



# A guide to what works for depression



Anthony Jorm, Nick Allen, Amy Morgan, Siobhan Ryan, Rosemary Purcell

[www.beyondblue.org.au](http://www.beyondblue.org.au)  1300 22 4636

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# What is depression?

**While we all feel sad, moody or low from time to time, some people experience these feelings intensely, for long periods of time (weeks, months or even years) and sometimes without any apparent reason. Depression is more than just a low mood – it's a serious illness that has an impact on both physical and mental health.**

Depression affects how people feel about themselves. They may lose interest in work, hobbies and doing things they normally enjoy. They may lack energy, have difficulty sleeping or sleep more than usual. Some people feel irritable and some find it hard to concentrate. Depression makes life more difficult to manage from day to day.

A person may be depressed if, for more than two weeks, he or she has felt sad, down or miserable most of the time or has lost interest or pleasure in usual activities, and has also experienced several of the signs and symptoms across at least three of the categories below.

It's important to note that everyone experiences some of these symptoms from time to time and it may not necessarily mean a person is depressed. Equally, not every person who is experiencing depression will have all of these symptoms.

## Behaviour

- not going out anymore
- not getting things done at work/school
- withdrawing from close family and friends
- relying on alcohol and sedatives
- not doing usual enjoyable activities
- unable to concentrate

## Feelings

- overwhelmed
- guilty
- irritable
- frustrated
- lacking in confidence
- unhappy
- indecisive
- disappointed
- miserable
- sad

## Thoughts

- 'I'm a failure.'
- 'It's my fault.'
- 'Nothing good ever happens to me.'
- 'I'm worthless.'
- 'Life's not worth living.'
- 'People would be better off without me.'

## Physical

- tired all the time
- sick and run down
- headaches and muscle pains
- churning gut
- sleep problems
- loss or change of appetite
- significant weight loss or gain

# What causes depression?

**While the exact cause of depression isn't known, a number of things can be associated with its development. Generally, depression does not result from a single event, but from a combination of recent events and other longer-term or personal factors.**

## Life events

Research suggests that continuing difficulties – long-term unemployment, living in an abusive or uncaring relationship, long-term isolation or loneliness, prolonged exposure to stress at work – are more likely to cause depression than recent life stresses. However, recent events (such as losing a job) or a combination of events can 'trigger' depression in people who are already at risk because of past bad experiences or personal factors.

## Personal factors

- Family history – Depression can run in families and some people will be at an increased genetic risk. However, this doesn't mean that a person will automatically experience depression if a parent or close relative has had the illness. Life circumstances and other personal factors are still likely to have an important influence.
- Personality – Some people may be more at risk of depression because of their personality, particularly if they have a tendency to worry a lot, have low self-esteem, are perfectionists, are sensitive to personal criticism, or are self-critical and negative.
- Serious medical illness – Having a medical illness can trigger depression in two ways. Serious illnesses can bring about depression directly, or can contribute to depression through associated stress and worry, especially if it involves long-term management of the illness and/or chronic pain.
- Drug and alcohol use – Drug and alcohol use can both lead to and result from depression. Many people with depression also have drug and alcohol problems. Over 500,000 Australians will experience depression and a substance use disorder at the same time, at some point in their lives.<sup>1</sup>

## Changes in the brain

Although there has been a lot of research in this complex area, there is still much that we do not know. Depression is not simply the result of a 'chemical imbalance', for example because you have too much or not enough of a particular brain chemical. There are in fact many and multiple causes of major depression. Factors such as genetic vulnerability, severe life stressors, substances you may take (some medications, drugs and alcohol) and medical conditions can lead to faulty mood regulation in the brain.

Most modern antidepressants have an effect on your brain's chemical transmitters (serotonin and noradrenaline), which relay messages between brain cells – this is thought to be how medications work for more severe depression. Psychological treatments can also help you to regulate your moods.

Effective treatments can stimulate new growth of nerve cells in circuits that regulate mood, which is thought to play a critical part in recovery from the most severe episodes of depression.

Everyone is different and it's often a combination of factors that can contribute to a person developing depression. It's important to note that you can't always identify the cause of depression or change difficult circumstances. The most important thing is to recognise the signs and symptoms and seek help.

For more information about symptoms of depression, including a symptom checklist, visit  
[www.beyondblue.org.au](http://www.beyondblue.org.au)

# Are there different types of depression?

**There are different types of depressive disorders. Symptoms can range from relatively minor (but still disabling) through to very severe, so it is helpful to be aware of the range of disorders and their specific symptoms.**

## Major depression

Major depression is sometimes called major depressive disorder, clinical depression, unipolar depression or simply depression. It involves low mood and/or loss of interest and pleasure in usual activities, as well as other symptoms such as those described earlier. The symptoms are experienced most days and last for at least two weeks. The symptoms interfere with all areas of a person's life, including work and social relationships. Depression can be described as mild, moderate or severe; melancholic or psychotic (see below).

## Melancholia

This is the term used to describe a severe form of depression where many of the physical symptoms of depression are present. One of the major changes is that the person can be observed to move more slowly. The person is also more likely to have a depressed mood that is characterised by complete loss of pleasure in everything, or almost everything.

## Psychotic depression

Sometimes people with a depressive disorder can lose touch with reality and experience psychosis. This can involve hallucinations (seeing or hearing things that are not there) or delusions (false beliefs that are not shared by others), such as believing they are bad or evil, or that they are being watched or followed. They can also be paranoid, feeling as though everyone is against them or that they are the cause of illness or bad events occurring around them.

## Antenatal and postnatal depression

Women are at an increased risk of depression during pregnancy (known as the antenatal or prenatal period) and in the year following childbirth (known as the postnatal period). You may also come across the term 'perinatal', which describes

the period covered by pregnancy and the first year after the baby's birth.

The causes of depression at this time can be complex and are often the result of a combination of factors. In the days immediately following birth, many women experience the 'baby blues' which is a common condition related to hormonal changes, affecting up to 80 per cent of women.<sup>2</sup> The 'baby blues', or general stress adjusting to pregnancy and/or a new baby, are common experiences, but are different from depression. Depression is longer lasting and can affect not only the mother, but her relationship with her baby, the child's development, the mother's relationship with her partner and with other members of the family.

Almost 10 per cent of women will experience depression during pregnancy. This increases to 16 per cent in the first three months after having a baby.<sup>3</sup>

## Bipolar disorder

Bipolar disorder used to be known as 'manic depression' because the person experiences periods of depression and periods of mania, with periods of normal mood in between.

Mania is like the opposite of depression and can vary in intensity – symptoms include feeling great, having lots of energy, having racing thoughts and little need for sleep, talking fast, having difficulty focusing on tasks, and feeling frustrated and irritable. This is not just a fleeting experience. Sometimes the person loses touch with reality and has episodes of psychosis. Experiencing psychosis involves hallucinations (seeing or hearing something that is not there) or having delusions (e.g. the person believing he or she has superpowers).

Bipolar disorder seems to be most closely linked to family history. Stress and conflict can trigger episodes for people with this condition and it's not uncommon for bipolar disorder to be misdiagnosed as depression, alcohol or drug abuse, attention deficit hyperactivity disorder (ADHD) or schizophrenia.

Diagnosis depends on the person having had an episode of mania and, unless observed, this can be hard to pick. It is

not uncommon for people to go for years before receiving an accurate diagnosis of bipolar disorder. It can be helpful for the person to make it clear to the doctor or treating health professional that he or she is experiencing highs and lows. Bipolar disorder affects approximately 2 per cent of the population.<sup>1</sup> Treatments for bipolar disorder are different and are not covered in this guide.

### Cyclothymic disorder

Cyclothymic disorder is often described as a milder form of bipolar disorder. The person experiences chronic fluctuating moods over at least two years, involving periods of hypomania (a mild to moderate level of mania) and periods of depressive symptoms, with very short periods (no more than two months) of normality between. The duration of the symptoms are shorter, less severe and not as regular, and therefore don't fit the criteria of bipolar disorder or major depression.

### Dysthymic disorder

The symptoms of dysthymia are similar to those of major depression but are less severe. However, in the case of dysthymia, symptoms last longer. A person has to have this milder depression for more than two years to be diagnosed with dysthymia.

### Seasonal affective disorder (SAD)

SAD is a mood disorder that has a seasonal pattern. The cause of the disorder is unclear; however it is thought to be related to the variation in light exposure in different seasons. It's characterised by mood disturbances (either periods of depression or mania) that begin and end in a particular season. Depression which starts in winter and subsides when the season ends is the most common. It's usually diagnosed after the person has had the same symptoms during winter for a couple of years. People with seasonal affective disorder depression are more likely to experience lack of energy, sleep too much, overeat, gain weight and crave for carbohydrates. SAD is very rare in Australia and more likely to be found in

countries with shorter days and longer periods of darkness, such as in the cold climate areas of the Northern Hemisphere.

### Depression is common, but often untreated

In any one year, around one million Australian adults have depression. On average one in eight men and one in five women will experience depression in their lifetime.<sup>1</sup>

A national survey of the mental health of Australians was carried out in 2007. This survey asked people about a range of symptoms of depression and other mental health problems. A special computer program was used to make a diagnosis based on the answers provided. Shown below are the percentages of people found to be affected.

### Percentage of Australians aged 16 years or over affected by depressive disorders<sup>1</sup>

Type of disorder	Percentage affected in previous 12 months	Percentage affected at any time in their life
Depressive episode	4.1%	11.6%
Dysthymia	1.3%	1.9%
Bipolar disorder	1.8%	2.9%
Any depressive disorder	6.2%	15.0%

Although these disorders are common, many people affected by them do not get treatment. In the national survey, more than half of those who had a depressive disorder in the previous 12 months did not receive any professional help.

# Who can assist?

Different health professionals (such as GPs, psychologists and psychiatrists) offer different types of services and treatments for depression. Below is a guide to the range of practitioners available and what kind of treatment they provide.

## General Practitioners (GPs)

GPs are the best starting point for someone seeking professional help. A good GP can:

- make a diagnosis
- check for any physical health problem or medication that may be contributing to the depression
- discuss available treatments
- work with the person to draw up a Mental Health Treatment Plan so he or she can get a Medicare rebate for psychological treatment
- provide brief counselling or, in some cases, talking therapy
- prescribe medication
- refer a person to a mental health specialist such as a psychologist or psychiatrist.

Before consulting a GP about depression, it's important to ask the receptionist to book a longer or double appointment, so there is plenty of time to discuss the situation without feeling rushed. If you aren't able to make a longer appointment, it's a good idea to raise the issue of depression or anxiety early in the consultation so there is plenty of time to discuss it.

Ideally, you should consult your regular GP or another GP in the same clinic, as medical information is shared within a practice. While some GPs may be more confident at dealing with depression and anxiety than others, the majority of GPs will be able to assist or at least refer you to someone who can, so they are the best place to start. For those without a regular GP or clinic, there is a list of GPs with expertise in treating common mental health conditions available on the *beyondblue* website or by calling 1300 22 4636.

## Psychologists

Psychologists are health professionals who provide psychological therapies such as cognitive behaviour therapy (CBT) and interpersonal therapy (IPT). Clinical psychologists specialise in the assessment, diagnosis and treatment of mental health conditions. Psychologists and clinical psychologists are not doctors and cannot prescribe medication in Australia.

It is not necessary to have a referral from a GP or psychiatrist to see a psychologist. However, a Mental Health Treatment Plan from a GP is needed to claim rebates through Medicare. If you have private health insurance and extras cover, you may be able to claim part of a psychologist's fee. Contact your health fund to check.

## Psychiatrists

Psychiatrists are doctors who have undergone further training to specialise in mental health. They can make medical and psychiatric assessments, conduct medical tests, provide therapy and prescribe medication. Psychiatrists often use psychological treatments such as cognitive behaviour therapy (CBT), interpersonal therapy (IPT) and/or medication. If the depression is severe and hospital admission is required, a psychiatrist will be in charge of the person's treatment.

A referral from a GP is needed to see a psychiatrist. Rebates can also be claimed through Medicare.

The GP may suggest the person sees a psychiatrist if:

- the depression is severe
- the depression lasts for a long time, or comes back
- the depression is associated with a high risk of self-harm
- the depression has failed to respond to treatment
- the GP thinks that he or she doesn't have the appropriate skills required to treat the person effectively.

## **Mental health nurses**

Mental health nurses are nurses who have undertaken further training to care for people with mental health conditions. They work with psychiatrists and GPs to review the state of a person's mental health and monitor their medication. They also provide people with information about mental health conditions and treatment. Some have training in psychological therapies. For a referral to a mental health nurse who works in a general practice, ask your GP.

## **Accredited Mental Health Social Workers**

Accredited Mental Health Social Workers specialise in working with and treating mental health conditions, such as depression and anxiety. Many are registered with Medicare to provide focused psychological strategies, such as CBT, IPT, relaxation training, psycho-education and interpersonal skills training.

## **Occupational therapists in mental health**

Occupational therapists in mental health help people who have difficulty functioning because of a mental health condition to participate in normal, everyday activities. Some can also provide focused psychological strategies.

Medicare rebates are also available for individual or group sessions with social workers and occupational therapists in mental health.

## **Aboriginal and Torres Strait Islander health workers**

Aboriginal and Torres Strait Islander health workers are health workers who understand the health issues of Indigenous people and what is needed to provide culturally-safe and accessible services. Some workers may have undertaken training in mental health and psychological therapies. Support provided by Aboriginal and Torres Strait Islander mental health workers might include, but not be limited to, case management, screening, assessment, referrals, transport to and attendance at specialist appointments, education, improving access to mainstream services, advocacy, counselling, support for family and acute distress response.

