion-dollar industry. In 2023, the market for antidepressants was valued at \$6.02 billion, and is expected to grow to \$8.37 billion by 2033.³

I don't recommend you take antidepressants, as there are many safe, natural alternatives. One of the best ones is exercise, as it's free and can be started right away. In fact, I've been advocating this for a long time now as a primary strategy for managing depression.

The Science Behind the Mood-Boosting Benefits of Exercise

Physical activity has long been recommended to help boost your mood, and research has confirmed this benefit time and time again.^{4,5} In fact, Hippocrates, the ancient Greek physician regarded to be the father of modern medicine, recommended physical activity as an intervention for managing mental health.⁶ But what is the exact mechanism behind this? This question was investigated in a July 2024 report published in The New York Times.⁷

Before, scientists commonly believed that the mood boost people get from exercise was exclusively produced by endorphins, which are neurotransmitters produced in your brain linked to improved mood and even pain relief. Now, they've slowly come to discover that there are other hormones at play in boosting your mood when you exercise.^{8,9}

According to Julia Basso, Ph.D., an assistant professor at Virginia Tech, these hormones have distinct roles, but complement one another. So, what hormones are involved? The top one is endocannabinoids, which have a similar structure to THC (tetrahydrocannabinol), the active ingredient in cannabis.¹⁰ When they bind to the receptors in your brain, you get the mood boost associated with exercise.¹¹

Another neurotransmitter released during exercise is dopamine, which is part of your brain's reward network. This conditions your brain to seek that reward again in the future. According to Basso, dopamine is one of the reasons why people continue to exercise. Two other chemicals produced in your body include serotonin, which helps you feel focused and calm, and oxytocin, which builds social connection when you exercise with others.¹²

Four Strategies to Optimize Your Exercise Routine for a Mood Boost

Normally, exercise programs are structured around areas such as intensity, duration or activated muscle groups.¹³ But what about structuring exercise around boosting your mood? Thankfully, not much has to be adjusted to your routine. However, there are four key reminders to implement so you can get the biggest mood boost, according to The New York Times:¹⁴

- **Get your heart rate up for at least 30 minutes** — The first 20 to 30 minutes of exercise almost always feels like a slog, whether you're a long-time exerciser or just a newbie. That's because your body needs around 20 minutes of moderate-intensity exercise for the endocannabinoid system to take effect and impact your mood.

When you stay the course and keep on exercising despite the sluggish start, you'll enter a state called "persistence high," according to health psychologist Kelly McGonigal, Ph.D. The longer you can maintain exercise at a moderate intensity, the more your endocannabinoid system will work, giving you a higher boost in mood.

- **Give yourself at least three weeks** — Just as your muscles need time to get stronger, the same concept applies to your brain. It'll take a few weeks for your brain to develop a robust dopamine reward system when you exercise.
- **Make it social** — While exercising alone already provides tangible benefits to your mood, doing it with the company of friends or family can give you twice the oxytocin boost. Basso says that the influx of oxytocin is a key reason why a powerful social

connection is created when people exercise together. Essentially, the brain is being tricked into a dissolution of personal boundaries, which is more apparent when dancing.

- **Mix things up** – While research indicates that moderate and even bouts of vigorous exercise are effective at boosting your mood, almost any form of exercise will produce similar results, according to exercise physiologist and researcher Ben Singh, Ph.D.

These findings were documented in Singh's study,¹⁵ published in the British Journal of Sports Medicine. His team reviewed 97 studies with a total of 128,119 participants. Using various analytical methods, the researchers noted that any type of physical exercise will do wonders for your mental health:¹⁶

"All PA (physical activity) modes were beneficial, including aerobic, resistance, mixed-mode exercise and yoga. It is likely that the beneficial effects of PA on depression and anxiety are due to a combination of various psychological, neurophysiological and social mechanisms ...

Furthermore, our findings showed that moderate-intensity and high-intensity PA modes were more effective than lower intensities. PA improves depression through various neuromolecular mechanisms including increased expression of neurotrophic factors, increased availability of serotonin and norepinephrine, regulation of hypothalamic-pituitary-adrenal axis activity and reduced systemic inflammation."

The study also noted an interesting detail regarding the exercise duration and its benefits to mental health – longer sessions were less effective compared to shorter sessions. Some theories were put forward, such as shorter sessions were simply easier for participants to complete compared to longer sessions, which may be perceived as burdensome.¹⁷

At any rate, remember this information when structuring your exercise sessions. If you find yourself becoming more stressed out the longer you exercise, pull back

and do shorter bursts instead.

Exercise Also Helps Mothers with Postpartum Depression

Most mothers who just gave birth often feel a rush of postpartum "baby blues," a condition that usually last for two weeks. Symptoms usually include mood swings, crying spells, anxiety and trouble sleeping. However, there are times when these symptoms intensify and persist, and becomes postpartum depression.¹⁸

Postpartum depression can last for several months. Sometimes, it can go on for years. According to one study,¹⁹ a quarter of mothers who participated in the research still experienced major depressive episode three years after their child was born.

According to psychiatrist Dr. Lindsay Standeven, "Postpartum depression is the most common complication of pregnancy." Moreover, when left untreated, it becomes life-threatening. Standeven says that postpartum depression accounts for 20% of all maternal-related deaths.²⁰ This is concerning, as almost 50% of mothers who have this condition aren't diagnosed by a health professional.²¹

Fortunately, exercise is an effective tool to managing postpartum depression. In a November 2023 meta-analysis²² published in PLOS One, researchers reviewed 26 studies from 11 countries and regions with a total of 2,867 women who had recently given birth or were pregnant. Their goal was to find just how effective exercise is for managing postpartum depression.

