

Train Yourself Happy



Exercise can play a key role in alleviating anxiety and depression.

BY SHIRLEY ARCHER, JD, MA

"I've been active much of my life but have also struggled with depression from a young age," says Kris Cameron, ACE-certified personal trainer and owner of ReNu Your Life—Mobile Personal Training & Wellness in Iowa City, Iowa. "I come from a family full of depression, abuse, even suicide. About 18 years ago I was put on a very low dose of Zoloft (25 milligrams). It helped, but I also continued to be active, to work out—and I started my training career.

"Three years ago I went through a job loss, then an injury that forced time off from my strength and running workouts. I tried to ease back into my workouts but would wake up in tremendous pain and sometimes [I couldn't train clients]. I became frustrated and stopped working out altogether. I felt like a fraud as a personal trainer. My marriage hit a bumpy spot. I started experiencing anxiety attacks.

"My physician increased my Zoloft to 50 mg [and then] to 100 mg. That helped some, but I was still having anxiety attacks. Sometimes my heart rate would jump to 120 beats per minute when I was doing nothing. I turned to food for stress management.

"One day, when listening to an audiobook about exercise and the brain, I realized this could have something to do with the fact that I wasn't working out on a regular basis. I started planning time for myself, scheduling in my workouts. I made an appointment with myself every night before bed to do 10–20 minutes of yoga/relaxation/meditation.

"My Zoloft dosage is down to 50 mg per day. I feel so much better. I share this personal experience with clients. We look at exercise for the physical benefits—how it makes our bodies look, how our clothes fit—but it's so much more important to exercise for the brain benefits." >>



Like Cameron, to promote total well-being we must remind our clients of exercise's power to improve both physical *and* mental health. Scientific understanding of mental health disorders is increasing—and exercise is emerging as a potent healing tool. Unlike diseases that manifest physically, mental health disorders afflict the brain and can impact mood, perception, personality and cognitive abilities.

Historically, more stigma has been associated with mental ailments than with physical illnesses. Fortunately, as we gain understanding, compassion and transparency, our efforts to address mental health issues are improving. With mounting scientific evidence that exercise and physical activity can alleviate or help manage symptoms of the two most common disorders—*anxiety and depression*—fitness and wellness professionals have an important role to play.

What Are Anxiety and Depression?

ANXIETY

"In high school I became extremely depressed due to my inability to thrive in social situations, in particular over a girl that I had deep feelings for, and who didn't reciprocate those feelings," recounts Adam Fisher, ACE-certified personal trainer and assistant manager at Snap Fitness in Ferndale, Michigan.

"I was unable to sleep and was constantly restless while awake; my grades and social life suffered further. My anxiety fed into itself until I realized that I was extremely depressed one day, [and] I seriously contemplated suicide. After this, I sought help from my parents; they sent me to a therapist who diagnosed me with generalized anxiety disorder.

"Over the course of the following 3 years, I essentially exercised my way out of anxiety and depression. I began to look and feel better, my sleep improved vastly, and I soon learned much better social skills. Exercise didn't just provide me a psychological boost—it provided a framework for reinterpreting my life. The careful, methodical nature of planning my day around working out was exactly the structure I needed to take control of myself and my behavior."

Anxiety issues are the most common types of mental illness in Western countries. Generalized anxiety disorder affects 5%–16% of adults (Clow & Edmunds 2014). Anxiety can be normal; however, when it is excessive to the point where it negatively affects a person's daily life, it becomes a disorder.

Signs and symptoms of an anxiety disorder include the following:

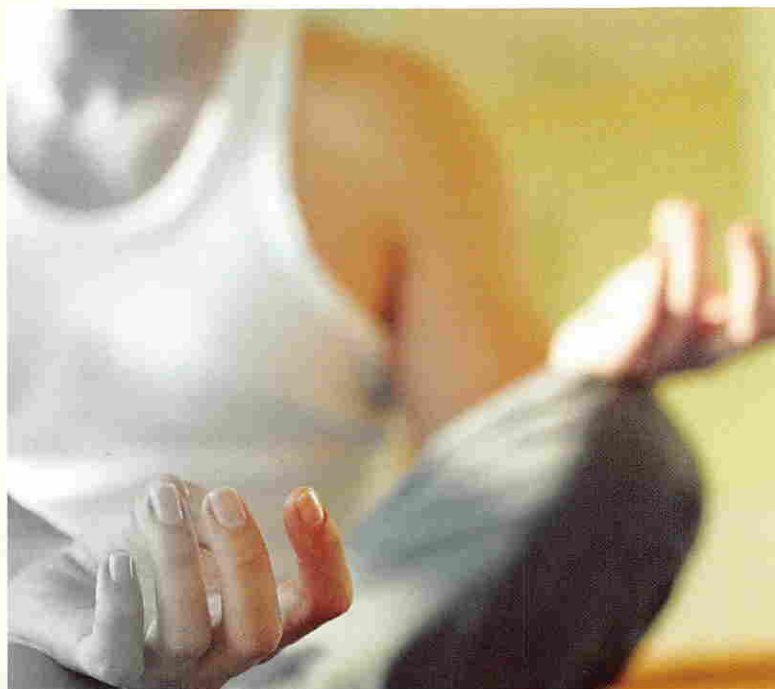
- feelings of worry
- tension
- jumpiness
- breathlessness
- dizziness
- sweating
- pounding heart
- numbness
- tingling sensations

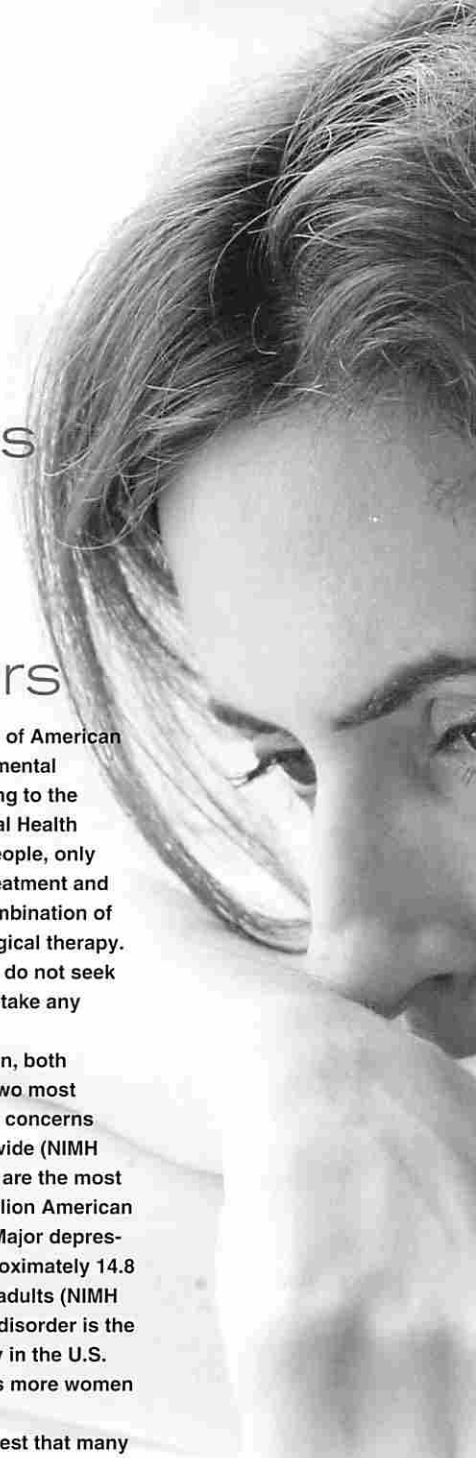
Anxiety disorders typically last at least 6 months and can get worse if untreated. Anxiety illnesses include obsessive-compulsive disorder, panic disorder, posttraumatic stress disorder and social phobia. "It's not uncommon for someone with an anxiety disorder to also suffer from depression, or vice versa. Nearly one-half of those diagnosed with depression are also diagnosed with an anxiety disorder," says Michael R. Mantell, PhD, senior consultant for behavioral sciences for the American Council on Exercise and a psychologist for nearly 40 years in San Diego.