The cost of getting treatment for depression from a health professional varies. However, in the same way that people can get a Medicare rebate when they see a doctor, they can also get part or all of the consultation fee subsidised when they see a mental health professional for treatment of depression. It's a good idea to find out the cost of the service and the available rebate before making an appointment. The receptionist should be able to provide this information.

## **Counsellors**

Counsellors can work in a variety of settings, including private practices, community health centres, schools and universities and youth services. A counsellor can talk through different problems a person may be experiencing and look for possible solutions. However, it is important to note that not all counsellors have specific training in treating mental health conditions like depression and anxiety.

While there are many qualified counsellors who work across different settings, unfortunately, anyone can call themselves a 'counsellor', even if they don't have training or experience. For this reason, it's important to ask for information about the counsellor's qualifications and whether they are registered with a state board or a professional society.

## Complementary health practitioners

There are many alternative and complementary treatment approaches for depression. However, many of these services are not covered by Medicare. Some services may be covered by private health insurance. If you don't have private health insurance, you may have to pay for these treatments. When seeking a complementary treatment, it is best to check whether the practitioner is registered by a state Registration Board or a professional society. It is a good idea to make sure the practitioner uses treatments which are supported by evidence that shows they are effective.

## Do you live in a rural or remote area?

People living in rural and remote communities may find it difficult to access the mental health professionals listed here. If a General Practitioner or other mental health professional is not readily available, there are a number of help and information lines that may be able to assist and provide information or advice. For people with internet access, it may also be beneficial in some cases to try online e-therapies. Call the *beyondblue* support service on 1300 22 4636 to find out more.

## How family and friends can help

Family members and friends play an important role in a person's recovery. They can offer support, understanding and help, and can assist the person to get appropriate professional help.

When someone you care about is experiencing depression, it can be hard to know what the right thing is to do. Sometimes, it can be overwhelming and cause worry and stress. It is very important that you take the time to look after yourself and monitor your own feelings if you're supporting a friend or family member with depression.

Information about depression and practical advice on how to help someone you are worried about is available at [www.beyondblue.org.au](http://www.beyondblue.org.au). The 'Guide for carers' booklet gives information on supporting and caring for a person with depression. *beyondblue* also has a range of helpful resources, including fact sheets, booklets, wallet cards and DVDs about depression, available treatments and where to get help – go to [www.beyondblue.org.au/resources](http://www.beyondblue.org.au/resources)

<sup>1</sup> Australian Bureau of Statistics [2008] *2007 National Survey of Mental Health and Wellbeing: Summary of Results* (4326.0). Canberra: ABS.

<sup>2</sup> National Health and Medical Research Council (2000) *Postnatal Depression: Not Just the Baby Blues*. Canberra: Commonwealth of Australia.

<sup>3</sup> Perinatal Mental Health Consortium (2008) *National Action Plan for Perinatal Mental Health 2008–2010 Full Report*. Melbourne: *beyondblue*.

<sup>4</sup> Sotsky SM, Glass DR, Shea MT, Pilkonis PA, Collins JF, Elkin I, et al. Patient predictors of response to psychotherapy and pharmacotherapy: findings in the NIMH Treatment of Depression Collaborative Research Program. *American Journal of Psychiatry*. 1991; 148:997–1008.

<sup>5</sup> Krell HV, Leuchter AF, Morgan M, Cook IA, Abrams M. Subject expectations of treatment effectiveness and outcome of treatment with an experimental antidepressant. *Journal of Clinical Psychiatry*. 2004;65:1174–1179.

<sup>6</sup> Priebe S, Gruyters T. The importance of the first three days: predictors of treatment outcome in depressed in-patients. *British Journal of Clinical Psychology*. 1995;34:229–236.

# How to use this booklet

**There are many different approaches to treating depression. These include medical treatments (such as medications or medical procedures), psychological therapies (including 'talking therapies') and self-help (such as complementary and alternative therapies or lifestyle approaches).**

All of the approaches included in this booklet have been investigated as possible 'treatments' for depression – see 'How this booklet was developed' over the page. However the amount of evidence supporting the effectiveness of different interventions can vary greatly. In addition, some of the approaches listed are not available or used as treatments – for example, marijuana is an illicit drug that is not available as a treatment for depression, but has been used in research studies to see if it reduces depression.

This booklet provides a summary of what the scientific evidence says about each approach. Even when an intervention is shown to have some effect in research this does not mean it is available, used in clinical practice, or will be recommended or work equally well for every person. There is no substitute for the advice of a mental health practitioner, who can advise on the best available treatment options.

**We have rated the evidence for the effectiveness of each intervention covered in this booklet using a 'thumbs up' scale:**

	There are a lot of good quality studies showing that the approach works.
	There are a number of studies showing that the intervention works, but the evidence is not as strong as for the best approaches.
	There are at least two good studies showing that the approach works.
	The evidence shows that the intervention does not work.
	There is not enough evidence to say whether or not the approach works.
	The intervention has potential risks, mainly in terms of side-effects.

When a treatment is shown to work scientifically, this does not mean it will work equally well for every person. While it might work for the average person, some people will have complications, side-effects or incompatibilities with their lifestyle. The best strategy is to try an approach that works for most people and that you are comfortable with.

If you do not recover quickly enough, or experience problems with the treatment, then try another.

Another factor to consider is beliefs. A treatment is more likely to work if a person believes in it and is willing to commit to it.<sup>4,5,6</sup> Even the most effective treatments will not work if they are used sometimes or half-heartedly. Some people have strong

beliefs about particular types of treatment. For example, some do not like taking medications in general, whereas others have great faith in medical treatments. However strong beliefs in a particular approach may not be enough, especially if there is no good evidence that the treatment works.

**This booklet provides a summary of what the scientific evidence says about different approaches that have been studied to see if they reduce depression. The reviews in this booklet are divided into the following sections:**

#### **Psychological interventions**

These therapies can be provided by a range of health practitioners, but particularly psychologists and clinical psychologists.

#### **Medical interventions**

These interventions are generally provided by a doctor (usually a GP or a psychiatrist).

#### **Complementary and lifestyle interventions**

These approaches can be provided by a range of health practitioners, including complementary health practitioners. Some of them can be used as self-help.

#### **Interventions that are not routinely available**

Approaches that are not currently available or used as a treatment for depression, but have been used in research studies.

Within each of these areas, we review the scientific evidence for each intervention to determine whether or not they are supported as being effective.

We recommend that people seek treatments that they believe in and are also supported by evidence. Whatever treatments are used, they are best done under the supervision of a GP or mental health professional. This is particularly important where more than one treatment is used. Often combining treatments that work is the best approach. However, sometimes there can be side-effects from combinations, particularly prescribed or complementary medications.

#### **How this booklet was developed**

##### **Searching the literature**

To produce these reviews, the scientific literature was searched systematically on the following online databases: the Cochrane Library, PubMed, PsycINFO and Web of Science.

##### **Evaluating the evidence**

Studies were excluded if they involved people who had not been diagnosed as depressed or sought help. Where there was an existing recent systematic review or meta-analysis, this was used as the basis for drawing conclusions. Where a systematic review did not exist, individual studies were read and evaluated. A study was considered adequate if it had an appropriate control group and participants were randomised.

##### **Writing the reviews**

The reviews were written for an 8th grade reading level or less. Each review was written by one of the authors and checked for readability and clarity by a second author. All authors discussed and reached consensus on the 'thumbs up' rating for each treatment

# A summary of what works for depression

Psychological interventions	
Acceptance and commitment therapy (ACT)	
Animal assisted therapy	
Behaviour therapy / Behavioural activation	
Cognitive behaviour therapy (CBT)	
Computer or internet treatments (professionally guided)	
Dance and movement therapy	
Hypnosis (Hypnotherapy)	
Interpersonal therapy (IPT)	
Mindfulness based cognitive therapy (MBCT)	
Music therapy	
Problem solving therapy	
Psychodynamic psychotherapy	

Psychological interventions (continued)	
Psychoeducation	
Relationship therapy	
Reminiscence therapy <i>For older people</i>	
Supportive therapy	

Medical interventions	
Antidepressant medication <i>For moderate to severe depression</i>	
Anti-psychotic drugs <i>For severe depression</i> <i>For severe depression, combined with an antidepressant</i>	  
Electroconvulsive therapy (ECT) <i>For severe depression that hasn't responded to other treatment</i>	
Lithium <i>For long-term depression</i>	
Stimulant drugs	
Transcranial magnetic stimulation (TMS) <i>For severe depression, or depression that hasn't responded to other treatments</i>	

Complementary and lifestyle interventions	
<b>Alcohol avoidance</b> <i>In people with a drinking problem</i>	
<b>Bibliotherapy</b> <i>With a professional</i>	
<b>Carnitine / Acetyl-L-Carnitine</b> <i>For dysthymia</i>	
<b>Computer or internet treatments (self-guided)</b>	
<b>Exercise</b> <i>For adults</i>	
<b>Folate</b> <i>In combination with an antidepressant</i>	
<b>Light therapy</b> <i>For seasonal affective disorder</i>	
<i>Non-seasonal depression in combination with an antidepressant</i>	
<b>Massage</b>	
<b>Omega-3 fatty acids</b> <i>Containing mainly EPA</i>	
<b>Relaxation training</b>	
<b>Saffron</b>	
<b>SAMe</b>	

Complementary and lifestyle interventions (continued)	
<b>Sleep deprivation</b> <i>For short-term mood improvement</i>	
<b>St John's wort</b> <i>For mild to moderate depression</i>	
<b>Traditional Chinese herbal medicine</b> <i>Free and Easy Wanderer Plus</i>	
<b>Yoga</b>	
<b>Zinc</b> <i>In combination with an antidepressant</i>	

Interventions that are not routinely available	
<b>Ketamine</b> <i>For severe depression that hasn't responded to other treatment</i>	
<b>Negative air ionisation</b>	

# Psychological interventions

Acceptance and commitment therapy (ACT)

Evidence rating



## What is it?

ACT is a type of cognitive behaviour therapy (CBT). However, it is different from CBT because it does not teach people how to change their thinking and behaviour. Rather, ACT teaches them to 'just notice' and accept their thoughts and feelings, especially unpleasant ones that they might normally avoid. This is because ACT believes it is unhelpful to try to control or change distressing thoughts or feelings when depressed. In this way it is similar to mindfulness based cognitive therapy (see page 21). ACT usually involves individual meetings with a therapist.

## How is it meant to work?

ACT is thought to work by helping people to stop avoiding difficult experiences, especially by 'over thinking' these experiences. Over thinking occurs when people focus on the 'verbal commentary' in their mind rather than the experiences themselves. ACT encourages people to accept their reactions and to experience them without trying to change them. Once people have done this, they are then encouraged to choose a way to respond to situations that is consistent with their values, and to put those choices into action.

## Does it work?

ACT has been tested in a number of well-designed studies, but the evidence on whether it works or not is still emerging. A recent report of a range of studies using ACT concluded that there is still more research needed before it can be considered to have the highest standards of evidence. Nevertheless, ACT is a very promising new approach to treating depression.

**Are there any risks?** None are known.

## Recommendation

ACT is a promising new approach to psychological therapy for people who are depressed. Although more work is needed, it might be worth trying for those who have not found more established treatments (like CBT, IPT or antidepressants) to be helpful.

## Animal assisted therapy

## Evidence rating



### What is it?

Animal assisted therapy is a group of treatments where animals are used by a trained mental health professional in the therapy. Usually these are pets such as dogs and cats, but other animals like horses are also used. The interaction between the person and the animal is a focus of the treatment, and is thought to have benefits for the person's mood and wellbeing.

### How is it meant to work?

It has been claimed that interacting with animals has physiological benefits, both through increased levels of activity and the beneficial effects of being around animals. It is also believed that interacting with and caring for animals can have psychological benefits by improving confidence and increasing a sense of acceptance and empathy.

### Does it work?

Animal assisted therapy has been tested in a reasonable number of well-designed studies. One review pooled five of these studies together, and found that, overall, animal assisted therapy did help people more than no treatment. Another study, however, found that it improved anxiety but not depression.

### Are there any risks?

None are known.

### Recommendation

Animal assisted therapy appears to be helpful for depression. However, some larger studies should be done so we can be more confident of this.

## Art therapy

## Evidence rating



### What is it?

Art therapy is a form of treatment that encourages people to express their feelings using art materials, such as paints, chalk or pencils. In art therapy, the person works with a therapist, who combines other techniques with drawing, painting or other types of art work, and often focuses on the emotional qualities of the different art materials.

### How is it meant to work?

Art therapy is based on the belief that the process of making a work of art can be healing. Issues that come up during art therapy are used to help the person to cope better with stress, work through traumatic experiences, improve his/her judgment, and have better relationships with family and friends.

### Does it work?

Art therapy has not yet been evaluated properly in well-designed studies. There are reports only of treatments with a single person (case studies).

### Are there any risks?

None are known.

### Recommendation

We do not yet know if art therapy works for depression.

## Behaviour therapy / Behavioural activation

### Evidence rating



#### What is it?

Behaviour therapy (BT), also called behavioural activation, is a major component of cognitive behaviour therapy (CBT, see opposite). However, it is different from CBT because it focuses exclusively on increasing people's levels of activity and pleasure in their life. Unlike CBT, it does not focus on changing people's beliefs and attitudes. BT can be carried out with individuals or groups, and generally lasts eight to 16 weeks.

## Cognitive behaviour therapy (CBT)

### Evidence rating



#### What is it?

In CBT, people work with a therapist to look at patterns of thinking (cognition) and acting (behaviour) that are making them more likely to become depressed, or are keeping them from improving once they become depressed. Once these patterns are recognised, the person can make changes to replace them with ones that promote good mood and better coping. CBT can be conducted one-on-one with a therapist or in groups. Treatment length can vary, but is usually four to 24 weekly sessions.