Based on the findings, the benefit of exercise for improving mental health was again reaffirmed. Specifically, the researchers noted that exercise is effective enough to the point of preventing postpartum depression from happening.²³

"The efficacy of aerobic exercise in preventing and treating postpartum depression is significant compared to standard care, with a greater emphasis on prevention. The optimal prescribed exercise volume for intervention comprises a frequency of three to four exercise sessions per week, moderate intensity (35 to 45 minutes)."

Suffering from Insomnia? Try Exercise

The National Council on Aging notes that more than a third of Americans are getting less than seven hours of sleep. In addition, 30% of all adults have symptoms of insomnia.²⁴ If you're experiencing insomnia, your mental health will eventually be affected.

According to Johns Hopkins Medicine, you're 10 times more likely to develop depression compared to people who get quality sleep. Around 75% of people with depression also have trouble falling asleep, leading to a vicious cycle that will deteriorate your mood.²⁵

Again, research points out that exercise is one viable way to address insomnia (and the depression that comes with it), as evidenced in a study published in *BMJ Open*.²⁶ The research involved 4,339 participants and answered a questionnaire regarding their insomnia status and were followed for 10 years.

Throughout this period, 37% of participants didn't consistently exercise, 25% were regularly active, 20% became inactive and 18% started exercising upon being selected for the study.²⁷

From their findings, the researchers noted that those who consistently exercise get anywhere between six to nine hours of sleep and the group who became active at the start of the study were less likely to report experiencing insomnia during follow-ups. Moreover, they stressed the importance of consistency to maintain the benefits:

"Our results are in line with previous studies that have shown the beneficial effect of PA [physical activity] on symptoms of insomnia, but the current study additionally shows the importance of consistency in exercising over time, because the association was lost for initially active subjects who became inactive."²⁸

Medium-Intensity Exercise Is the Ideal Approach

While some of the published studies cited earlier have positive observations regarding higher-intensity exercise, I would caution against this approach. I believe that moderate-intensity exercise is better, and there's data to support this, too.

In [my interview with cardiologist Dr. James O'Keefe](#), he explains the advantages of doing medium-intensity exercise, which is loosely defined as exerting effort to the point you're slightly winded, but can still have a conversation. Based on his findings, more is better, and it cannot be overdone. In contrast, his research noted that too much vigorous exercise eventually backfires:

"They're not as bad off as sedentary people, but virtually every study you can find, they will lose some of those benefits for longevity, and certainly for things like atrial fibrillation.

If you go from sedentary to exercise moderately, you have less atrial fibrillation. But if you're doing full distance triathlons when you're over age 40 or 45, you start seeing a 500% to 800% increase in atrial fibrillation."

One reason why I don't recommend high-intensity exercise is because it elevates your cortisol levels, which will eventually wreck your health. Cortisol is highly catabolic, meaning it breaks down tissues. And when it's always elevated through constant high-intensity exercise, your body will eventually break down your muscles, bones and brain. It also happens to be the primary aging hormone and will increase your risk of premature death.

But what about strength training? The same concept applies — don't overdo it. O'Keefe's research noted that the sweet spot is around 40 to 60 minutes per week. Once you train 130 to 140 minutes per week, the longevity benefits provided by weightlifting essentially becomes the same as if being sedentary.

Granted, these data are focused on longevity, not depression relief, but I wouldn't recommend getting into a habit that will ameliorate one area while backfiring in another.

These findings also support Singh's findings that I cited earlier. Again, Singh mentions that medium-intensity exercise is better than low-intensity exercise. Moreover, exercising in smaller bursts is better compared to longer sessions. Keep this information in mind when you're exercising to boost your mental health.

Sources and References

- ¹ NIH, "Mental Illness"
- ² NIH, "Major Depression"
- ³ Precedence Research, "Antidepressant Drugs Market Size, Share, and Trends 2024 to 2033"
- ⁴ Cureus. 2023 Jan; 15(1): e33475, Abstract
- ⁵ Physical Activity and Health 5(1):146-153, August 2021, Abstract
- ⁶ J Med Ethics Hist Med. 2014; 7: 6, Abstract
- ^{7, 8, 11, 12, 14} The New York Times, July 30, 2024
- ⁹ Cleveland Clinic, "Endorphins"
- ¹⁰ Britannica, "Tetrahydrocannabinol"
- ¹³ ISSA, March 4, 2022
- ¹⁵ Br J Sports Med. 2023 Sep; 57(18): 1203–1209, Abstract
- ^{16, 17} Br J Sports Med. 2023 Sep; 57(18): 1203–1209, Discussion
- ¹⁸ Mayo Clinic, "Postpartum Depression"
- ¹⁹ Pediatrics. 2020 Nov; 146(5): e20200857, Abstract
- ²⁰ Johns Hopkins Medicine, "Baby Blues and Postpartum Depression: Mood Disorders and Pregnancy"
- ²¹ PostpartumDepress.org, "Postpartum Depression Statistics"
- ^{22, 23} PLoS One. 2023; 18(11): e0287650, Abstract
- ²⁴ NCOA, "Sleep Statistics and Facts"
- ²⁵ Johns Hopkins Medicine, "Depression and Sleep: Understanding the Connection"
- ^{26, 27} BMJ Open. 2024; 14(3): e067197, Abstract
- ²⁸ BMJ Open. 2024; 14(3): e067197, Discussion