

KNOWING DEPRESSION AND PHARMACOLOGICAL, NON-PHARMACOLOGICAL APPROACHES FOR ITS TREATMENT

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Summary

Since 1990, significant efforts have been made towards developing interventions to prevent depression. Depression is a serious medical illness that involves brain. Persons of any age-children or adults may develop depression symptoms. Symptoms such as intense sadness, loss of interest or pleasure in normal activities, sleep disturbances or oversleeping, change in appetite and decreased energy level; feeling of helplessness and thoughts of suicide are sequels to stress induced depression. The primary clinical manifestations of major depression are significant depression of mood and impairment of function. Mood and anxiety disorders are the most common mental illnesses. Clinical depression must be distinguished from normal grief, sadness, disappointment and the dysphoria or demoralization often associated with medical illness. Physical changes also occur, particularly in severe, vital, or "melancholic" depression. These include insomnia or hypersomnia; altered eating patterns, with anorexia and weight loss or sometimes overeating; decreased energy and libido; and disruption of the normal circadian and ultradian rhythms of activity, body temperature and many endocrine functions. Depressed patients usually respond to antidepressant drugs, or, in severe or treatment-resistant cases, to electroconvulsive therapy (ECT). This review focuses on knowledge of depression, pharmacological and non-pharmacological measures for its treatment and future directions for the field of depression prevention.

Keywords: Depression; Pharmacological; Disorder; Major depressive disorder.

Introduction

Depression is a serious medical illness that involves brain. Persons of any age-children or adults may develop depression symptoms. Even minor stress events can strip up depression symptoms depending on the personality type. Symptoms such as intense sadness, loss of interest or pleasure in normal activities, sleep disturbances or oversleeping, change in appetite and decreased energy level; feeling of helplessness and thoughts of suicide are sequels to stress induced depression. The primary clinical manifestations of major depression are significant depression of mood and impairment of function. Some features of depressive disorders overlap those of the anxiety disorders, including *panic-agoraphobia* syndrome, severe *phobias*, *generalized anxiety disorder*, *social anxiety disorder*, *posttraumatic stress disorder* and *obsessive-compulsive disorder*. Extremes of mood also may be associated with psychosis, as manifested by disordered or delusional thinking and perceptions that often are congruent with the predominant mood¹. Conversely, secondary changes in mood may be associated with psychotic disorders. This overlap of disorders can lead to errors in diagnosis and suboptimal treatment. Mood and anxiety disorders are the most common mental illnesses, each affecting up to 10% of the general population at some time in their lives. Clinical depression must be distinguished from normal grief, sadness, disappointment and the dysphoria or demoralization often associated with medical illness. The condition is under diagnosed and frequently undertreated. Major depression is characterized by feelings of intense sadness and despair, mental slowing and loss of concentration, pessimistic worry, lack of pleasure, self-deprecation and variable agitation or hostility. Physical changes also occur, particularly in severe, vital, or "melancholic" depression. These include insomnia or hypersomnia; altered eating patterns, with anorexia and weight loss or sometimes overeating; decreased energy and libido; and disruption of the normal circadian and ultradian rhythms of activity, body temperature and many endocrine functions. Depressed patients usually respond to antidepressant drugs, or, in severe or treatment-resistant cases, to electroconvulsive therapy (ECT). This method remains the most rapid and effective treatment for severe acute depression and sometimes is life-saving for acutely suicidal patients².