#### How is it meant to work?

BT tries to help people who are depressed by teaching them how to become more active. This often involves doing activities that are rewarding, either because they are pleasant (e.g. spending time with good friends or engaged in hobbies) or give a sense of satisfaction. These are activities such as exercising, performing a difficult work task or dealing with a long-standing problem that, while not fun, gives one a feeling of a 'job well done'. This helps to reverse patterns of avoidance, withdrawal and inactivity that make depression worse, replacing them with rewarding experiences that reduce depression.

#### Does it work?

Because BT is such a large part of CBT, there have been less studies looking at BT alone. However, a number of well-designed studies have been carried out, and some reviews have pooled the findings from a number of these studies. These studies showed that BT is effective for depression and that it works equally as well as CBT. Some studies have even suggested that BT might be more effective than CBT for severe depression.

#### Are there any risks?

None are known.

#### Recommendation

BT is an effective treatment for depression. It might be especially helpful for severe depression.

#### How is it meant to work?

CBT is thought to work by helping people to recognise patterns in their thinking and behaviour that make them more likely to become depressed. For example, very negative, self-focused, and self-critical thinking is often linked with depression. In CBT, the person works to change these patterns to use more realistic and problem solving thinking. As well, depression is often increased when a person stops doing things he/she previously enjoyed. CBT helps the person to increase activities that give him/her pleasure or a sense of achievement. This is the behavioural component of CBT.

#### Does it work?

CBT has been tested in more well-designed studies than any other form of psychological therapy for depression. It is effective for a wide range of people, including children, adolescents, adults and older people. Some studies show that it might be useful especially when combined with an antidepressant, but it can also be very effective on its own. CBT might also be good at helping to prevent depression from returning once a person has recovered.

#### Are there any risks?

None are known.

#### Recommendation

CBT is one of the most effective treatments available for depression.

## Computer or internet treatments (professionally guided)

### Evidence rating



#### What is it?

Computer assisted therapies use computer technology to deliver treatments, usually via the internet. Sometimes these approaches are also supported by a therapist who helps the person apply what they are learning to their life. The therapist communicates with the person doing the computer therapy over the phone, or by text, instant messaging or email. Just about all the computer assisted therapy programs are based on cognitive behaviour therapy (CBT) (see previous page).

## Dance and movement therapy (DMT)

### Evidence rating



#### What is it?

DMT combines expressive dancing with more usual psychological therapy approaches to depression, such as discussion of a person's life difficulties. Usually, a DMT session involves a warm-up and a period of expressive dancing or movement. This is followed by discussion of the person's feeling and thoughts about the experience and how it relates to their life situation.

#### How is it meant to work?

The computer or web programs teach people the skills of CBT, which helps them to identify and change patterns of thinking and behaviour that might be keeping them from overcoming their depression. Computer based learning is seen as a good way to make this treatment more widely available at low cost to people than would be possible if everyone had to see a therapist face to face.

#### Does it work?

A number of studies have pooled findings and have found that computer assisted therapy can be effective in treating depression. Some of these studies have found that supported computer assisted therapy (during which a therapist has regular contact with the person taking the course) is more effective than unsupported computer assisted therapy (see page 45).

#### Are there any risks?

None are known.

#### Recommendation

Computer assisted therapy is an effective way to deliver CBT for depression, especially when it is combined with some assistance from a therapist. There may be problems with high rates of drop out (people not completing the program) and some people do not find this type of therapy acceptable or easy to use.

## **Eye movement desensitisation and reprocessing (EMDR)**

### **Evidence rating**



#### **What is it?**

EMDR is a form of treatment that aims to reduce symptoms associated with distressing memories and unresolved life experiences. It was primarily designed to treat post-traumatic stress disorder (PTSD) but is occasionally also applied to depression. During treatment with EMDR, the person is asked to recall disturbing memories while making particular types of eye movements that are thought to help in the processing of these memories.

#### **How is it meant to work?**

EMDR takes the view that distressing memories that are poorly processed are a cause of many types of mental health problems. It is believed that focusing on these distressing memories, while making certain eye movements, helps the brain to process the memories properly, and this helps to reduce the distress they cause.

#### **Does it work?**

Although EMDR has been tested carefully for treating PTSD, there have been only a few poor-quality studies of EMDR for depression (generally only involving one person).

#### **Are there any risks?**

None are known, although it is possible that focusing on traumatic memories without the support of a skilled therapist could increase distress in some people.

#### **Recommendation**

We do not yet know if EMDR is effective for depression.

## **Family therapy**

### **Evidence rating**



#### **What is it?**

Family therapy refers to several different treatment approaches that all treat family relationships as an important factor in mental health. Usually the whole family (or at least a number of family members) will attend therapy sessions, rather than just the family member who is experiencing depression. The therapist tries to help the family members change their patterns of communication, so that their relationships are more supportive and there is less conflict. Family therapy approaches are most often used when a child or adolescent is experiencing depression.

#### **How is it meant to work?**

Family therapists take the view that, even if the problem is considered an 'individual' problem rather than a 'family' problem, involving the family in the solution will be the most helpful approach. This is true especially when a child or adolescent is depressed. This is based on the idea that relationships play a large role in affecting how we feel about ourselves. When family relationships are supportive and honest, this will often help to resolve problems and improve the mood of family members.

#### **Does it work?**

Although there have been many studies that show that the family environment has a strong influence on mental health, there have been few good-quality studies of family therapy for depression specifically. Some of these studies do not provide strong support for its effectiveness, but one study with adolescents did find it was better than treatment as usual. However, some evidence suggests that family therapy is less effective than cognitive behaviour therapy for adolescents experiencing depression.

#### **Are there any risks?**

No major risks are known.

#### **Recommendation**

There is some promising evidence for treating adolescents, but more studies are needed to determine if family therapy works for depression.

## Hypnosis (Hypnotherapy)

## Evidence rating



Hypnosis should be provided by a qualified mental health professional who is trained in this technique.

### What is it?

Hypnosis involves a therapist helping the person to get into a hypnotic state. This is an altered state of mind where the person can experience very vivid mental imagery. Time may seem to pass more slowly or more quickly than usual and people often notice things that are passing through their mind that they might not otherwise notice. They might also find that they are able to ignore or forget about certain painful experiences, including physical pain.

### How is it meant to work?

Hypnosis is usually used along with another type of treatment, such as psychodynamic psychotherapy (see page 24) or cognitive behaviour therapy (CBT) (see page 17). This means that there are many different types of hypnosis treatments for depression. However, all of the treatments use hypnosis to help the person to make important changes, such as resolving emotional conflicts, focusing on strengths, becoming more active, or changing ways of thinking. It is believed that these changes are easier to make when the person is in a hypnotic state.

### Does it work?

There are very few well-designed studies that have tested whether hypnosis works for depression. One good study has shown that 'cognitive hypnotherapy' (a type of hypnosis combined with CBT) was slightly more effective than CBT. Another study pooled the findings from six studies and found that hypnosis was better than no treatment, but many of the studies were small or poorly designed.

### Are there any risks?

No major risks are known. However, hypnosis needs to be used by a properly trained mental health professional. Otherwise, it is possible that some people might become distressed by strong feelings or mental images or they might become dependent on their therapist.

### Recommendation

Hypnosis, especially the combination of hypnosis with cognitive behaviour therapy, might be effective for depression. However, some larger studies should be done so we can be more confident of this.

## Interpersonal therapy (IPT)

## Evidence rating



### What is it?

IPT is a type of psychological therapy that focuses on problems in personal relationships, and on building skills to deal with these problems. IPT is based on the idea that these interpersonal problems are a significant part of the cause of depression. It is different from other types of therapy for depression because it focuses more on personal relationships than what is going on in the person's mind (e.g. thoughts and feelings). Although treatment length can vary, IPT for depression is conducted usually over four to 24 weekly sessions.

### How is it meant to work?

IPT is thought to work by helping people to recognise patterns in their relationships with others that make them more vulnerable to depression. In this treatment, the person and therapist focus on specific interpersonal problems, such as grief over lost relationships, different expectations in relationships between the person and others, giving up old roles to take on new ones, and improving skills for dealing with other people. By helping people to overcome these problems, IPT aims to help them improve their mood.

### Does it work?

IPT has been tested in a number of well-designed studies and has been found to be effective for a range of people, including adolescents, adults and older people, as well as women going through postnatal depression and people with HIV. There has been an especially large number of studies on IPT with adolescents.

### Are there any risks?

None are known.

### Recommendation

IPT is an effective treatment for depression.

## Mindfulness based cognitive therapy (MBCT)

## Evidence rating



### What is it?

Originally, MBCT was designed as an approach to preventing the return or relapse of depression. More recently it has been used to help people who are currently experiencing depression. Generally, it is delivered in groups. It involves learning 'mindfulness meditation'. This type of meditation teaches people to focus on the present moment, just noticing whatever they are experiencing, including pleasant and unpleasant experiences, without trying to change them. At first, this approach is used to focus on physical sensations (like breathing), but later it is used to focus on feelings and thoughts.

### How is it meant to work?

MBCT helps people to change their state of mind so that they can experience and be aware of what is happening at the present time. It stops their mind wandering off into thoughts about the future or the past, or trying to avoid unpleasant thoughts and feelings. This is thought to be helpful in preventing depression from returning because it allows people to notice feelings of sadness and negative thinking patterns early, before they have become fixed. Therefore, it helps the person to deal with these early warning signs better.

### Does it work?

MBCT has now been tested in a large number of well-designed studies. It has been found to help prevent the return of depression in people who have previously been severely depressed. This is important because it is common for people who have experienced depression to find that it returns at some later time in their life. A number of good-quality studies have also been done looking at whether MBCT is helpful for people who are currently depressed. A study that pooled results from 36 studies found that MBCT helped to reduce depression.

### Are there any risks?

None are known.

### Recommendation

MBCT appears to be very effective at preventing the return of depression in people who have been depressed a number of times, and it also appears to be effective in helping people who are currently depressed.

## Music therapy

## Evidence rating



### What is it?

In music therapy a therapist uses music to help someone dealing with depression to overcome his or her problems. Music therapy is often combined with another approach to psychological therapy, such as behaviour therapy (see page 17), psychodynamic psychotherapy (see page 24) or cognitive behaviour therapy (see page 17). Different approaches to music therapy can include people either playing and making up their own music, or just listening to music.

## Narrative therapy

## Evidence rating



### What is it?

Narrative therapy is an approach to psychological therapy that focuses on how people think about themselves and their life situations in terms of narratives, or stories. People come for psychological therapy either alone, with their partner, or with their families.

### How is it meant to work?

Listening to music is thought to help depressed people because it directly causes physical and emotional changes. Sometimes people are asked to perform another activity while listening to music, such as relaxation, meditation, movement, drawing or reminiscing. Making one's own music is thought to help with depression by allowing the person to experience a good relationship with the therapist through making music together, and to explore new ways of expressing oneself (similar to art therapy, see page 16).

### Does it work?

Until recently, music therapy has only been tested in a small number of poor-quality studies. However, a couple of recent good-quality studies have shown that it is effective. Reviews of studies have pointed out that we need more good-quality studies before we can be really confident that music therapy is effective.

### Are there any risks?

None are known.

### Recommendation

Recent evidence suggests that music therapy may be an effective treatment for depression, but more good studies are needed.

## Neurolinguistic programming (NLP)

### Evidence rating



#### What is it?

NLP is an approach to psychological therapy that was developed in the 1970s based on observing people who were thought to be expert therapists. NLP assumes that if we can understand the way these experts use language when they are counselling people, then others can be effective therapists by using language in a similar way.

#### How is it meant to work?

NLP emphasises changing the way we see ourselves and the things that happen to us by changing the language we use. In NLP, the therapist uses specific patterns of communication with the person, such as matching his/her preferred sensory mode – vision, hearing or touch. These help to change the way people interpret their world. By changing the way people interpret their world, NLP aims to reduce depression. Negative and self-defeating perceptions are changed into ones that instil confidence and good moods.

#### Does it work?

Despite its scientific sounding name, and the fact that it has been around for decades, NLP has not been evaluated properly in well-designed studies. Only a few reports of treatments with a single person (case studies) have been published. These reports are not enough to provide convincing evidence that it is likely to work for most people. Also, some of the psychological theories that underlie NLP have not been supported when they were tested in careful research.

#### Are there any risks?

None are known.

#### Recommendation

There is no convincing scientific evidence that NLP is effective for depression.

## Problem solving therapy (PST)

### Evidence rating



#### What is it?

PST is a type of psychological therapy where a person meets with a therapist and is taught to identify his/her problems clearly, think of different solutions for each problem, choose the best solution, develop and carry out a plan, and then see if this solves the problem.

#### How is it meant to work?

When people are dealing with depression, they often feel that their problems cannot be solved because they are too difficult or all encompassing. This will sometimes lead to people either trying to ignore their problems, or resorting to unhelpful ways of trying to solve them. PST helps people to use standard problem solving techniques to break out of this deadlock and discover new effective ways of dealing with their problems.

#### Does it work?

There has been a large number of good-quality studies on PST. When the results from these studies are pooled, the findings seem to indicate that people benefit from PST, although there are many differences between the specific studies. More research is needed to work out what causes these differences.

#### Are there any risks?

None are known.

#### Recommendation

PST is an effective treatment for depression. It includes some parts of the well-established cognitive behaviour therapy treatment for depression (see page 17).

## Psychodynamic psychotherapy

### Evidence rating



#### What is it?

Psychodynamic psychotherapy focuses on discovering how the unconscious patterns in people's minds (e.g. thoughts and feelings of which they are not aware) might play a role in their problems. Short-term psychodynamic psychotherapy usually takes less than a year (often about 20-30 weeks), while long-term psychodynamic psychotherapy can take more than a year, sometimes many years. Long-term psychodynamic psychotherapy is sometimes called 'psychoanalysis'. This can involve the person lying on a couch while the therapist listens to him/her talk about whatever is going through his/her mind. But more often, the person and therapist sit and talk to each other in a similar way to other types of psychological therapy.

