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## Combating Depression with Exercise

**D**epression is a common medical problem in the United States. Approximately 10% of adults are affected by depression at any given time, with 20% of adults experiencing an episode of major depression in their lifetime. Two to three times this number of adults exhibit “depressive symptoms” but do not meet the diagnostic criteria in the Diagnostic and Statistics Manual of Mental Disorders (DSM IV-R) or International Classification of Mental and Behavior Disorders (ICD-10) for clinical depression. Depression often goes undiagnosed and can complicate other medical conditions like diabetes, work injuries, and musculoskeletal problems. Some people mask their depression with drugs and alcohol, making a diagnosis that much more difficult. Worldwide, depression is the fourth leading cause of disability and costs billions of dollars in time lost and medical expenses.

There are many different medications used to treat depression. The class of antidepressant most commonly used is the selective serotonin reuptake inhibitors (SSRIs). The side effects of these medications differ from medicine to medicine. The most common side effects of the antidepressants are listed in Table 1. Less commonly used medications include tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs). The SSRIs and TCAs are equally effective in randomized clinical trials, with little difference in patient tolerance. However, the TCAs can be fatal if taken as a suicide gesture or attempt. Therefore, most physicians initiate treatment with SSRIs.

Current studies in the nonpharmacologic treatment of depression are limited. Modalities studied that are likely to be beneficial include St. John’s Wort (an herbal

remedy), nondirective counseling, and problem-solving skills training. These few studies showed improvement in short-term depression scores but little improvement in the long



term. It is important to note that randomized, controlled trials in the nonpharmacologic treatment of depression are difficult to conduct. The inclusion criteria for withholding pharmacologic treatment would result in only mildly depressed people

**Table 1. Side Effects of Antidepressant Medications**

- Selective Serotonin Reuptake Inhibitors
  - Nausea
  - Diarrhea or constipation
  - Insomnia or tiredness
  - Anxiety or nervousness
  - Decreased libido and abnormal ejaculation
  - Dry mouth
- Tricyclic Antidepressants
  - Cardiac arrhythmia
  - Sedation
  - Dry mouth
  - Constipation
  - Nausea
  - Increased or decreased appetite
  - Weight gain
- Monoamine Oxidase Inhibitors
  - Increased blood pressure
  - Dizziness
  - Headache
  - Sleep disturbance
  - Weight gain
  - Sexual dysfunction
  - Gastrointestinal disturbances
- Norepinephrine and Serotonin Reuptake Inhibitors
  - Sedation
  - Increase blood pressure
  - Nervousness
  - Insomnia
  - Decreased appetite
  - Constipation or diarrhea
  - Abnormal ejaculation

being included in the study group. Although there may be many different means of treating depression, the reality is that depression can be deadly. Withholding antidepressants for a clinical trial might result in subjects making successful suicide attempts. Therefore, only mildly depressed subjects can be included in any study, and their responsiveness to a treatment might not be indicative of the response of more clinically depressed clients.

However, one nonpharmacologic treatment often recommended for depression is exercise. Exercise has many benefits, with very few contraindications. It has the benefit of being relatively inexpensive and widely available. Exercise is known to boost energy, stimulate the immune system, and enhance metabolism. People who are depressed feel poorly about themselves and are stuck in a state of low self esteem. Exercising can improve their sense of self. The Melpomene Institute surveyed more than 600 of their members about how exercise affects them. Of the women, 40% listed subjective mental benefits, with 20% listing a positive self image (1). The mental benefits cited include stress reduction, relaxation, better attitude, improved outlook, and mental well-being. Several clinical studies have documented improved mood and sense of self after bouts of moderate exercise. Some researchers have proposed that the improved self image after exercising is caused by endogenous opioid chemicals in the brain. This is the “runner’s high.” The release of these chemicals in the brain during moderate to intense exercise can explain the sense of euphoria and the ability to exercise through pain, but they cannot explain the long-term mental benefits of exercise.

The small, controlled studies that compared exercise to other forms of

**Table 2. Vegetative Symptoms of Depression**

- Depressed mood almost all day, every day
- Suicide ideations or attempts or thoughts of death
- Insomnia, hypersomnia, or early awakening
- Significant weight loss or gain, without trying to change weight
- Low energy or fatigue
- Poor cognitive function, including ability to remember and concentrate
- Decreased appetite (sometimes increased)
- Diminished interest or pleasure in activities usually found pleasurable
- Feelings of worthlessness and guilt
- Loss of sexual libido

therapy for depression have shown a benefit with exercise, although it was not statistically better than other forms of treatment (2, 3). Follow-up studies have shown the benefits of exercise to be longer lasting than other treatments, and anecdotally, exercise alone is better than exercise with SSRIs. All people who are depressed can benefit from a regular program of exercise, and the effect is positive whether the person exercises alone, in a group, in a pool, at a gym, or running on a track (4).

Whatever the form of exercise, it will make all people stronger. As their strength improves, so will their ability to wake up and face another day. They will feel better able to manage life stressors. Exercising can help work through pent up anger and frustration and release negative energy. In the Melpomene survey, many women stated that they found exercise to be the best way to relieve the day’s stress and tension. They felt stronger and more energized. Exercise also

gives one a sense of mastery and self efficacy. It affects the self so profoundly that exercising can help people to feel that they are taking control of their life.

People who exercise regularly sleep and eat better. Regular exercise improves digestive function. Once the initial soreness from a new activity resolves, exercise generally makes people feel more energized. It improves psychomotor function. All of these benefits will help to counter the vegetative symptoms of depression (Table 2). Despite what common sense dictates, no randomized, controlled studies have shown any statistically significant improvement in depressed people who exercise versus a more sedentary group. The few studies that have been completed were limited in number and study design. Again, it is difficult to design a study that can identify the exact benefits of exercise in the treatment of depression. Enough studies support the use of exercise as an adjunctive therapy in the treatment of depression, if not a first-line agent for mild to moderate depression in people without suicidal thoughts. Exercise prescription might be a first-line agent for clients with multiple medical problems who take many medications already.

As in all forms of exercise prescription, the one to which the

client will adhere is always “the best.” There are no differences in efficacy of the different forms of exercise available. For a client with very low self esteem, a one-on-one program with a trainer may be most beneficial. Some clients will respond favorably within a group setting. It is always important to ask questions about a client’s past exercise experience. While depressed, he or she may not be able to decide on an appropriate or pleasurable form of activity. If the individual has enjoyed something in the past, that activity can be incorporated into the current prescription plan. No one plan will work for every client, so it is important to have flexible and adaptable exercise plans available. The goal is a treatment regimen to increase self worth and energy, so adherence is very important.



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### References

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### Also Recommended

Geddes, J., R. Butler, and S. Hatcher. Depressive disorders. Available at [www.clinicalevidence.com](http://www.clinicalevidence.com).