DEPRESSION

Kathy Brant, an ACE-certified group fitness instructor who teaches at HitIt!* Fitness in Roselle, Illinois, recalls her personal experience:

"Seven years ago I was diagnosed with depression, anxiety and posttraumatic stress disorder after my husband committed suicide, leaving me to raise a 4-month-old baby, a 2-year-old son and a 5-year-old daughter on my own. At this time, I had no home to live in because we had lost our home in a construction accident that my husband blamed himself for. I had also just learned that my mother had breast cancer. We were living with my mother and had to move out to accommodate the rest that she needed. I was homeless, on maternity leave, and suffering from mental anguish that was unfathomable.





“At the time of my husband’s death, I was a certified group fitness instructor specializing in yoga. When my anxiety and PTSD became overwhelming, I stopped teaching. I could barely read, speak or function, so it was no wonder that I could no longer lead a class, which was my passion. My grief and other mental health issues had manifested into physical symptoms, such as a terrible burning in the back of my neck. I even had suicidal thoughts. To ease my stress levels, my psychiatrist recommended a plan that included exercise.

“It was a harrowing journey, but I’m happy to say that I have come out on the other side. I felt strongly that if these events could change my brain chemistry, I could change it back. Exercise played a major role in my recovery.”

As described by Brant, major depressive disorder includes symptoms that interfere with a person’s ability to work, sleep, study, eat, and enjoy once-pleasurable activities. While everyone experiences the blues, not everyone is incapacitated. Major depression is disabling and prevents a person from functioning normally. Some people may experience only a single lifetime episode, but more often a person experiences multiple episodes.

Varieties of depression include psychotic depression, postpartum depression and even seasonal affective disorder, sometimes referred to as SAD. Major depressive disorder affects about 6.7% of U.S. adults (NIMH 2014a). About 11% of youth in America have a depressive disorder by age 18 (NIMH 2014b).

Signs and symptoms of depression include the following:

- persistent sad mood or “empty” feelings
- feelings of hopelessness or pessimism
- loss of interest in most things
- feelings of guilt
- fatigue and low energy
- concentration problems, forgetfulness, inability to make decisions
- sleep problems—insomnia, early-morning wakefulness or excessive sleeping
- suicidal thoughts or suicide attempts
- overeating or loss of appetite
- aches or pains, headaches, cramps or digestive problems that do not ease even with treatment

Science Says: Exercise Benefits Mood and Mental Health

“There’s a great deal of research on how exercise relieves anxiety and depression, dating as far back as the early 1980s,” says Mantell. In studies, exercise, as a subcategory of physical activity, is defined as planned, structured and repetitive bodily movements done to improve or maintain one or more components of physical fitness (Howley 2001). >>

Statistics on Mental Health Disorders

Approximately one-fourth of American adults have one or more mental health disorders, according to the National Institute of Mental Health (NIMH 2014a). Of those people, only one-third are receiving treatment and most are prescribed a combination of medication and psychological therapy. Significantly more people do not seek treatment or prefer not to take any drugs.

Anxiety and depression, both mood disorders, are the two most widespread mental health concerns and are increasing worldwide (NIMH 2014a). Anxiety disorders are the most prevalent, affecting 40 million American adults, or 18% of adults. Major depressive disorder affects approximately 14.8 million adults, or 6.7% of adults (NIMH 2014a). Major depressive disorder is the leading cause of disability in the U.S. for ages 15–44 and affects more women than men (NIMH 2014a).

“These statistics suggest that many clients that fitness pros train, either by referral from physicians or mental health professionals, or randomly by self-referral, will be under the burden of anxiety and depression,” says Michael R. Mantell, PhD, senior consultant for behavioral sciences for the American Council on Exercise and a psychologist for nearly 40 years in San Diego.



Experts offer multiple reasons why exercise positively impacts mental health; most agree it's likely a combination of indirect and direct factors. Better circulation and reduced inflammation, boosts in psychological outlook, exposure to positive environmental factors, and perceptual and behavioral shifts are all "side effects" of exercise that enhance mental health.