#### How is it meant to work?

In psychodynamic therapy the therapist uses the thoughts, images and feelings that pass through the person's mind, as well as their relationship with the person, to discover patterns that give clues about psychological conflicts of which the person is not aware, especially issues that are related to experiences early in life such as during childhood. By making the person more aware of these 'unconscious' conflicts, he/she can deal with them and resolve issues that can cause depressed moods.

#### Does it work?

There have been few good-quality studies of psychodynamic psychotherapy for depression specifically. Reviews that have pooled the results of studies on a range of mental health problems have found that both short-term and long-term psychodynamic therapy are better than no treatment and are just as effective as other standard treatments, such as cognitive behaviour therapy, for mental health problems in general (including depression). However, more studies are required before we can be confident about this conclusion for depression specifically.

#### Are there any risks?

No major risks are known. However, the long-term therapy can be expensive and time consuming. It might be important to consider whether a short-term treatment might be just as effective.

#### Recommendation

Both short- and long-term types of psychodynamic psychotherapy are effective for depression. However, some larger studies should be done so we can be more confident of this.

## **Psychoeducation**

## **Evidence rating**

## **Relationship therapy**

## **Evidence rating**



### **What is it?**

Psychoeducation involves giving people information to help them understand what depression is, what its causes are, and what to expect during recovery. Psychoeducation can be delivered via leaflets, emails or websites, or by a therapist to families, groups or individuals face-to-face. Psychoeducation is less expensive and is delivered more easily than many other psychological interventions.

### **How is it meant to work?**

By helping people to understand the problems they are dealing with, and giving them realistic expectations about recovery, psychoeducation helps people to play an active role in their own recovery. Psychoeducation can also help people to be more accepting of their problems, which sometimes helps them to recover more quickly by reducing their feelings of anxiety or hopelessness about their depression.

### **Does it work?**

A study that pooled results from a range of other studies found that psychoeducation helps to reduce symptoms of depression, and recommended it as a good starting treatment for those whose depression is not too severe. Another good-quality study found that giving psychoeducation to the families of people with depression helps to prevent depression from returning.

### **Are there any risks?**

None are known.

### **Recommendation**

There is some evidence that psychoeducation may be a helpful first-line treatment for those whose depression is not too severe. It is important to check-up on people receiving psychoeducation so that more active treatments can be used if they are not improving or are getting worse.

### **What is it?**

Relationship therapy focuses on helping a person who is depressed by improving their relationship with their partner. Both members of the couple come for a series of psychological therapy sessions over a period of eight to 24 weeks. A person does not have to be married to use this approach, but needs to be in a long-term relationship.

### **How is it meant to work?**

Relationship therapy for depression has two main aims. The first is to reduce negative interactions between partners, such as arguments, criticisms and abuse. The second aim is to increase supportive ones, such as praise, empathy, forgiveness and problem solving. It focuses on changing behaviour, assuming that if the couple's behaviour changes in a positive way, then their satisfaction with their relationship will improve, as well as the mood of the partner who is depressed.

### **Does it work?**

There are a number of well-designed studies on relationship therapy. Relationship therapy is much better than no treatment, and is about as effective as well-established treatments. Some studies have shown that relationship therapy is most effective for depression when the couple is having relationship problems. This is true of many, but not all, couples where one person is depressed.

### **Are there any risks?**

None are known.

### **Recommendation**

Relationship therapy is effective for depression, which is probably best used when there are relationship problems along with depression.

## Reminiscence therapy

### Evidence rating



For older adults

For other age groups

### What is it?

Reminiscence therapy has been used mainly with older people with depression. It involves encouraging people to remember and review memories of past events in their lives. Reminiscence therapy can be used in groups where people are encouraged to share memories with others. It can also be used in a more structured way, sometimes called 'life review'. This involves focusing on resolving conflicts and regrets linked with past experiences. The person can take a new perspective or use strategies to cope with thoughts about these events.

## Supportive therapy

### Evidence rating



### What is it?

Supportive therapy aims to help a person to function better by providing personal support. It is usually provided over a long period, sometimes years. In general, the therapist does not ask the person to change, but acts as a support, allowing the person to reflect on his/her life situation in a setting where he/she is accepted.

### How is it meant to work?

Supportive therapists believe that for some people with long-term problems the most helpful approach is to provide them with a reliable, accepting environment. This helps them cope with the challenges of day-to-day life and is useful especially for dealing with long-term problems that are difficult to change. The relationship of support and acceptance with the person's therapist is critical to helping them to cope better, even if they cannot change many of the problems they are facing.

### Does it work?

There have been very few good-quality studies on the outcome of supportive therapy, however a study that pooled the findings from a number of studies did find that supportive therapy was effective for depression. However, it appears less effective than other treatments like cognitive behaviour therapy (CBT).

### Are there any risks?

None are known.

### Recommendation

Supportive therapy is an effective treatment for depression, but it is likely that it does not work as well as the most helpful treatments, like CBT.

### How is it meant to work?

Reminiscing might be particularly important during later life. Scientists have proposed that how you feel about your own 'life story' can strongly affect your wellbeing. Resolving conflicts and developing a feeling of gratitude for one's life are thought to help reduce feelings of despair.

### Does it work?

Reminiscence therapy has been evaluated in a number of studies. Pooling data from 20 of these studies shows that generally, reminiscence therapy is an effective treatment for older people who are depressed. It also might be a good alternative to other types of psychological therapy. It has not been evaluated in other age groups.

### Are there any risks?

None are known.

### Recommendation

Reminiscence therapy appears to be an effective approach to treating depression in older people.

# Medical interventions

## Anti-anxiety drugs

## Evidence rating



Long-term use of anti-anxiety drugs can cause dependence or addiction. Common side-effects of these drugs can include sleepiness, dizziness, headache, and in some cases, memory loss.

### What is it?

Anti-anxiety drugs are used for severe anxiety. They may also be known as 'tranquillisers'. Because depression and anxiety often occur together, anti-anxiety drugs may also be used to treat depression. These drugs are usually used together with antidepressants, rather than on their own. The most common class of anti-anxiety drugs are called benzodiazepines. Examples of these drugs include diazepam (Valium), alprazolam (Xanax), and oxazepam (Serepax).

### How is it meant to work?

Anti-anxiety drugs work on chemicals in the brain to affect the central nervous system.

### Does it work?

Studies comparing anti-anxiety drugs with placebos (dummy pills) show mixed results depending on the type of drug. Some drugs, such as Xanax, seem effective in the short term, but others, such as Valium, are no better than placebo.

Combining an antidepressant with an anti-anxiety drug has also been researched. Studies show that combining an antidepressant with an anti-anxiety drug was better in the short term (up to four weeks) than an antidepressant alone. However in the longer term (six to 12 weeks) there was no difference between the two treatments.

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## Anti-anxiety drugs (continued)

## Anti-convulsant drugs

## Evidence rating



### Are there any risks?

Long-term use of anti-anxiety drugs can cause addiction, as well as withdrawal symptoms when the medication is stopped. There can also be a range of side-effects, including sleepiness, dizziness, headache, and in some cases, memory loss.



Common side-effects include feeling dizzy, heavily sedated/sleepy, nausea, tremor, weight gain, and the risk of developing a serious rash.

### What is it?

Anti-convulsant (AC) drugs are used mainly in the treatment of epilepsy. However they are also used as a mood stabiliser, which means that they help to reduce intense changes in mood. ACs have been used mainly in bipolar disorder, as well as major depression that has not responded to other medications or psychological therapies. These drugs can be used together with another medication (e.g. an antidepressant) or on their own. These drugs can only be prescribed by a doctor.

### How is it meant to work?

Anti-convulsant drugs work by reducing excessive activity of neurons (nerve cells) in the fear circuits in the brain. It is not known exactly how they work, but the effect is to calm 'hyperactivity' in the brain.

### Does it work?

There have not been any studies comparing AC drugs to placebo (dummy) pills in people with depression. A number of studies have compared adding an AC or a placebo to antidepressant medication. The results in these studies have been mixed, with some showing no difference between the groups, some showing a benefit for adding the AC drug, and one study showing a benefit of the placebo rather than the AC. A limitation of this research is that many studies included people with disorders other than depression (e.g. bipolar disorder).

## Anti-convulsant drugs (continued)

### Are there any risks?

Common side-effects of ACs include the risk of developing a serious rash, as well as feeling dizzy, heavily sedated (sleepy), nausea, tremor (shakes) and weight gain. Different types of ACs have different side-effects. Most side-effects diminish over time.

### Recommendation

There is no research yet as to whether ACs alone can be used to treat depression. Based on the current research, it is not clear whether combining an AC drug with an antidepressant is helpful for depression.

## Antidepressant medications

## Evidence rating



For moderate to severe depression



Some antidepressants have been associated with increased suicidal thinking in young people. All antidepressants have common side-effects, such as headache, nausea, feeling drowsy, or sexual problems.

### What is it?

Antidepressants are drugs that are used to treat depression. They can only be prescribed by a doctor. There are many different types of antidepressants. The group of drugs that are used the most are called selective serotonin re-uptake inhibitors (SSRIs). Some examples of SSRIs are sertraline (Zoloft), escitalopram (Lexapro), citalopram (Cipramil), paroxetine (Aropax), fluoxetine (Prozac) and fluvoxamine (Luvox). Some of the other types of antidepressants are called tricyclic antidepressants, serotonin norepinephrine reuptake inhibitors (SNRIs), and monoamine oxidase inhibitors (MAOIs).

### How is it meant to work?

Different types of antidepressants work in slightly different ways, but they all act on chemicals in the brain related to emotions and motivation.

### Does it work?

There is a considerable amount of research that has compared antidepressants to placebos (dummy pills). This research shows that antidepressants improve depression, especially when it is of moderate or severe intensity. However, a review of studies found that for people with mild (or minor) depression, generally antidepressants were no better than the placebo. In this case, psychological treatments may be more effective. Also, the chance of people getting depression again is reduced if they continue to take antidepressants.

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## Antidepressant medications (continued)

There has been a lot of debate about giving antidepressants to children and adolescents. Research shows that one of the SSRI antidepressants may be effective in treating depression in this age group, although the effects are not as strong as those seen in adults. The most effective drug in this age group is fluoxetine. It is important that if an adolescent or young person is taking antidepressants, a doctor should check his/her progress often.

There is insufficient evidence from studies specifically in the antenatal or postnatal populations regarding the effectiveness of antidepressant medication. However there is limited evidence to suggest maintaining rather discontinuing antidepressant medication during pregnancy reduces relapse at this time.

Some antidepressants may improve depression more than others. However, the difference between them is likely to be small. Improvement does not happen right away, but can take up to four to six weeks to occur.

### Are there any risks?

All antidepressants have side-effects. Some have worse side-effects than others. SSRIs appear to have fewer side-effects than other types of antidepressants. Some common side-effects of SSRIs are mild headache, nausea, drowsiness, and sexual problems. Some of these last for only a short time.

In young people there has been a link between SSRIs and suicidal thinking/behaviour in a small number of cases. However, there may be a point at which the potential benefits are judged to outweigh the risks. Young people starting on an antidepressant should check in with their doctor regularly, especially after beginning treatment, to make sure these problems are not occurring.

In making decisions about the use of medication in the antenatal and postnatal periods, consideration should be given to the potential risks and benefits to the pregnant woman and fetus / infant (if breast feeding) versus non-treatment.

For everyone who begins taking an antidepressant, a doctor should check frequently to ascertain if they are improving and whether there are side-effects or any sign of suicidal thinking. This is especially important in the first few weeks.

### Recommendation

There is strong evidence from a large number of studies that antidepressants are effective for treating moderate to severe depression in adults.

<b>Anti-glucocorticoid (AGC) drugs</b>	<b>Evidence rating</b>	<b>Antipsychotic drugs</b>	<b>Evidence rating</b>
	?		3 thumbs up
<p> AGCs can cause a number of side-effects, including rash, fatigue, constipation, appetite changes and sleep problems.</p> <p><b>What is it?</b> AGCs are drugs that reduce the body's production of cortisol (the stress hormone). AGCs are prescribed by a doctor.</p>			
<p> Common side-effects include weight gain, dry mouth, sexual problems and movement problems in the limbs and face.</p> <p><b>What is it?</b> Antipsychotics are usually used to treat psychotic disorders, such as schizophrenia. They have also been used for bipolar disorder and for severe depression that has not responded to other treatments. They may be used alone or with antidepressants. The antipsychotic medications that are usually used in treatment are referred to as 'atypical antipsychotics' or 'second-generation antipsychotics'. These are a newer class of medication than 'traditional' or older antipsychotics.</p>			

### Are there any risks?

AGCs can cause a number of side-effects, including rash, fatigue, constipation, appetite changes and sleep problems.

### Recommendation

There is some evidence that AGCs may be helpful in the short term for people with depression. However more research is needed before the specific benefit of AGCs alone can be known.

### How is it meant to work?

Different types of antipsychotics work in different ways, but they all act on chemicals in the brain.

### Does it work?

Three studies have compared an antipsychotic medication to placebo (dummy) pills in people with severe depression. Each of these studies showed that the antipsychotic drugs were more effective in reducing depression symptoms than placebo.

A review of studies looked at whether combining an antipsychotic drug with an antidepressant was beneficial. Ten trials involving people with severe depression showed that combining an antipsychotic and antidepressant was more helpful than an antidepressant and a placebo pill.