TYPES OF DEPRESSION^{2, 3, 4}

Major Depressive Disorder	People with major depression experience a near-constant state of sadness, emptiness and despair for at least two weeks. They are unable to enjoy activities that they once found pleasurable and may have a hard time eating, sleeping, working, or connecting with others. Major depressive disorder is also typically what is meant by "clinical depression."
Atypical Depression	Whereas people with major depression are uniformly depressed, people with atypical depression have what's called mood reactivity. That is, they experience temporary emotional highs from good news and lows from bad news.
Postpartum Depression	Postpartum depression is moderate to severe depression that can occur in women after childbirth.
Seasonal Affective Disorder	People with Seasonal Affective Disorder (SAD) experience depression every year in the late fall or early winter due to limited sunlight from the change in seasons.
Melancholic Depression	People who suffer from melancholic depression generally experience severe anhedonia (an inability to find pleasure in positive things), significant weight loss, psychomotor agitation and guilt.
Catatonic Depression	Catatonic depressives suffer from severe psychomotor disturbances, either involving a sudden inability to move at all, or conversely, an excessive amount of movement that seems to have no purpose.
Dysthymia	Although it typically has fewer or milder symptoms than major depression, dysthymia is just as serious because it lasts longer. The condition is characterized by experiencing a depressed mood most of the time for at least two years, along with at least two of these symptoms low self-esteem, hopelessness, poor concentration, poor appetite or overeating, insomnia or excessive sleep, indecisiveness, or a lack of energy.
Bipolar Disorder or Manic Depression	Bipolar disorder is characterized by intense mood swings that range from deep depression to intense euphoria. People may experience shifts in mood a few times a year or several times a day. Bipolar disorder is a lifelong condition that can be managed through medication and therapy.
Cyclothymia or Cyclothymic Disorder	Cyclothymia is a milder form of bipolar disorder in which individuals suffer mood swings that range from moderate depression to euphoria. The mood swings are less severe than with bipolar disorder and people with cyclothymia tend to stay grounded in reality. Cyclothymia is a long-term condition that may require lifelong treatment through medication and therapy.
Psychotic Depression	Severe depression can be accompanied by psychotic symptoms such as delusions or hallucinations. The content of the psychotic delusions tend to be consistent with feelings of depression; for example, someone suffering from psychotic depression may hear voices telling them that they are worthless and don't deserve to live.
Depression in Women	Women experience depression about twice as often as men. So what kinds of unique concerns do women with depression face? How may treatment vary because of these concerns?
Depression in Seniors	Depression in older adults often goes undetected or is confused with a general health issue or the condition of aging. Yet depression is not a normal part of aging.

Depression in Children & Teens	Kids and teens can have depression just as readily as adults can. Often times it is missed and just chalked up to a normal part of being a teenage (“Oh, he’s just moody!”) when in fact it is clinical depression.
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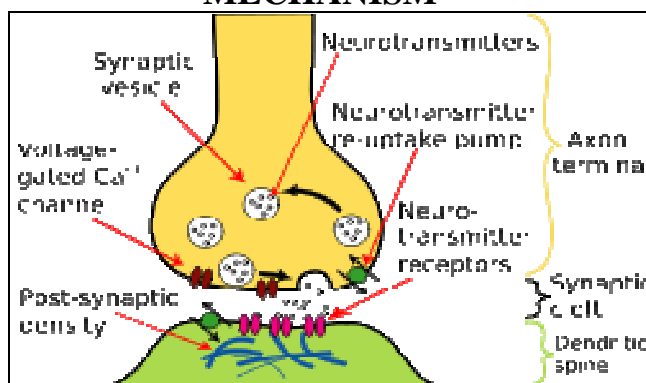
Table 1: Types of Depression**SYMPTOMS AND SIGNS**²

Major depression significantly affects a person's family and personal relationships, work or school life, sleeping and eating habits and general health.

Symptoms that people have when they're depressed can include

- depressed mood or sadness most of the time (for what may seem like no reason)
- lack of energy and feeling tired all the time
- inability to enjoy things that used to bring pleasure
- withdrawal from friends and family
- irritability, anger, or anxiety
- inability to concentrate
- significant weight loss or gain
- significant change in sleep patterns (inability to fall asleep, stay asleep, or get up in the morning)
- feelings of guilt or worthlessness
- aches and pains (with no known medical cause)
- pessimism and indifference (not caring about anything in the present or future)
- thoughts of death or suicide

When someone has five or more of these symptoms most of the time for 2 weeks or longer, that person is probably depressed.

MECHANISM³**Figure 1: Depression hypothesis**

Depression is associated with changes in substances in the brain (neurotransmitters) that help nerve cells communicate, such as serotonin, dopamine and norepinephrine. The levels of these neurotransmitters can be influenced by, among other things, physical illnesses, genetics, hormonal changes, medications, aging, brain injuries, seasonal/light cycle changes and social circumstances.

CAUSES²

There is no single cause for depression. Many factors play a role including genetics, environment, life events, medical conditions and the way people react to things that happen in their lives.