According to the science, exercise may improve mental health in the following ways:

- **By enhancing physiological health.** "Physical activity benefits overall brain health by reducing peripheral risk factors for poor mental health—such as inflammation, diabetes, hypertension and cardiovascular disease—and by increasing blood flow and associated delivery of nutrients and energy," says Angela Clow, PhD, professor in the department of psychology at the University of Westminster, London, and coeditor of *Physical Activity and Mental Health*. Depression and other mental ailments are associated with low physical activity; being more physically active reduces mental illness risks (Cooney et al. 2013).
- **By raising tolerance for emotional stress.** Since exercise is stressful, regular exercise increases a person's resilience toward other forms of physical and emotional stress. Having more physical and emotional strength—from consistent fitness training—seems to help people adapt better when tough situations occur (Otto & Smits 2011).
- **By increasing familiarity with physical stress.** For some anxiety sufferers, an elevated heart rate, profuse sweating, chills and other stress symptoms that can occur during an anxiety attack are, by themselves, upsetting. By exercising regularly, people can learn to control their experience of physiological stress—like an elevated heart rate or sweating—and these symptoms can become less frightening.
- **By boosting self-efficacy.** People who master a new skill improve self-efficacy, which subsequently leads to higher

self-esteem. Learning how to exercise is an example of a skill that increases self-efficacy. High self-efficacy predicts well-being, while low self-esteem is associated with mental illness (Clow & Edmunds 2014).

- **By fostering social contact.** Social interactions can improve mood. Exercise frequently occurs together with others or with friend and family encouragement. This support boosts mood (Cooney et al. 2013).
- **By increasing exposure to the outdoors, sunlight and green environments.** Engaging in "green exercise" (outdoors) or spending time enjoying nature helps to lift mood. Other studies show that exposure to sunlight, even on darker days, can raise neurotransmitter levels and elevate mood (Young 2007).
- **By diverting negative thinking.** People with depression or anxiety often get stuck in negative thought cycles. Exercise, especially when mindful, may be a diversion from self-rumination, focusing thoughts away from negative inner concerns toward engagement with the present and with pleasurable experiences (Otto & Smits 2011).
- **By encouraging engagement instead of avoidance.** Focusing on exercise pursuits provides value. As Fisher noted, creating a structured program directs focus on the value of activity, rather than withdrawal, and teaches persistence. This lesson in engagement, in spite of escape urges, can help people with anxiety to overcome avoidance in other life areas.

The Neurochemistry of Exercise

Some of the most interesting research on exercise involves neurobiology—how physical activity directly affects brain chemistry and how it may even alter the brain's structure and function.

Physical activity can cause changes in the neurochemicals that affect mood. These chemicals include **serotonin, dopamine** and **gamma-aminobutyric acid, or GABA**. Antidepressant and

One Trainer's Account of How Exercise Helped Her Heal From Depression

Cassandra Shoneck, NASM-certified personal trainer and CrossFit® level-one trainer, lives and works in Rochester Hills, Minnesota.

"When I was in middle school and high school, I was clinically depressed. I had seen the negative effects of prescribed drug use and didn't want to go that route. The depression felt like this lurking dark creature on my back through those years. Some days would be good. Other days I honestly thought about suicide, running away, cutting myself to 'let out the pain.' It was a very dark and lonely time.

"After high school, my depression would come and go. I got into a bad relationship, and that's when it hit a peak. I would cry all the time—sometimes for no reason. I was overwhelmed and had a hard time seeing any positives. I started noticing that I was not only depressed but also extremely anxious. Going to events that I used to love—concerts, the mall, even a simple dinner at a relative's house—would trigger cold sweats, feelings of nausea, panic attacks and pure dread. It got so eventually I didn't want to leave the house much except for work and grocery shopping.

"Fast forward . . . I was in an excellent relationship, but the anxiety was something that was increasingly holding me back in life. After a couple of 'tries and fails,' I revamped everything. I started exercising, with a routine that was literally no more than 15 minutes on our elliptical, and maybe a couple of sit-ups. But it was something—and I was determined. I started getting better and better, extending the length of my workouts and looking up

new exercises to incorporate. Changing my eating habits was one of the hardest things I've ever done, but I stuck with it. I started feeling different. And then I started looking different. And I was absolutely hooked.