*continued overleaf...*

## Antipsychotic drugs (continued)

### Are there any risks?

Common side-effects of antipsychotics include dry mouth, weight gain and movement problems in the limbs and face. There is also evidence from one study that long-term use of antipsychotics may potentially lead to brain shrinkage, although more research is needed to confirm this finding. Different antipsychotics may produce different side-effects. Some of these may need to be checked often.

### Recommendation

There is emerging evidence from a small number of studies that antipsychotic drugs may be effective in reducing symptoms of depression. In those with severe or long-standing depression that hasn't responded to other treatments, combining an antipsychotic drug with an antidepressant appears to be more helpful than an antidepressant alone.

## Electroconvulsive therapy (ECT)

### Evidence rating



For severe depression that hasn't responded to other treatment



ECT may cause short-term side-effects such as confusion, problems concentrating and memory loss.

### What is it?

In ECT, electrical currents are passed through the brain to cause a seizure. The treatment is given under a general anaesthetic, along with muscle relaxants. Usually a series of ECT treatments is given over the course of several weeks. ECT is used most often for very severe depression that has not responded to other treatments, or where there is a risk of death from suicide or refusal to eat or drink. ECT may also be known as 'electroshock therapy'.

### How is it meant to work?

It is not understood exactly how ECT works to treat depression, other than stimulating parts of the brain.

### Does it work?

One review of six good-quality studies of adults with severe depression compared actual ECT with simulated (sham) ECT. Actual ECT was found to be more effective in reducing depression symptoms immediately after treatment than the sham treatment. However one study that examined the effects in the longer term (six months) found no benefit of actual ECT over the sham treatment.

Another review that included more studies concluded that only about half of the 10 studies reviewed found that ECT was more effective than the simulated (sham) ECT, so more good-quality research is needed.

In a small study of adults with depression aged 60 years or older, actual ECT was shown to be better than the sham treatment. However this was based on only one poor-quality study.

## Electroconvulsive therapy (ECT) (continued)

## Lithium

## Evidence rating



For long-term depression

### Are there any risks?

There are risks associated with having a general anaesthetic. The most common side-effects of ECT are confusion and memory problems.

### Recommendation

ECT reduces symptoms in severely depressed adults immediately after treatment. However there do not appear to be any longer-term benefits of ECT.



There can be serious side-effects of toxic levels of lithium in the blood, including tremor and convulsions, and in some cases death. People who take lithium must have their blood monitored by a doctor.

### What is it?

Lithium is a drug that is used mainly to treat bipolar disorder. Because it has been found to be effective for treating bipolar depression, lithium has also been used to treat major depression.

### How is it meant to work?

It is not clear how lithium works to treat depression, other than to act on neurotransmitters (chemical messengers) in the brain.

### Does it work?

A review of eight studies compared the effectiveness of lithium to antidepressant drugs in adults with long-term depression. The results showed no difference between lithium and antidepressants.

There has been only one good-quality study comparing lithium with placebo (dummy pills). There were no differences in depression symptoms at the end of treatment between the lithium and placebo groups.

### Are there any risks?

Common side-effects of lithium include headaches, nausea, and feeling dazed. High levels of lithium in the blood can be toxic and cause more serious side-effects, including tremor and convulsions, and in some cases death. People on lithium must have their blood monitored to make sure the dose is at a safe level.

### Recommendation

A number of studies show that lithium may be as effective as antidepressant medication for people with long-standing depression. However the only study to directly compare lithium to placebo found no differences between groups.

## Oestrogen



Oestrogen may increase the risk of cancer of the uterus and breast cancer, as well as blood clots in the veins. It can also cause a number of other problems such as tender breasts and vaginal bleeding.

### What is it?

Oestrogen is a hormone that occurs naturally in a woman's body. When used as a treatment, it is usually supplied as a tablet. It is also available in a skin patch, as a cream or gel, or injected or implanted just under the skin. Oestrogen is prescribed by a doctor.

### How is it meant to work?

The amount of oestrogen in a woman's body varies. Since it drops after childbirth, it is thought that oestrogen can help treat postnatal depression by increasing the amount of the chemical serotonin in the brain.

### Does it work?

One trial compared oestrogen with a placebo in women with severe postnatal depression. The group that received oestrogen had lower depression symptom scores than the placebo group up to three months after the treatment ended. It is worth noting though that more people in the oestrogen group were also taking antidepressant drugs than in the placebo group.

### Are there any risks?

Oestrogen treatment increases the risk of cancer of the uterus and may increase the risk of breast cancer and blood clots in the veins. It can also cause a number of other problems such as tender breasts and vaginal bleeding. It is not known if oestrogen is safe in breastfeeding.

### Recommendation

More research is needed to work out whether oestrogen is an effective treatment for women with severe postnatal depression.

## Evidence rating



## Stimulant drugs

## Evidence rating



Side-effects might include headache, difficulty sleeping, a lack of appetite and nausea. Some stimulants can also be highly addictive, so there are risks of abuse or dependence in some people.

### What is it?

Stimulants help improve alertness and energy levels. These drugs are not used as a regular treatment for depression, but may be used to treat certain symptoms of depression, such as fatigue, lack of energy or poor concentration. Only a doctor can prescribe these drugs. Common types of stimulants include amphetamines, methylphenidate (Ritalin – used to treat attention deficit hyperactivity disorder) and modafinil.

### How is it meant to work?

Most stimulants work by increasing the activity of neurotransmitters (chemical messengers) in the brain. This is done in a different way to antidepressants, so the effect can be felt much more quickly.

### Does it work?

Three studies found that stimulant drugs were better than a placebo (dummy pill) in reducing depression symptom scores over a four week period. Fatigue levels also improved.

### Are there any risks?

Side-effects may include headache, difficulty sleeping, a lack of appetite and nausea. As some stimulants can be highly addictive, there are risks of abuse or dependence in some people.

### Recommendation

Stimulants may help to reduce certain symptoms of depression in the short term. However, there is no evidence of their longer-term benefits in treating depression.

## Testosterone

## Evidence rating



Side-effects can include acne and oily skin. There are also gender specific side-effects of testosterone. Use of testosterone therapy has also been associated with an increased risk of some forms of cancer.

### What is it?

Testosterone is a naturally occurring hormone found in both males and females, although levels of testosterone are much higher in males. In males, it is the main sex hormone and is involved in sex drive (or libido) as well as muscle growth, strength, energy and stamina. When used to treat depression, testosterone replacement therapy can be provided as a patch that is worn on the skin, in tablet form or via injection. To be used properly and safely, testosterone treatments should be prescribed by a doctor.

### How is it meant to work?

As symptoms of depression can include low libido and lack of energy, it has been suggested that low levels of testosterone [especially in males] may be related to depression. Support for this theory has come from studies that have found lower levels of testosterone in depressed people compared to non-depressed people.

### Does it work?

There have been at least six good-quality studies that compared testosterone to a placebo (dummy pill) in adult men with depression. In some of these studies, patients were also taking antidepressant medication, and most studies included patients with other medical conditions, such as abnormally low levels of testosterone and/or HIV. The results showed that testosterone was better than placebo in reducing symptoms of depression in the groups with low levels of testosterone, but not in those with normal levels. However, one study found no difference in depression symptoms at the end of treatment in men with already low testosterone.

### Are there any risks?

Common side-effects of testosterone can include acne and oily skin. There are also gender specific side-effects. In women, these include weight gain (mainly due to increased muscle rather than body fat) and hair growth, while males may experience hair loss or thinning. Testosterone replacement therapy has also been associated with an increased risk of cancers (including breast or gynaecological cancers in women and prostate cancer in men), however more research is needed to understand these risks.

### Recommendation

Testosterone may be helpful to men with low levels of this hormone, but more evidence is needed to support this finding. It does not appear to be effective for men with normal levels of testosterone who are depressed. There is no good-quality research on the effects of testosterone for women.

## Transcranial magnetic stimulation (TMS)

### Evidence rating



For severe depression that hasn't responded to other treatment



There is a low risk of seizure with TMS given the use of electric currents. Other side-effects on memory, attention and concentration are still being studied.

### What is it?

TMS is a type of brain stimulation. A metal coil that contains an electric current is held to the side of the head. This produces a magnetic field that stimulates parts of the brain. TMS is usually given daily. It is used mainly for people who have tried other treatments but still have depression.

### How is it meant to work?

It is not known exactly how TMS works to treat depression, other than stimulating parts of the brain.

### Does it work?

A number of studies have given adults with major depression either actual repetitive TMS or a sham (fake) treatment. The treatments were usually given daily over one to three weeks. Most of the people had severe depression and/or had not benefited from other types of treatment. A review that pooled the results of these studies found that active TMS was more effective than sham in reducing depression symptoms immediately after treatment, but not at short-term follow-up (on average, four weeks after treatment ended).

### Are there any risks?

There is a low risk of seizure with TMS given the use of electric currents. The effects of TMS on memory, attention and concentration are still being studied.

### Recommendation

TMS appears to be an effective treatment for depressed adults in the short term, but these benefits do not appear to last beyond the period of treatment.

## Vagus nerve stimulation (VNS)

### Evidence rating



VNS requires surgery to implant a device, so it is a highly invasive procedure. Voice changes are common and neck pain can also occur.

### What is it?

VNS is a type of brain stimulation. It requires surgery to insert a device (like a 'pacemaker') and wiring under the skin in the chest and neck. This sends electric signals to the vagus nerve, which is connected to the brain. VNS is used mainly for people with long-term, severe depression.

### How is it meant to work?

This is unclear, but it is thought to affect brain chemistry and blood flow to different parts of the brain.

### Does it work?

Only one high-quality study has compared actual VNS treatment to a control (sham or fake) VNS. In this study, VNS devices were implanted in adults who had experienced depression for at least two years, or had four or more episodes of depression. They were then given either 10 weeks of actual VNS or sham VNS. There was no benefit of the actual VNS treatment on depression symptoms in the short term.

### Are there any risks?

As surgery is involved in VNS, it is a highly invasive procedure. Voice changes are common, and neck pain can also occur.

### Recommendation

The available evidence suggests that VNS does not work for severe depression.

# Complementary and lifestyle interventions

5-hydroxy-L-tryptophan  
(5-HTP)

Evidence rating



Common side-effects of 5-HTP include nausea, vomiting, and diarrhoea.

## What is it?

5-HTP is an amino acid. Amino acids are building blocks of proteins. It is produced in the body from L-tryptophan and may also be purchased as a dietary supplement.

## How is it meant to work?

5-HTP is converted into serotonin, a chemical messenger in the brain. Low levels of serotonin are thought to be related to depression. 5-HTP supplements may therefore increase the amount of serotonin.

## Does it work?

Only one small study of good scientific quality has been carried out. This was in severely depressed inpatients who took a placebo (dummy pill) or up to 3g 5-HTP per day for three weeks. None of those taking placebo improved, whereas three of five who took 5-HTP improved.

## Are there any risks?

Common side-effects are nausea, vomiting, and diarrhoea. There are concerns that supplements may be linked with eosinophilia myalgia syndrome (a serious neurological disease), but this is unlikely to be a risk for 5-HTP.

## Recommendation

There is not enough good evidence to say whether 5-HTP works.

## Acupuncture

## Evidence rating

## Alcohol avoidance

## Evidence rating



### What is it?

Acupuncture is a technique of inserting fine needles into specific points on the body. The needles can be rotated manually, or have an electric current applied to them. A laser beam can also be used instead of needles. Acupuncture can be given by a medical doctor or by a Chinese medicine practitioner. The Chinese Medicine Board of Australia regulates all Australian Chinese medicine practitioners. Acupuncture is not covered by Medicare unless it is provided by a medical doctor. It may be available as an extra with private health insurance.

### How is it meant to work?

This is not clear. Traditional Chinese medicine believes it works by correcting the flow of energy in the body. Western medicine believes it may stimulate nerves, which results in the release of serotonin and norepinephrine. These are chemical messengers in the brain thought to be involved in depression.

### Does it work?

Many studies have tested acupuncture for depression. Reviews of these studies are inconsistent in their conclusions. Most studies from China show the effect on depression is not different from antidepressants. However, these studies are of low scientific quality. Only a few studies have compared acupuncture with 'sham' acupuncture. Sham acupuncture involves choosing different needle sites or only pricking the skin's surface. The results from these studies are conflicting.

### Are there any risks?

Acupuncture is not free of risk but is relatively safe when practised by an accredited professional. Soreness, minor bleeding and bruising may occur.

### Recommendation

Good-quality studies of acupuncture have found mixed results. There is not enough high-quality evidence yet to say whether acupuncture is effective for depression.

## Alcohol avoidance

## Evidence rating



In people with a drinking problem



In people without a drinking problem



Suddenly stopping or reducing alcohol use after heavy, long-term use can lead to withdrawal symptoms, which can be life threatening.

### What is it?

Alcohol avoidance means reducing or stopping drinking alcohol.

### How is it meant to work?

Alcohol is a typical depressant drug and alcohol intoxication (drunkenness) may cause temporary depressive symptoms. Changes to the brain in response to long-term, heavy drinking may lead to depression. Heavy drinking can also cause unpleasant life changes, such as job loss, which can lead to depression. For these reasons, it may be helpful to avoid drinking alcohol when depressed.

### Does it work?

Many people who enter treatment for alcohol problems are diagnosed with depression. A number of studies in these people have looked at the effect of detoxification on depression. These show a large improvement in depression after a few weeks of avoiding drinking alcohol. This means that in many people with drinking problems, alcohol was the cause of their depression.

There have been no studies of reducing alcohol in depressed people who do not have an alcohol problem.

## Alcohol avoidance (continued)

## Aromatherapy

## Evidence rating



### Are there any risks?

Suddenly stopping or reducing alcohol use after heavy, long-term use can lead to withdrawal symptoms. These can be life-threatening. Giving up alcohol altogether may also increase risk of some health problems. For example, moderate alcohol consumption may protect against heart disease.