RISK FACTORS^{5,6}

Family History	People who have family members with a history of mood disorders have an increased risk for depression than the general population.
Lack of Social Support	Prolonged social isolation, or having few friends or supportive relationships, can increase the chances of depression.
Sleep Disorders	Chronic sleep problems, such as insomnia, are associated with depression. Although experts do not know if lack of sleep can cause depression, bouts of the mood disorder do seem to occur after weeks of poor sleep.
Death or Loss	Sadness and grief are a normal part of the coping process when you lose someone you love. Some people will get better in a matter of months, while others will develop serious depression. If symptoms last more than two months, you should be evaluated for depression.
Abuse	People who were neglected or abused (physically, sexually, or verbally) as children have an increased risk for major depression and dysthymia as well as other mental disorders.
Serious Illness	Many chronic conditions have been linked to higher rates of depression. Some of those include: chronic pain, arthritis, heart disease, diabetes, overactive and under active thyroid, stroke, cancer, multiple sclerosis, Alzheimer's disease, dementia, Parkinson's disease and Huntington's disease.
Substance Abuse	According to the U.S. Department of Health and Human Services, one-fifth of all people with depression abuse substances. Drug and alcohol abuse may lead to chemical changes in the brain that make people more susceptible to depression, or it could be that people with depression are more likely to self-medicate with mood-altering substance.
Major Life Events	Life-changing events even happy ones—can increase a person's risk for depression. These include having kids, changing or losing a job, buying a house, getting divorced, moving and retiring.
Certain Medications	Some medications, including prescription blood pressure medication, sleeping pills, sedatives, steroids and prescription painkillers have all been linked to depression. If you are taking any of these medications, talk to your doctor about your concerns. Never stop taking medication without first consulting your physician.
Gender	Women have twice the rate of depression as men. However, researchers note that may be due to more women seeking treatment for their symptoms than men. Others believe it could be due to hormonal changes throughout life. Women are particularly vulnerable to depression during pregnancy, after childbirth (postpartum depression) and during menopause.

Table 2: Risk Factors

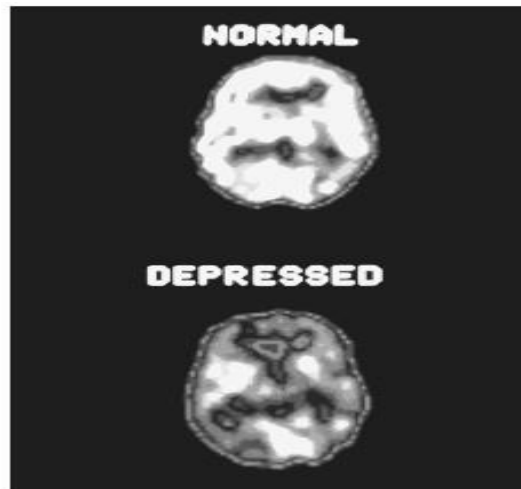
DEPRESSION TESTS⁵

Figure 2: Positron Emission Tomography (PET) scans comparing a normal brain with that of someone with depressed mental disorder

The best way for a mental health professional to diagnosis depression is with a thorough interview with the patient. In addition, your doctor may ask you to fill out the following depression rating questionnaires to help better gauge your symptoms.

Beck Depression Inventory

The Beck Depression Inventory (BDI) is made up of 21 (self-reported depression) questions designed to help mental health professionals assess the mood, symptoms and behaviors of people who are depressed. Each answer is given a score of zero through three that indicates severity of symptoms.

Hamilton Depression Rating Scale

The Hamilton Depression Rating Scale (HDRS) is a questionnaire designed to help health care professionals determine the severity of depression in patients who have already been diagnosed with depression. It also consists of 21 questions; each relates to a particular sign or symptom of depression. Multiple-choice answers are given a score of zero through four. Higher total scores indicate more severe depression.

Zung Self-Rating Scale for Depression

This is a screening tool that patients who have been diagnosed with major depression can use to assess the level of their depression. It is a 20-question tool that provides a score range from 20 to 80. Most people with depression score between 50 and 69. A score above that indicates severe depression

Depression complication⁴

Depression complication is a serious mental illness that requires medical attention. Treatment can help alleviate symptoms or banish them altogether. But left untreated, depression can often get worse and last for months or years

Major complications of depression can include:

Suicide or attempted suicide – Sixty percent of people who commit suicide suffer from depression.

Substance abuse and alcoholism – Up to 25 percent of people who abuse substances suffer from untreated depression.

Heart disease and other medical conditions – Depressed patients are more likely than non-depressed patients to develop type 2 diabetes and heart disease.

Other complications of depression may include:

- Insomnia
- Unexplained physical pain
- Social isolation
- Marriage, work and family problems
- Anxiety

DEPRESSION TREATMENT^{7, 8, 9}

There are many types of treatment that can help alleviate the symptoms of depression. Two-thirds of people living with the condition never seek treatment, even though 80 percent of all people with clinical depression who seek treatment do see improvement within a matter of weeks. Not all treatments will work for everyone. Your doctor can help determine which method or methods are right for you.