"During my journey, I gradually noticed my attitude change. After workouts, I felt so happy! And accomplished. I actually had more energy when I did my workouts than on the days I didn't. So I started doing them almost every day. I noticed that I no longer dreaded doing things. I wanted to go places. I wanted to talk to people. I didn't dread every little thing anymore, and I was increasingly happy and confident. It took me about 6 months to lose 30 pounds.

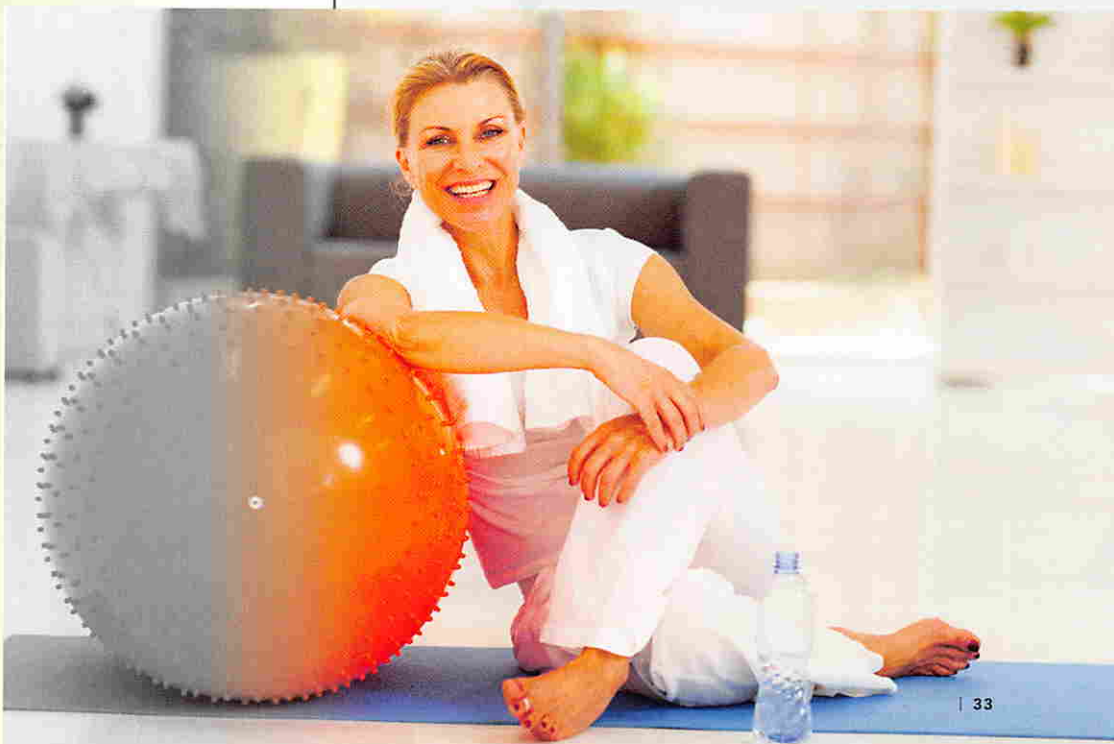
"During that time, we joined a gym and I realized there were a whole lot of like-minded people out there who had similar stories and similar goals to mine."

antianxiety medications target these neurochemicals to normalize levels. Research shows that aerobic exercise can also increase their levels (Young 2007). Simon Young, PhD, former editor in chief of the *Journal of Psychiatry & Neuroscience*, notes, "The effect of exercise on serotonin suggests that the exercise itself, not the rewards that stem from exercise, may be important."

Since exercise affects the same neurochemicals as prescription medications do, multiple studies have compared the effects of exercise with those of medications on people with clinical depression. While more research is needed, the most recent comprehensive literature review found that exercise is as effective as medications or therapy, but not more so (Cooney et al. 2013).