### Recommendation

Depression in people with a drinking problem may be improved by not drinking alcohol. There is not enough evidence to say whether avoiding alcohol is helpful for depression in people without an alcohol problem.

### What is it?

Aromatherapy is the use of essential oils for healing. Essential oils are highly concentrated extracts of plants. They can be diluted in carrier oils and absorbed through the skin, or heated and vaporised into the air.

### How is it meant to work?

This is not known. Mood could be affected by the pleasant odour or by memories and emotions that are triggered by the smell. Alternatively, the oil's chemical components may have drug-like effects.

### Does it work?

Only one study has been done on aromatherapy on adults with mild depression. Adults who were given regular aromatherapy massages improved their depression. However, there was no comparison group.

### Are there any risks?

Essential oils should not be used undiluted as they can irritate the skin. Some oils may interact with conventional medicine. Some essential oils are not recommended for use during pregnancy.

### Recommendation

There is not enough good evidence to say whether aromatherapy works.

## Autogenic training

## Evidence rating

## Ayurveda

## Evidence rating



### What is it?

Autogenic training is the regular practise of simple mental exercises in body awareness. The exercises involve concentration on breathing, heartbeat, warmth and heaviness of body parts.

### How is it meant to work?

Autogenic training promotes relaxation and stress relief.

### Does it work?

One study of depressed adults compared autogenic training with psychological therapy and a group which received no treatment. The autogenic training group participants had greater improvement in their depression than the no-treatment group. However, they did not improve as much as the psychological therapy group.

### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether autogenic training works.

### What is it?

Ayurveda is the traditional healing system of India. Ayurveda translates as 'knowledge of life'. It aims to improve health by balancing the body, mind and spirit using diet, herbs, spices, meditation and exercise.

### How is it meant to work?

Ayurvedic medicines are a traditional treatment. Treatments are derived from over thousands of years of use in India. They aim to correct imbalances in the basic elements shared by living and non-living things: ether, air, water, fire and earth.

### Does it work?

There is a report that ayurvedic medicine has treated postnatal depression successfully (i.e. depression following childbirth). However, no scientific study has been carried out.

### Are there any risks?

Ayurvedic herbal medicines may interact with antidepressants.

### Recommendation

There is not enough evidence to say whether or not Ayurveda works.

## Bach Flower Remedies

### Evidence rating



#### What is it?

Bach (pronounced 'batch') Flower Remedies are a system of highly-diluted flower extracts. A popular combination of five remedies is sold as Rescue Remedy®.

#### How is it meant to work?

Bach Flower Remedies are believed to contain small amounts of the plant's life force energy, which heals emotional imbalances.

#### Does it work?

There are reports that Bach Flower Remedies have been used to treat adults and children with depression. However, no scientific study has been carried out.

#### Are there any risks?

None are known.

#### Recommendation

There is not enough good evidence to say whether Bach Flower Remedies work.

## Bibliotherapy

### Evidence rating



With a professional

#### What is it?

Bibliotherapy is a form of self help that uses books or other written material. The books provide information and homework exercises that readers work through on their own. Two self-help books for depression have been researched and are available to buy. These are *Feeling Good* and *Control Your Depression*. Other similar books that may be helpful are *Mind over Mood*, *Overcoming Depression* and *Overcoming Depression: A Five Areas Approach*.

#### How is it meant to work?

Most bibliotherapy teaches a person how to use cognitive behaviour therapy (CBT) on themselves. CBT is helpful for depression when delivered by a professional (see page 17).

#### Does it work?

There have been many studies carried out of bibliotherapy for depression. In all studies, participants were in contact with professionals. A pooling of data from 17 of these studies found that bibliotherapy reduced depression much more than no treatment.

Six studies have evaluated a specific book: *Feeling Good* by David Burns. Pooling of data from these studies also found that the book reduced depression more than no treatment. Results from four studies suggest that bibliotherapy may be as helpful as therapy from a professional.

#### Are there any risks?

There are no known risks. However, bibliotherapy may not be suitable for everyone. Some people may lack enough concentration or have poor reading skills. Most self-help books need a high level of reading ability.

#### Recommendation

Bibliotherapy appears to be helpful for depression when a professional is involved.

Borage	Evidence rating ?	Caffeine consumption or avoidance	Evidence rating
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### What is it?

Borage (*Borago officinalis* or *echium amoenum*) is a herb originating in Syria.

### How is it meant to work?

This is not known. Borage is used in traditional Iranian medicine for mood enhancement.

### Does it work?

One study of depressed adults gave groups borage extract or placebos (dummy pills) for six weeks. The borage group showed greater improvement in depression after four weeks. However, the benefit had disappeared after six weeks.

### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether borage works for depression.

### What is it?

Caffeine is a stimulant that is found in coffee, tea, cola drinks, and chocolate. Some people believe that caffeine improves mood and energy. Others say that avoiding caffeine altogether may be helpful for depression.

### How is it meant to work?

Caffeine is a central nervous system stimulant. It increases the release of several chemical messengers linked to depression. Some people may be extra sensitive to caffeine's effects, and therefore avoiding caffeine may be helpful for these people.

### Does it work?

Depressed people tend to consume more caffeine than other people. This may be because depressed people self-treat with caffeine. However, there have been no scientific studies of caffeine as a treatment for depression.

One small study has been carried out of caffeine avoidance. Depressed adults whose depression was thought to be caused by diet were involved. One group removed caffeine and refined sugar from their diet, while the other group cut out red meat and artificial sweeteners. The group which removed sugar and caffeine improved more than the other group.

### Are there any risks?

Anxiety may occur with large doses (e.g. about five cups of coffee). More severe side-effects occur at much higher doses. High doses of caffeine may increase the risk of miscarriage. Suddenly stopping caffeine consumption may cause headaches, fatigue and irritability.

### Recommendation

There is no good evidence to say whether caffeine consumption or avoidance is helpful for depression.

## Carbohydrate-rich, protein-poor meal

### Evidence rating



#### What is it?

It has been proposed that a meal rich in carbohydrates, but low in protein, lifts mood.

#### How is it meant to work?

It is thought that a meal which is almost completely carbohydrate increases the level of tryptophan in the brain. Tryptophan is a building block of serotonin, a chemical messenger believed to be involved in depression. However, for this to work, the meal must be very low in protein. Most high-carbohydrate meals contain enough protein to block this mechanism. There is also a theory that carbohydrates have a role in seasonal affective disorder (SAD, or, winter depression). People with this type of depression often crave carbohydrates. Carbohydrate meals eaten in the morning may fix problems in the body's internal rhythms caused by less sunlight in winter.

#### Does it work?

Four studies have been carried out in adults with SAD. One study compared the effects on depressed mood of eating a carbohydrate-rich but protein-poor meal with eating a protein-rich but carbohydrate-poor meal. The meals did not differ in their effects as expected. However, the results were hard to interpret due to the way the research was designed.

One small study compared three different diets over nine days in women with SAD. One group ate a carbohydrate-rich meal in the morning, another ate one in the evening, and the third group ate a protein-rich meal in the evening. The diets did not differ in their effect on depression.

Two small studies compared a specially developed carbohydrate-rich drink with a mixed carbohydrate-protein (dummy) drink. The drinks were consumed twice daily over 12 days, along with normal meals. Both drinks improved depression with no difference between them.

#### Are there any risks?

Eating a diet very low in protein would harm health in the long term.

#### Recommendation

There is not enough good evidence to say whether eating carbohydrate-rich, but protein-poor, meals works.

## Carnitine / Acetyl-l-carnitine

### Evidence rating



For dysthymia



For other types of depression

### What is it?

Carnitine is a nutrient involved in energy metabolism. It is produced in the body and is available in food such as meat and dairy products or as a supplement. Acetyl-l-carnitine (ALC) is a form of carnitine that easily enters the brain.

### How is it meant to work?

This is unknown. It could work by reducing stress hormone levels or through effects on lipids (fats) in the membranes (outer walls) of brain cells.

### Does it work?

Three studies have been carried out on ALC in people with a long-term low level of depression (known as dysthymia). Two studies in older adults found that a 3g daily dose was better than placebo (dummy pills). The other study found that a 1g daily dose was of similar benefit to an antipsychotic medication used to treat dysthymia.

### Are there any risks?

Long-term supplementation of doses up to 2g per day appears safe. Higher doses may be safe, but there is less evidence.

### Recommendation

There is some evidence on ALC to indicate that it may work for dysthymia.

## Chromium

### Evidence rating



### What is it?

Chromium is an essential trace mineral involved in carbohydrate, fat and protein metabolism. Chromium is available in food or as a supplement.

### How is it meant to work?

This is unknown. However, it could involve effects on neurotransmitters (chemical messengers in the brain) by increasing sensitivity to insulin.

### Does it work?

One study of chromium in depressed adults gave groups either chromium supplements or placebos (dummy pills) for eight weeks. Chromium did not improve depression more than the placebos.

### Are there any risks?

There are few harmful effects linked to high intakes of chromium. However, some medications may interact with chromium, especially when taken on a regular basis.

### Recommendation

There is not enough good evidence to say whether chromium works or not.

## Computer or internet treatments (self-guided)

### Evidence rating



#### What is it?

Computer or internet interventions are websites with information on depression or computerised cognitive behaviour therapy (CCBT). CCBT involves structured sessions of CBT on computers and is similar to bibliotherapy (page 41). It is usually delivered over the internet. CCBT can be used with or without support from a professional. This review covers self-guided CCBT where there is no involvement from a therapist. See page 18 for the review on therapist-supported CCBT.

Programs that are freely available on the internet include:

- MoodGYM moodgym.anu.edu.au
- Living Life to the Full [www.lltf.com](http://www.lltf.com) (a companion site to the book *Overcoming Depression and Low Mood: A Five Areas Approach*)
- Beacon [www.beacon.anu.edu.au](http://www.beacon.anu.edu.au) (a portal to internet interventions for mental health conditions).

#### How is it meant to work?

CBT is helpful for depression when delivered by a professional. Its structured nature means it is well suited to online delivery.

#### Does it work?

Several studies of self-guided CCBT for depression have been carried out. Pooling data from these studies has found a small benefit for CCBT over control groups. Self-guided CCBT is less effective than therapist-guided CCBT (see page 18). This is probably because people are more likely to stop using CCBT without a therapist motivating them to complete the program.

One study has shown that using a depression information website (Blue Pages [www.bluepages.anu.edu.au](http://www.bluepages.anu.edu.au)) reduced depression more than a control (dummy) treatment and as much as CCBT.

#### Are there any risks?

None are known.

#### Recommendation

Self-guided computer or internet interventions appear to be somewhat helpful for depression. They are not as helpful as CCBT supported by a therapist.

## Craniosacral therapy

### Evidence rating

## Distraction

### Evidence rating



#### What is it?

Craniosacral therapists apply gentle pressure to the head and back to improve the flow of spinal fluid.

#### How is it meant to work?

It is believed that moving the spinal fluid around the central nervous system improves a vital body rhythm. Improving this rhythm in the spinal fluid can heal emotional problems.

#### Does it work?

There are reports that craniosacral therapy has been used to treat people with depression. However, no scientific study has been carried out.

#### Are there any risks?

None are known.

#### Recommendation

There is not enough good evidence to say whether craniosacral therapy works.

#### What is it?

Distraction is directing attention away from depression and towards pleasant or neutral thoughts and actions.

#### How is it meant to work?

Depressed people tend to ruminate (i.e. think too much) about how they are feeling. They believe that this will lead to a greater understanding of why they are depressed and how they can get better. However, ruminating while feeling depressed may lead to more negative thinking and make depression symptoms seem an even bigger problem. Distraction may interfere with rumination and stop negative thinking. Once the depressed mood has lifted, more effective problem solving can occur.

#### Does it work?

A number of studies have been carried out on the effects of distraction on mood in people with depression. These studies have looked at whether distraction is helpful for temporarily improving depressed mood. Different distraction tasks have been used. These include thinking about and visualising neutral things (e.g. the shape of the African continent or the layout of a typical classroom), describing pictures, playing a board game, or thinking about broad social issues.

Distraction was compared with a rumination task involving focusing on "your feelings right now and why you are feeling this way". These studies usually find that rumination increases or maintains depressed mood, whereas distraction reduces depressed mood. Distraction also appears to be better than alternatives such as sitting quietly.

#### Are there any risks?

Constantly using distraction to avoid dealing with problems may not be helpful in the long term.

#### Recommendation

Distraction appears to be helpful for temporarily improving depressed mood. Other treatments are needed for more lasting improvements.

Dolphins (swimming with)	Evidence rating	Exercise	Evidence rating
	?		For adults 

### What is it?

It has been suggested that swimming with dolphins may be helpful for depression. Swimming with dolphins is usually only available through a tour operator in selected locations.

### How is it meant to work?

This is unclear. Dolphins use sonar signals to navigate, which could affect cell membranes in the brain. Alternatively, the natural setting or the enjoyment from the activity could also help to reduce depression.

### Does it work?

One study with 30 mildly depressed adults has evaluated swimming with dolphins. Half spent one hour a day swimming and playing with bottlenose dolphins for two weeks, and the other half swam and learnt about the marine ecosystem as a control. Both groups improved, however the dolphin group improved more. Other researchers have questioned these findings. They have argued that the swimming-only group would have been disappointed to miss out on interacting with dolphins and that the disappointment made them improve less.

### Are there any risks?

Swimming skills are required and there is a risk of accidental injury.

### Recommendation

There is not enough good evidence to say whether swimming with dolphins works.

### What is it?

The two main types of exercise are aerobic (exercises the heart and lungs, such as in jogging) or anaerobic (strengthens muscles, such as in weight training).