Antidepressants	Antidepressant medications are often the first line of treatment used for clinical depression and they are prescribed alone or alongside talk therapy.
Selective serotonin reuptake inhibitors (SSRIs)	Are medications that increase the amount of the neurochemical serotonin in the brain. As their name implies, the SSRIs work by selectively inhibiting (blocking) serotonin reuptake in the brain. The SSRIs work by keeping serotonin present in high concentrations in the synapses. SSRIs are often the first-line treatment for depression. Examples of SSRIs include fluoxetine (Prozac), paroxetine (Paxil), sertraline (Zoloft), citalopram (Celexa), fluvoxamine (Luvox) and escitalopram (Lexapro).
Dual-action antidepressants:	The biochemical reality is that all classes of medications that treat depression (MAOIs, SSRIs, TCAs and atypical antidepressants) have some effect on both norepinephrine and serotonin, as well as on other neurotransmitters. However, the various medications affect the different neurotransmitters in varying degrees. Some of the newer antidepressant drugs, however, appear to have particularly robust effects on both the norepinephrine and serotonin systems. These medications seem to be very promising, especially for the more severe and chronic cases of depression.
Atypical antidepressants	are so named because they work in a variety of ways. Thus, atypical antidepressants are not TCAs, SSRIs, or SNRIs, but they are effective in treating depression for many people nonetheless. More specifically, they increase the level of certain neurochemicals in the brain synapses (where nerves communicate with each other). Examples of atypical antidepressants include nefazodone (Serzone), trazodone (Desyrel) and bupropion (Wellbutrin). Lithium (Eskalith, Lithobid), valproate (Depakene, Depakote), carbamazepine (Eptol, Tegretol), neurontin (Gabapentin) and lamictal (Lamotrigine) are mood stabilizers and anticonvulsants. They have been used to treat bipolar depression. Certain antipsychotic medications, such as ziprasidone (Geodon), risperidone (Risperdal), quetiapine (Seroquel), aripiprazole (Abilify) and paliperdone (Invega), may treat psychotic depression. They have also been found to be effective mood stabilizers and are therefore sometimes been used to treat bipolar depression, usually in combination with other antidepressants.

<p>Monoamine oxidase inhibitors (MAOIs)</p>	<p>are the earliest developed antidepressants. Examples of MAOIs include phenelzine (Nardil) and tranylcypromine (Parnate). MAOIs elevate the levels of neurochemicals in the brain synapses by inhibiting monoamine oxidase. Monoamine oxidase is the main enzyme that breaks down neurochemicals, such as norepinephrine. When monoamine oxidase is inhibited, the norepinephrine is not broken down and, therefore, the amount of norepinephrine in the brain is increased.</p>
<p>Tricyclic antidepressants (TCAs)</p>	<p>were developed in the 1950s and '60s to treat depression. They are called tricyclic antidepressants because their chemical structures consist of three chemical rings. TCAs work mainly by increasing the level of norepinephrine in the brain synapses, although they also may affect serotonin levels. Doctors often use TCAs to treat moderate to severe depression. Examples of tricyclic antidepressants are amitriptyline (Elavil), protriptyline (Vivactil), desipramine (Norpramin), nortriptyline (Aventyl, Pamelor), imipramine (Tofranil), trimipramine (Surmontil) and perphenazine (Triavil).</p>
<p>Talk Therapy</p>	<p>If you've never been to a therapist, you might be surprised by your experience. Just as there are many types of antidepressants, there are also a few different kinds of therapy. Counseling can help you get things off your chest that you didn't realize were bothering you, help you identify destructive thoughts that get you down, help you understand where these feelings come from and teach you how to cope with those feelings. A lot of people may feel hesitant about talking to a stranger about their emotions, but studies show that talk therapy is a very effective treatment modality. Plus, you don't have to deal with the side effects of taking pills.</p>
<p>Cognitive Behavioral Therapy</p>	<p>Cognitive behavioral therapy (CBT) helps people find new ways of dealing with negative thoughts and behaviors. Instead of delving into the past to determine where a feeling or emotion comes from, CBT helps patients become more aware of how their beliefs or actions are contributing to depression. Once those are identified, a therapist will work with his or her patient to replace those negative attitudes with more positive ones. There may be daily or weekly exercises and guidance involved helping patients apply the skills they learn in therapy to the real world. More than 75 percent of people who undergo CBT for depression see significant improvement. Interpersonal Psychotherapy²⁴ Interpersonal psychotherapy (IPT) for depression focuses on relationships. It addresses specific conflicts within your relationships and looks at how you relate to people in general. Relationships in this case refer to all kinds of interpersonal connections, including family, friends, coworkers and even strangers. Short-term IPT usually involves up to 20 weekly hour-long sessions and is as effective as antidepressants.</p>
<p>Psychodynamic Therapy</p>	<p>When most people think of therapy, psychodynamic is the type that comes to mind. It involves getting to the psychological root of your depression. To do so, patients are asked to engage in a significant amount of self-examination and reflection on the past. One of the goals is to help people identify troublesome relationship patterns in their lives and understand where they come from. This can help patients see why they behave in certain ways and remove guilt or self-blame so they can move forward with their lives.</p>