However, Sarah Edmunds, PhD, senior lecturer in exercise physiology at the University of Chichester, in England, and coeditor of *Physical Activity and Mental Health*, says, "An analysis of the findings from only the most methodologically robust studies showed a weaker effect that was not statistically significant. So, more high-quality trials are required to clarify the effectiveness of exercise as a treatment for depression."

While exercise may not replace antidepressant medication, there is significant and growing evidence that it can be a valuable adjunctive therapy, particularly for people with severe symptoms. In another study, researchers from the University of Texas Southwestern and The Cooper Institute, in Dallas, found that exercise can serve as a supplemental treatment for 50% of patients with depression who have not been cured by a single antidepressant medication (Trivedi et al. 2011). The amount and





type of exercise need to be customized to the individual. “Many people who start on an antidepressant medication feel better after they begin treatment, but they still don’t feel completely well or as good as they did before they became depressed,” says lead study author, Madhukar Trivedi, MD, professor of psychiatry at UT Southwestern Medical Center in Dallas.

Data analysis showed that women with a family history of mental illness benefited more from moderate exercise, while intense exercise helped those with no family history of depression. In men, regardless of family history, symptoms improved more with a higher volume of exercise. “This is an important result in that we found that the type of exercise that is needed depends on the specific characteristics of the patient, illustrating that treatments may need to be tailored to the individual. It also points to a new direction in trying to determine factors that tell us which treatment may be the most effective,” Trivedi concludes.

IMPACT ON THE BRAIN’S STRUCTURE AND FUNCTION

Scientists are teasing out what happens in the brain as a result of physical activity and are identifying how exercise promotes mental well-being by buffering the negative effects of psychological stress on brain function. Physical activity affects the **hippocampus**, a brain region that regulates primal emotions—fear, anger and pleasure—and supports learning and memory formation. The hippocampus is one of only two brain areas in which **neurogenesis**, or new neural cell formation, occurs in adulthood. Physical activity promotes neural growth, protects the brain from damage and enhances brain function. It does this via two mechanisms: by increasing levels of nerve growth factors (particularly, brain-derived neurotrophic factor, or BDNF); and by stimulating new blood vessel development, which supports the new neural cells (Clow & Edmunds 2014; Otto & Smits 2011).

The hippocampus plays an important role in the **hypothalamic-pituitary-adrenal (HPA) axis**, which helps to regulate functions like temperature, digestion, the immune system, mood, sexuality and energy. The HPA axis controls reactions to stress, trauma and injury. The body’s survival mechanism responds to high stress by stimulating our adrenal glands and stress hormones via the HPA axis. The hippocampus calms this axis, whereas the **amygdala** (a brain structure linked to emotions and aggression) stimulates it.

Chronic stress dulls the HPA axis system’s sensitivity, resulting in overproduction of stress hormones that decrease BDNF levels, inhibit neurogenesis and cause degeneration and atrophy in the hippocampus, interfering with its ability to perform its part in restoring calm. Physical activity and exercise can reverse the conditions that chronic stress exacerbates. Such activity can increase BDNF levels and restore healthy functioning to the hippocampus, which can then play its part in inhibiting the HPA axis response. The result: feelings of well-being and mental health.



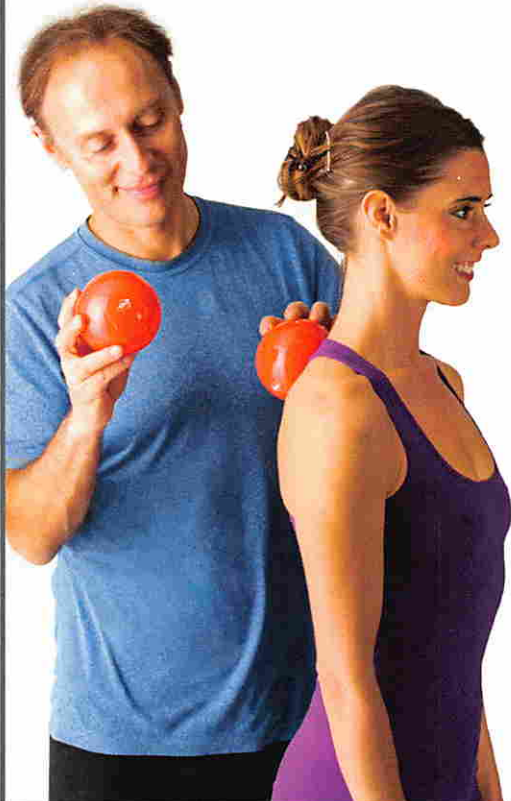
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or mail the quiz on page 81.