### How is it meant to work?

This is unclear, however low levels of physical activity are often linked with depression. There are a few ideas on how exercise might work, such as by:

- improving sleep patterns
- changing levels of chemicals in the brain, such as serotonin, endorphins or stress hormones
- interrupting negative thoughts that make depression worse
- increasing perceived coping ability by learning a new skill
- socialising with others, if the exercise is done in a group.

### Does it work?

A pooling of results from 25 studies looking at exercise for depression in adults found it moderately helpful. Exercise was compared with a placebo (such as social activity) or no treatment in these studies. It also seems to be as helpful as psychological therapy and antidepressants. However, the benefits may be lost if exercise is stopped. Most studies showing it was helpful used aerobic exercise (such as running or walking), for at least 30 minutes, three times a week, for at least eight weeks. However, more research is needed to work out the best type of exercise, how often and for how long it should be done, and whether it is better in a group or individually.

### Are there any risks?

People may injure themselves by exercising.

### Recommendation

There is good evidence that exercise is helpful for depression in adults. As it is not yet known which kind of exercise is best, people should choose a form they like, so that they will stick with it.

## Folate

### Evidence rating



As an addition to antidepressant medication



As a treatment on its own

#### What is it?

Folate is an essential nutrient found in a variety of foods or in dietary supplements, usually as folic acid.

#### How is it meant to work?

Depressed people often have lower levels of folate in their blood than non-depressed people. Lower folate levels are also linked with less benefit from treatment with antidepressant medication. It is not known exactly how folate works. However, it is involved in the production of serotonin, a chemical messenger in the brain that is involved in depression. It is also important in the creation of S-adenosylmethionine (see page 64), another brain chemical involved in mood. It is unclear whether folate is helpful for people with normal folate levels or only for those with low folate levels.

#### Does it work?

Four studies have been carried out of folate in addition to an antidepressant. Three studies found a benefit of taking folate over placebo (dummy pills) alongside antidepressants. One study found folate plus an antidepressant performed worse than an antidepressant alone.

Two studies have also been carried out of folate as a treatment on its own. One was in depressed older adults who also had dementia. This study did not show a benefit in taking folate. The other study in depressed older adults found folate was very helpful. However, there was no comparison group, so these results are hard to interpret. Little is known about the best dosage of folate, but between 0.8mg and 2mg folic acid per day may be suitable.

#### Are there any risks?

Folate supplements have few or no side-effects. However, high folate intake may hide vitamin B12 deficiency or interact with epilepsy medicine.

#### Recommendation

Folate may be helpful for depression when taken with antidepressants, but the evidence is not entirely consistent. There is not enough good evidence to say whether folate works as a treatment on its own.

## Ginkgo biloba

### Evidence rating



#### What is it?

Extracts from the leaves of the ginkgo biloba (maidenhair) tree are available in tablet form.

#### How is it meant to work?

Ginkgo has been shown to reduce the production of stress hormones, which may play a role in depression. Ginkgo may also improve blood flow to the brain.

#### Does it work?

One study in adults with seasonal affective disorder (SAD, or winter depression) showed no benefit from ginkgo extract.

#### Are there any risks?

None are known.

#### Recommendation

There is not enough good evidence to say whether ginkgo works for depression.

## Glutamine

### Evidence rating



#### What is it?

Glutamine is an amino acid (one of the building blocks of protein) and is found in foods high in protein. It is available as a supplement from health food shops.

#### How is it meant to work?

This is unknown. However, glutamine is a building block of two neurotransmitters (chemical messengers in the brain). It is promoted in health food shops as a 'brain food' that gives more energy and improves mood.

#### Does it work?

There are two reports of cases where glutamine was used successfully in adults and children with depression. However, no scientific study has been carried out with an untreated comparison group.

#### Are there any risks?

Glutamine supplementation of up to 14g per day appears safe. Higher doses may be safe, but there is less evidence.

#### Recommendation

There is not enough good evidence to say whether glutamine works or not.

## Homeopathy

## Evidence rating

## Humour/ humour therapy

## Evidence rating



### What is it?

Homeopathy uses very small doses of substances to stimulate self-healing. Substances are selected that produce, in a healthy person, symptoms similar to those of the illness when used undiluted. Treatments are also based on the person's symptoms rather than their diagnosis. This means that two people with the same illness may receive different treatments. Treatments are prepared by diluting substances with water and alcohol and shaking. This process is then repeated many times until there is little or none of the substance left. Homeopathic treatments are available by visiting a practitioner or buying over the counter.

### How is it meant to work?

Homeopathy is based on the principle of 'like cures like'. The diluting and shaking process is thought to have two functions – it removes any harmful effects of the substance, while the water retains the memory of the substance.

### Does it work?

One study showed a benefit of homeopathy over placebo (dummy pills), but this was a poor-quality study. One good-quality, small study compared an antidepressant with homeopathy. Both treatments improved depression, but the study did not have a comparison group which received only a placebo.

### Are there any risks?

Homeopathy is thought to be safe because of the small doses involved.

### Recommendation

There is not enough good evidence to say whether homeopathy works.

### What is it?

Humour could be used by an individual to help improve their depression, or as part of therapy provided by a professional.

### How is it meant to work?

Laughter has similar physiological effects as vigorous exercise. These include reducing stress hormones, relieving tension, and releasing endorphins into the brain. Responding to a stressful situation with humour may also help depression by causing a shift in thinking, promoting objectivity and distance from the threat or problem.

### Does it work?

One study had 33 adults listen to a short humorous tape daily for eight days. This had no effect on depression symptoms.

One study of group humour therapy has been carried out in depressed older adults. Both the humour therapy and the control condition improved depression.

Another study looked at whether a short humorous film could temporarily reduce depressed mood in depressed inpatients. It found that the humorous film was better than a neutral film in reducing depressed mood.

A fourth study trained six adults with depression in how to use humour as a coping strategy. Eight weeks of training did not improve depression. However, the study may have been too small to detect changes.

### Are there any risks?

Humour is a low-risk treatment.

### Recommendation

There is not enough good evidence to say whether using humour or humour therapy works.

## Hydrotherapy

## Evidence rating

## Inositol

## Evidence rating



### What is it?

Hydrotherapy includes hot air and steam baths or saunas, wet packings, and various kinds of warm and cold baths.

### How is it meant to work?

Hydrotherapy was a popular historical treatment for depression. It could be used for relaxation or stimulation.

### Does it work?

One study of hydrotherapy in depressed adults has been carried out. Multiple sessions of dry sauna over several weeks were compared with resting in a temperature controlled room. Neither group showed an improvement in depression.

Cold showers have also been suggested to be helpful for symptoms of depression, but no scientific studies have been carried out.

### Are there any risks?

Hydrotherapy is a low risk treatment.

### Recommendation

There is not enough good evidence to say whether hydrotherapy works or not.

### What is it?

Inositol is a compound similar to glucose. The average adult consumes about 1g daily through diet, but supplements are also available at health food shops.

### How is it meant to work?

This is unclear, however levels of inositol in cerebrospinal fluid (fluid surrounding the brain) are low in people with depression. It may work because it helps to produce substances that are involved in signals within brain cells.

### Does it work?

One small study has looked at inositol as a treatment for depression. The study involved 28 severely depressed adults (either depression or bipolar disorder) who took either 12g inositol or placebo (dummy pills) for four weeks. Inositol was found to be more helpful than placebo. The effect was seen most in females with depression.

### Are there any risks?

No serious ill effects have been reported. However, no long-term safety studies have been carried out.

### Recommendation

There is not enough good evidence to say whether inositol works for depression.

## Kampo

## Evidence rating

## Lavender

## Evidence rating



### What is it?

Kampo is Japanese herbal therapy. It was developed from traditional Chinese medicine. Kampo medicines contain combinations of herbs, fungi, minerals and insects.

### How is it meant to work?

Kampo medicines are a traditional treatment. Treatments are derived from over a thousand years of use in Japan.

### Does it work?

No studies have assessed kampo on its own as a treatment for depression. One study looked at whether it was helpful to add a herbal remedy called Rikkunshito to an antidepressant. This found that side-effects (e.g. nausea) from the antidepressant were lower in the group taking Rikkunshito. However, depression levels were the same in both groups.

### Are there any risks?

Rikkunshito may cause diarrhoea and oedema (fluid retention and swelling).

### Recommendation

There is not enough good evidence to say whether kampo works or not.

### What is it?

Lavender is a plant that is popular in herbal medicine. Essential oil extracts are obtained from the flowering tops.

### How is it meant to work?

Lavender is a traditional herbal remedy that may aid sleep and relaxation.

### Does it work?

One study in depressed adults compared lavender with an antidepressant. Groups received either lavender drops plus placebo (dummy) tablet, lavender drops plus an antidepressant, or an antidepressant plus placebo drops. Depression improved in all groups, but more so in the antidepressant groups.

### Are there any risks?

No risks are known. Lavender is thought to be the mildest of essential oils.

### Recommendation

There is not enough good evidence to say whether lavender works.

## LeShan distance healing

### Evidence rating



#### What is it?

LeShan distance healing is a meditation technique designed to help the healing of another person's medical problems. It can be done either at a distance or in the presence of the person being healed. It is a skill that can be learned by people with no experience in healing or meditation.

#### How is it meant to work?

The healer's state of mind is thought to lead to an improvement in the person's self-healing abilities.

#### Does it work?

One small study has been carried out of LeShan distance healing. Adults receiving treatment for depression were randomly divided into two groups. One group received no extra treatment. People in the other group were assigned to a stranger who performed daily distance healing for six weeks. These healers never met the participants. The study did not find a benefit from the healing.

#### Are there any risks?

None are known.

#### Recommendation

There is not enough good evidence to say whether LeShan distance healing works or not.

## Light therapy

### Evidence rating



For seasonal affective disorder



For non-seasonal depression in combination with antidepressants



For non-seasonal depression as a treatment on its own



There is a risk of mild side-effects such as nausea, headache, jumpiness and eye irritation. If the wrong type of light bulb is used, there is a risk of eye damage from infrared radiation.

#### What is it?

Light therapy is exposure of the eyes to bright light for a suitable duration, often in the morning. The light is emitted from a box or lamp which the person sits in front of. These devices can be bought over the internet. Different devices may use different parts of the light spectrum, at different intensities of illumination.

#### How is it meant to work?

Light therapy was originally used to treat seasonal affective disorder (SAD). It was thought to work by fixing disturbances in the body's internal rhythms caused by less sunlight in winter. It is less clear how it is meant to work in depression that does not vary with the seasons.

#### Does it work?

Many studies have been carried out on light therapy. These have found good evidence that light therapy is helpful for SAD. The best effect is achieved when exposure is 5,000 lux per hour [lux is a measure of illumination], for example, exposure of 10,000 lux for 30 minutes or 2,500 lux for 2 hours. Researchers have also investigated whether lower-intensity blue light is as effective as the standard bright white light. These studies

## Light therapy (continued)

are not yet conclusive. Light therapy also seems to be helpful in those with non-seasonal depression when used alongside antidepressants. Studies have shown inconsistent results when it has been used as a treatment for non-seasonal depression on its own. Five studies have found it more helpful than a placebo (e.g. dim light), but four studies did not find a benefit.

### Are there any risks?

Light therapy is safe but may produce mild side-effects such as nausea, headache, jumpiness/jitteriness and eye irritation. Incandescent lights should not be used due to the risk of eye damage from infrared radiation.

### Recommendation

Light therapy is the best available treatment for SAD. It may also be helpful for depression when used with antidepressants. It is not clear whether it is helpful for depression on its own.

## Magnesium

## Evidence rating



Side-effects of large doses of magnesium include mild stomach pain and diarrhoea. Taking an excessive amount of magnesium can be toxic and even lead to death.

### What is it?

Magnesium is a mineral present in the diet. It can also be taken as a supplement.

### How is it meant to work?

It has been suggested that some cases of depression are due to magnesium deficiency. Magnesium deficiency is common in Western diets because it is removed in food processing. Lack of magnesium can affect communication between nerve cells. It may also reduce the level of serotonin, which is a chemical messenger in the brain involved in depression.

### Does it work?

There is one study comparing magnesium supplements to an antidepressant. This was a small study with 23 older people who had diabetes and a low level of magnesium in their blood. Equal improvements were found in those given magnesium and those given an antidepressant. However, there was no comparison with placebos (dummy pills), so it is possible that the improvement might have occurred without any treatment.

### Are there any risks?

Large doses may cause mild stomach pain and diarrhoea. Excessive magnesium intake can be toxic and even lead to death.

### Recommendation

There is not enough evidence to say whether or not magnesium works.



Using marijuana heavily can increase risk of psychosis (i.e. losing contact with reality).

### What is it?

Marijuana is a mixture of dried shredded leaves, stems, seeds and flowers of the hemp plant (*Cannabis sativa*). Cannabis refers to marijuana and other preparations made from the same plant, such as hashish. The active ingredient in marijuana is the chemical THC.

### How is it meant to work?

People who use marijuana heavily are more likely to be depressed. There are different explanations for why this is the case. Depressed people might use marijuana in an attempt to self-medicate. On the other hand, heavy use of marijuana might have effects on the brain that lead to depression. Another possibility is that other factors, such as family or school problems, lead to both depression and marijuana use.

### Does it work?

Heavy users of marijuana sometimes report that they use it to help depression. However, in studies where depressed people are given either pills containing THC or placebos (dummy pills) no benefit has been found.

### Are there any risks?

Heavy marijuana use can increase risk of psychosis (losing contact with reality) and schizophrenia.

### Recommendation

There is no evidence that marijuana helps depression. Heavy use can increase the risk of developing more serious mental illnesses.

### What is it?

Massage involves the manipulation of soft body tissues using the hands or a mechanical device. Massage is often done by a trained professional, however, non-professionals can be trained to do it. One of the aims of massage is to relieve tension in the body.