<p>Electroconvulsive Therapy</p>	<p>Electroconvulsive therapy (ECT), known to some as “shock treatment,” is used to treat severely depressed or suicidal people who don’t respond to other forms of treatment or can’t take antidepressants. A small electric current is delivered to the patient’s brain while he is sedated under general anesthesia. The current, which lasts for about 40 seconds, causes seizure activity in the brain and typically brings immediate relief. Experts aren’t sure why it works. Some people may suffer from temporary confusion and memory loss. ECT is usually administered once every two to five days, for a total of six to 12 sessions.</p>
<p>Transcranial Magnetic Stimulation</p>	<p>A newer type of treatment, Transcranial magnetic stimulation (TMS) uses magnetic fields to stimulate cells in the brain. Like ECT, it is used when other forms of treatment, such as medication and therapy, don’t work. A large electromagnetic coil placed against the scalp delivers painless electric currents to the brain to stimulate areas associated with mood. Because TMS is so new, researchers are still trying to determine the best areas of the brain to target and the most effective dose of electric current. Its long-term effects are still largely unknown.</p>
<p>Deep Brain Stimulation</p>	<p>Originally used as a treatment for Parkinson’s disease, deep brain stimulation (DBS) is still considered experimental in its use for depression. With DBS, two electrodes are surgically implanted into an area of the brain that is overactive in people with depression. The electrodes provide continual electric stimulation via a generator that is embedded in the chest. Researchers believe the electric pulses reset the brain and help it to function normally.</p>
<p>Vagus Nerve Stimulation (or Vagal Nerve Stimulation)</p>	<p>Like deep brain stimulation, vagus nerve stimulation (VNS) is a type of brain-stimulating therapy that uses an implanted device to send electric currents to the brain. Instead of putting a set of electrodes in the brain, one electrode is embedded just underneath the skin along the vagus nerve in the neck. The vagus nerve transmits messages from the brain to some major organs, such as the heart, lungs and intestines, as well as to select parts of the brain. Stimulating this nerve appears to alter the levels of neurotransmitters (brain chemicals) associated with mood regulation. As with DBS, a pulse generator implanted in the chest controls the electrode. VNS is an experimental treatment and the long-term side effects of its use are currently unknown. It is only used in cases of severe or chronic depression when other treatments fail to work.</p>

Table 3: Depression Treatment

ALTERNATIVE TREATMENT ^{10, 11}

Many people turn to alternative or complementary therapy for their depression because they don’t want to take medication or are uncomfortable going for counseling. These therapies are not always effective and some are riskier than others. Although most mind-body treatments such as massage, yoga and meditation are safe, you should always consult your doctor before commencing any kind of alternative treatment even fish oil.