Edmunds adds, "Individual preferences about physical activity type (e.g., swimming, dancing, football) can and should be accommodated into exercise programs. Personal preference of participants with regard to physical activity location and whether to be active in groups or individually should also be

considered. I would stay away from being prescriptive about a [specific] exercise dose and type."

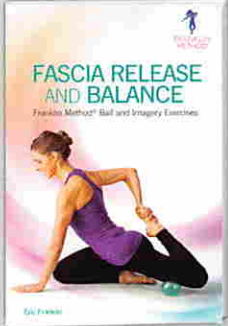
Contributions from IDEA members support this recommendation. People have noted that running, walking, yoga, Pilates, weight training and other activities have all played a role in their recovery.




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Is There a Downside?

While consistent, moderate exercise improves physical and mental health, excessive exercise can be harmful. Experts suggest that this is an addiction that may have an obsessive-compulsive dimension and a genetic component related to a preference for rewarding behaviors. People with eating disorders and body image dysmorphia share many common symptoms with those addicted to exercise. People with a predisposition toward certain anxiety disorders may develop exercise addiction.

Signs and symptoms include the following:

- Exercise becomes the most important activity in life.
- Exercise is used “like a drug” to alter mood, at the expense of physical health and of meeting other obligations.
- More and more exercise is required.
- Withdrawal is experienced if exercise stops.
- Exercise creates conflict in other areas of life.
- Even after excessive behavior is controlled, risk of relapse is high.

Source: Terry, Szabo & Griffiths 2004.

Jennifer Merritt, 25, a fitness enthusiast who is pursuing her professional certification in Anderson, South Carolina, shared her experience:

“I had always been active during middle and high school, but when I started college, . . . I got bogged down with class-work and family and relationship problems. I turned to running as my ‘getaway.’ No matter what my day brought, I turned to exercise as my drug.

“I got addicted to running and started running way too much and lost a lot of muscle mass and weight. I would run about 1½–2 hours a day, because I relied on the endorphins to make me feel good. [Running took] me away from all my stress or problems.

“I reversed it by realizing it was hurting me, instead of helping me, because I was losing so much muscle mass and weight. I lowered the exercise time and still felt the endorphins and realized time really doesn’t matter. Now, I work out about 45 minutes to 1 hour a day and get the same feeling. A warning sign to look for is if you keep wanting to add more and more time to exercise because you feel that it’s ‘not enough.’ Now, I say it’s a healthy habit.”

Translating Science Into Practice

WHAT “DOSE” OF EXERCISE IS SUFFICIENT?

Studies suggest that a “dose” of exercise consistent with public health recommendations is sufficient to stimulate mental health benefits. Dose refers to intensity, duration and frequency of exercise.

“Aerobic physical activity at a dose roughly equivalent to the public health guidelines was found to be significantly more effective than a low dose [below public health guidelines] and a control condition in a 2005 study by Dunn and colleagues,” reports Edmunds. Mantell says, “Resistance training holds a similar impact at public health recommendations, though most commonly a wide variety of aerobic activities, including NEAT, are emphasized.” NEAT stands for “non-exercise activity thermogenesis” and involves engaging in standing or moving activities that do not include specific sports—like walking, gardening or dancing—for up to 2.5 hours per day (Levine et al. 2006).

Current public health guidelines recommend 30 minutes of moderate-intensity physical activity on most days of the week. In the U.S., this is identified as at least 150 minutes of moderate-intensity exercise per week or 75 minutes of vigorous-intensity exercise per week.

WHAT TYPE OF EXERCISE IS BEST?

In exercise program design for mental health benefits, the principle is *not* “one size fits all.” Edmunds says, “Feeling a sense of choice and control over the physical activity that you do is important for mental health benefits.” In a study conducted at the University of Nottingham, in Nottingham, England, findings showed that allowing women with depression to exercise at individually selected preferred intensities resulted in greater reductions in depression, compared with prescribing a specific intensity (Callaghan et al. 2011). >>

HOW QUICKLY ARE BENEFITS FELT?

Another value of exercise is that while it may take 12–16 weeks to experience overall symptom reduction in mood disorders, people will typically feel better and enjoy a sense of accomplishment immediately, after just one session.

Jasper Smits, PhD, codirector of the Anxiety Research and Treatment Program at Southern Methodist University and coauthor of *Exercise for Mood and Anxiety: Proven Strategies for Overcoming Depression and Enhancing Well-Being* (Oxford University Press 2011), said in an interview with the Canadian Mental Health Association, “Helping people see an immediate payoff [from exercise] is very important. If you’re not sure whether exercise is going to work for you, the test is a very simple one.” Smits has people rate their mood immediately before exercise on a scale of 1–100 and then rate their mood again immediately following exercise. In this way, people realize that exercise can help them to feel better immediately.

Mantell says, “Each time you help a client finish a workout, the client benefits with increased self-confidence, a key factor in diminishing depression.” Fitness professionals can make a point of encouraging clients to celebrate their achievement after every training session and to acknowledge the reward of pursuing goals.

Conclusion

Mental disorders are widespread. Numerous testimonials reveal that they can create personal turmoil, even destroy life; or, if we commit to a positive path, they can bring out our very best.

Exercise has power to boost mental health. We, as fitness professionals, can support others to use this power for optimal health of body and mind.

“The natural healing force within each one of us is the greatest force in getting well,” said the ancient Greek physician, Hippocrates. May we use the power of fitness to inspire those around us to achieve happiness, well-being, fitness and health. ■

Shirley Archer, JD, MA, is IDEA's 2008 Fitness Instructor of the Year. She has successfully managed her depression and anxiety for over 20 years and is an award-winning author/co-author of 15 books, including Pilates Fusion: Well-Being for Body, Mind and Spirit. Contact her at www.shirleyarcher.com.

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References can be found on our website, www.ideafit.com.

The digital version of May *IDEA Fitness Journal* includes lots more on this topic. For the author's uplifting and candid account of her own journey through depression; a sidebar on exercise and postnatal depression, and another on partnering professionally with psychologists; resources for further reading, including a screening tool for depression; and a full list of references, please visit www.ideafit.com/fitness-library/train-yourself-happy.

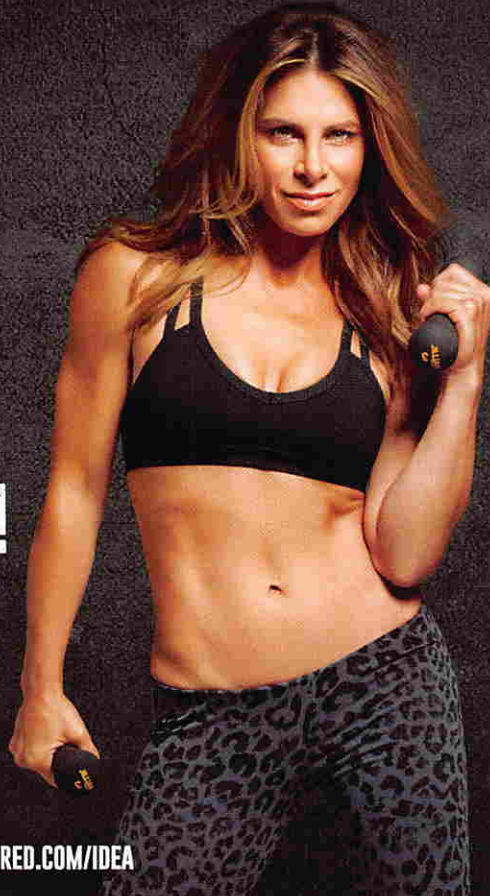


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