Exercise	Regular physical activity might not be the first thing your doctor prescribes when diagnosing you with depression, but research suggests maybe it should be. A Duke University study showed that 30 minutes of properly performed moderate aerobic exercise three days a week was as effective as antidepressants in treating symptoms of mild to moderate depression.
Relaxation Techniques	Depression, relaxation techniques may be better than nothing. According to For people who refuse to seek professional medical treatment for their a Cochrane Review of 15 clinical trials, relaxation techniques (such as progressive muscle relaxation, relaxation imagery and autogenic training) are not as effective as psychological therapies like cognitive-behavior therapy, but they are better than no treatment for people with depression.
Meditation	Meditation is a form of relaxation through which people try to clear their heads by focusing on their breathing or a word, otherwise known as a mantra. Some studies suggest that daily meditation practices can help alleviate stress, anxiety and some symptoms of depression.
Yoga	Yoga is a mind-body exercise that moves people through a series of poses that help improve balance, flexibility, strength and focus. They are thought to help align the spine, improve mental clarity and rejuvenate the nervous system. They may help reduce stress and promote relaxation as well as emotional wellness. A few small studies have shown that yoga may have potential as a treatment for anxiety and depression, but larger and deeper studies still need to be done.
Guided Imagery	Guided imagery uses the power of positive thinking to help people attain something specific. It is a form of meditation in which people envision their goal (in this case, to become happier) in as much detail as they can. Through this kind of detailed imagery, they may have an easier time achieving that goal. A few small studies have shown that guided imagery could be an effective treatment for patients with depressive disorders, but larger studies still need to be done.
Music Therapy	Music therapy has been used to help improve the moods of people with depression. Sometimes it involves listening to music that induces relaxation and a positive mood. Other times, it involves singing as a form of therapy.
Self-Help Methods	Self-help methods for the treatment of this disorder are often overlooked by the medical profession because very few professionals are involved in them. Depression-oriented support groups are especially effective, since they allow the individual an opportunity to socialize and be with others who suffer from similar feelings. Many support groups exist within communities throughout the world which are devoted to helping individuals with this disorder share their commons experiences and feelings.
Diet	The good news is that while certain foods may not completely eliminate the symptoms of depression, sticking to a healthy and well-balanced diet and keeping a healthy weight may help in the overall treatment of depression. Here are some tips for making the most out of your healthy diet.
Managing Omega-3 Fatty Acids	Omega-3 fatty acids have plenty of known health benefits, including possibly helping slowing the growth of cancerous tumors. Scientists have also discovered evidence linking a deficit of omega-3 fatty acids and depression. Specifically, research indicated that cultures that consume small amounts of omega-3 fatty acids have a higher incidence of depression. Other research indicates that those consuming little or no seafood, which is rich in omega-3s, are more likely to suffer from depression. To make sure you're getting enough, eat fish, especially salmon and tuna, as part of a balanced diet. Nuts and dark green leafy vegetables are also good sources of omega-3s.

Carb Up Calm Down	If you're suffering from depression, the Atkins Diet may not be the right choice for you. That's because eating foods that are high in carbohydrates (such as pastas and breads) naturally raises the amount of serotonin in the brain. And as the level of serotonin in the brain rises, anxiety levels drop, making it easier to calm down. So go ahead and indulge with that bagel, but remember it's still important to make the right choices when it comes to carbs. Whole grains and fresh fruits and vegetables supply carbs as well as fiber and nutrients without a lot of extra sugar.
Double Up on Vitamin D	Vitamin D has also been shown to increase the levels of serotonin present in the brain, but it is unclear precisely how much vitamin D is the right amount. The strongest research points to vitamin D being particularly helpful in relieving the effects of seasonal affective disorder. Speak to your doctor to determine if taking a supplement or trying to increase the vitamin D in your diet is right for you.
Seek Out Selenium	Selenium is an element that is essential for good health and several research studies have suggested a link between selenium deficiencies and depression. Some additional research studies have seemed to indicate that taking selenium may in fact actually decrease feelings of depression. Selenium can be found in nuts, whole grains, beans, seafood and lean meats. Too much selenium can be toxic, however, so talk to your doctor before taking any selenium supplements.

Table 4: Alternative Treatment

HOME REMEDIES FOR DEPRESSION¹²

- One of the simplest and effectual home remedy for treating depression is to add rose petals in a glass of boiling water. Add sugar to the drink and have it.
- Mix 1/8 teaspoon of nutmeg powder with 1 tablespoon of freshly extract amla juice. Consume this mixture thrice a day.
- Licorice tea also works well for depressed minds. Take 1-3 cups of tea per day to get rid of depression.
- The plant, Griffonia simplicifolia, gives a matter 5HTP which is extracted from the seedpods of the plant. Intake of this would relieve a person from depression.

Another remedy for curative depression is to have an apple with milk and honey. This might surprise you but a neutral fascination bath for about an hour would do wonders in curing a person off depression and uplift his/her mood.

CONCLUSION

The literature on knowing depression and pharmacological, non-pharmacological approaches for its treatment explains depression, its various causes and its prevention. An important, but often overlooked interpersonal aspect of depression is the role of poor social skills in the development and course of the disorder. Those people who experience repeated episodes of depression are required quick and ongoing treatment in order to prevent more severe, long-term depression. In some cases, people need to take medications for long periods of time or for the rest of their lives. Two-thirds of people living with the condition never seek treatment, even though 80 percent of all people with clinical depression who seek treatment do see improvement within a matter of weeks. Not all treatments will work for everyone.

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