### How is it meant to work?

This is not known. However, it is possible that massage reduces stress hormones or reduces the body's physiological arousal.

### Does it work?

Five studies have been carried out on massage, one with depressed children and adolescents and the other four with depressed pregnant women. The study with children and adolescents compared massage to relaxation training and found that massage produced a greater improvement in depression. The studies with pregnant women found that regular massages produced greater improvements than no treatment or relaxation training.

One study also found that massage combined with interpersonal therapy (see page 21) produced greater improvement than interpersonal therapy alone.

### Are there any risks?

None are known.

### Recommendation

There is evidence that massage works for depression in children and adolescents, and in pregnant women. However, studies are needed on its effects in other groups.

## Meditation

## Evidence rating

## Music

## Evidence rating



### What is it?

There are many different types of meditation. However, they all train people to focus their attention and awareness. Some types of meditation involve focusing attention on a word repeated silently or on the breath. An example is transcendental meditation. Others involve observing thoughts without judgment. An example is mindfulness meditation or vipassana. Although meditation is often done for spiritual or religious reasons, this is not always the case. Some meditation methods have been used within Western psychological treatments. An example is mindfulness based cognitive therapy (see page 21).

### What is it?

People can use music to change their mood. Music is also used by professional music therapists (see page 22 for music therapy).

### How is it meant to work?

Meditation may reduce anxiety and promote relaxation. Also, mindfulness meditation might help people to distance themselves from negative thoughts.

### Does it work?

One study gave depressed adults one of three types of treatment – either combined relaxation and meditation, physical exercise, or group therapy. Meditation sessions were two hours long, held over 12 weeks. All three groups improved, but there was no comparison group receiving no treatment.

Another study used a Japanese type of meditation called Naikan, which involves meditation on personal relationships. This study found that depressed people improved after they meditated for an intensive period (most of the day for seven days). However, the improvement was maintained only in those who continued to practise meditation daily. Again, the study had no comparison group.

### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether or not meditation works.

### How is it meant to work?

Music appears to affect brain systems that control emotions. This emotional effect could be due to the rhythm and melody of the music or to the personal meaning to the individual.

### Does it work?

Two studies have looked at the immediate effect of listening to music. In one study teenagers who had dysthymia (a long-term low level depression) listened to uplifting pop songs or tried to relax on their own. Even though the teenagers liked the music, it did not change their depressed mood. In the second study, young adult mothers who were depressed listened to either classical or rock music. Both types of music decreased depressed mood, but the study did not have a comparison group which did not listen to music.

Three other studies have looked at the longer-term effects of listening to music. One study, carried out in India, looked at how listening to Indian classical music before bedtime affected sleep problems in depressed adults. Listening to music over a month was compared to sleeping pills. No effect was found on depression, but music was better than sleeping pills for improving sleep. A second study compared listening to classical or modern music with listening to nature sounds or no treatment. People listened to the music for 30 minutes twice a day over a period of five weeks. Both types of music improved depression compared to no treatment. A third study compared listening to soft music for 30 minutes a day for two weeks with resting in bed for the same time. This study found more improvement in the people who listened to music, but the study was of poor scientific quality.

## Music (continued)

## Nature-assisted therapy

## Evidence rating



### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether listening to music can help depression either immediately or in the long term.

### What is it?

Nature-assisted therapy is the use of plants, natural materials, and the outdoor environment to improve health. Nature-assisted therapy covers a variety of activities. These include therapeutic horticulture (gardening and plant-related activities to improve wellbeing) and wilderness or outdoor adventure excursions.

### How is it meant to work?

This is unclear. It is thought that disconnection from the natural world can cause ill health and that reconnection can improve wellbeing.

### Does it work?

Three small studies have been carried out on nature-assisted therapy. Two studies looked at therapeutic horticulture. The program was held twice weekly in small groups over 12 weeks. An improvement in depression was found in both studies.

Another study looked at the effect of 12 walks in a Japanese healing garden in depressed older adults. The walks were structured and prompted reflection and journal writing on themes such as trust and freedom. The walks also improved depression. However, none of these studies had a comparison group of people who did not receive the treatment.

### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether nature-assisted therapy works.

## Omega-3 fatty acids (fish oil)

### Evidence rating



Contains mainly EPA



Contains mainly DHA

### What is it?

Omega-3 fatty acids are types of polyunsaturated fats. The two main types are eicosapentanoic acid (EPA) and docosahexanoic acid (DHA). EPA and DHA are found in fish oil or can be made in the body from the oil found in foods like flaxseed, walnuts and canola oil. There is some research linking lack of omega-3 in the diet to depression:

- Countries where a lot of fish is eaten tend to have lower rates of depression.
- As omega-3 consumption has reduced in the typical diet in Western countries, rates of depression have also increased.
- Lower concentrations of omega-3 have been found in the blood of depressed people.

Omega-3 supplements containing EPA and DHA are available from health food shops and pharmacies.

### How is it meant to work?

One possibility is that omega-3 affects the outer wall of brain cells, making it easier to send messages between and within brain cells. Another possibility is that omega-3 prevents inflammation in the brain, which could be a cause of depression.

### Does it work?

There have been numerous studies on omega-3 supplements as a treatment for depression. A pooling of data from 13 of these studies found that omega-3 did not lead to greater improvement than placebos (dummy pills). However, there was a lot of inconsistency in findings from study to study.

Another analysis of 15 studies found that EPA seems to be the important ingredient rather than DHA. Supplements that contained more than 60 per cent EPA were found to improve depression more than placebo. However, those with less than 60 per cent EPA had no effect. Effective doses involved 200-2,200 mg more EPA than DHA per day.

### Are there any risks?

None are known.

### Recommendation

Omega-3 supplements may work if they contain mainly EPA rather than DHA. However, more research is needed to be sure.

## Painkillers

## Evidence rating

## Pets

## Evidence rating



### What is it?

Painkillers are sold over-the-counter without prescription for the temporary relief of pain. They include aspirin, paracetamol and ibuprofen. Some people use these painkillers to help with depression.

### How is it meant to work?

This is unclear. One theory is that proteins produced during inflammation may play a role in depression. Some painkillers act to reduce inflammation.

### Does it work?

There have been no studies to assess whether painkillers on their own help depression. However, one study looked at the addition of aspirin to antidepressant treatment in people who were not responding to antidepressants alone. This study found that over 50 per cent improved. However, there was no comparison group of people who did not receive additional aspirin.

### Are there any risks?

Over-the-counter painkillers are not meant to be treatments for depression. There is always a risk in using medications for purposes for which they were not designed.

### Recommendation

There is no good evidence on whether painkillers help depression.

### What is it?

Many people report positive effects of interacting with their pets. Pets can also be used by professional therapists as part of their treatment (see animal assisted therapy, page 16)

### How is it meant to work?

Pets provide companionship and protect people from loneliness. Caring for pets can also give a person a sense of responsibility and self-respect.

### Does it work?

One study of depressed young adults gave one group regular sessions where they interacted with a puppy. Another comparison group had no pet interaction. The group that interacted with the puppy had greater improvement in their depression. However, the study was poorly done. The depressed people were not placed in the two groups on a random basis and they did not have the same level of depression at the start.

### Are there any risks?

None are known.

### Recommendation

There is not enough good evidence to say whether interacting with pets works.

## Phenylalanine

## Evidence rating

## Prayer

## Evidence rating



### What is it?

Phenylalanine is an amino acid. Amino acids are the building blocks of protein. It cannot be made in the body and must be included in the diet. Supplements are available through health food shops.

### How is it meant to work?

Phenylalanine is used by the body to make the chemical messengers norepinephrine and dopamine. These messengers are thought to be affected in depression.

### Does it work?

Several studies have tested phenylalanine as a treatment for depression and found improvements. However, they did not compare it to placebos (dummy pills). Another study compared phenylalanine to an antidepressant. People who received phenylalanine improved as much as those receiving the antidepressant. However, the study was small and there was no comparison with placebos.

### Are there any risks?

People with the rare genetic disorder phenylketonuria (PKU) should not use phenylalanine, as their bodies cannot break it down.

### Recommendation

It is unclear whether phenylalanine works for depression. Better scientific evidence is needed.

### What is it?

Prayer is a means by which believers attempt to communicate with the absolute. Prayer has traditionally been used in times of illness and is often used by people to help cope with mental health problems. People can pray for themselves or to ask for healing for another person.

### How is it meant to work?

The religious explanation of prayer is that a supreme being responds to the prayer with a miracle of healing. However, there have been non-religious explanations as well. One is that prayer is a placebo treatment in which the expectation of healing produces the benefit. Another explanation, which applies to praying for another person, is the 'non-local mind theory'. This proposes the non-separateness of human beings. Human consciousness operates beyond the physical location of the person who is praying, to have healing effects everywhere at once.

### Does it work?

Two studies have been carried out looking at the effects of praying for a person who is depressed. In the first study, 20 depressed people who were receiving psychological therapy were divided into two groups. One group was prayed for and the other was not. To overcome expectations of healing, neither group knew whether or not they were prayed for. Some symptoms of depression improved more in the group that was prayed for, but other symptoms did not.

A second study involved 20 people who were receiving counselling for depression. Again, half of them were prayed for and half were not, and they did not know whether or not they were prayed for. Both groups improved, with no difference between them.

## Prayer (continued)

Another study looked at the effects of meeting with a lay minister and praying together. People who had six weekly prayer sessions improved more than those who did not. The benefit was found to persist one month after the end of the prayer sessions. However, it is not known whether the benefit was due to meeting with someone about problems or to the prayer.

### Are there any risks?

None are known.

### Recommendation

There is not enough evidence to say whether or not prayer works for depression.

## Qigong

## Evidence rating



### What is it?

Qigong is a 3,000-year-old Chinese self-training method involving meditation, breathing exercises and body movements.

### How is it meant to work?

The traditional Chinese explanation is that qigong regulates the flow of qi (energy) throughout the body. It removes imbalances or blockages which cause emotional problems or physical symptoms. A scientific explanation is that qigong reduces the body's release of the stress hormone cortisol.

### Does it work?

One study has been carried out on depressed people aged 65 or over. One group received 16 weeks of qigong practice, while the other people took part in a newspaper reading group. The qigong group showed more improvement in depression symptoms and these benefits lasted two months after the qigong practise ended.

### Are there any risks?

None are known.

### Recommendation

There is some preliminary evidence that qigong might help depression in older people. However, more evidence is needed to confirm this. There is no evidence on whether or not it works with other age groups.

## Recreational dancing

## Evidence rating

## Reiki

## Evidence rating



### What is it?

Dancing of any type can be used to improve mood.

### How is it meant to work?

Dancing involves many elements that are thought to be beneficial for depression. These include exercise, listening to music, social interaction, enjoyable activity, artistic expression and achievement from learning new skills.

### Does it work?

One small study has compared ballroom dancing with no treatment in 22 depressed older adults. The dancing involved lessons for 45 minutes per week over eight weeks. Both the group that did ballroom dancing and the comparison group improved, with no difference between the two. However, the study may have been too small to detect any difference.

Another small study looked at the effects of dance on mood in 31 depressed people who were in hospital. This study compared participating in an upbeat group dance session with listening to the dance music or exercising on a training bike. Dancing was found to improve mood immediately afterwards, but the study did not assess longer-term effects.

### Are there any risks?

None are known.

### Recommendation

More evidence is needed to know whether dancing works for depression.

### What is it?

Reiki (pronounced 'ray-key') is a form of energy healing that originated in Japan. A session of reiki involves a practitioner lightly laying their hands or placing them a few centimetres away from parts of the person's body for three to five minutes per position. Distance reiki, where the practitioner can work without being physically present with the recipient, is available with further training.

### How is it meant to work?

There is no scientific explanation for how reiki works. Practitioners believe reiki uses life force energy present in all living things to promote self-healing. This energy is believed to flow through the practitioner's hands to the recipient.

### Does it work?

There have been two studies on reiki for depression. The first involved 45 adults with depression symptoms. It compared hands-on reiki, distance reiki and distance reiki placebo where no healing took place. Sessions were one to 1.5 hours long, once a week for six weeks. The study found that the hands-on reiki and distance reiki groups improved more than the distance reiki placebo group. These improvements were still present one year later.

The second study involved 73 adults who were receiving counselling for depression. Half received distance reiki once a week for four weeks in addition to counselling, and the rest received counselling alone. There was a trend towards greater improvement in those who received reiki. These findings need to be confirmed in further research.

### Are there any risks?

Reiki appears to be generally safe.

### Recommendation

There is not enough good evidence to say whether reiki works.

## Relaxation training

## Evidence rating

## Rhodiola rosea (golden root)

## Evidence rating



### What is it?

There are several different types of relaxation training. The most common one is progressive muscle relaxation. This teaches a person to relax voluntarily by tensing and relaxing specific groups of muscles. Another type of relaxation training involves thinking of relaxing scenes or places. Relaxation training can be learned from a professional or done as self-help. Recorded instructions are available for free on the internet or they can be bought on a CD.

### How is it meant to work?

Relaxation training is used as a treatment for anxiety. Because anxiety can lead to depression, it may reduce depression as well.

### Does it work?

Several small studies have been carried out on relaxation training. A pooling of data from five studies showed that relaxation training reduced depression more than no treatment. Data from nine studies showed that relaxation training is not as effective as psychological therapies, such as cognitive behaviour therapy.

### Are there any risks?

None are known.

### Recommendation

Relaxation training appears to work. However, it is not as effective as psychological therapies.

### What is it?

Rhodiola rosea is a plant that grows in cold regions of the world, such as the Arctic and high mountains. In some parts of the world, it has been used as a traditional remedy to cope with stress. Extracts of the plant have been marketed under the brand 'Arctic Root'.

### How is it meant to work?

This is a traditional remedy that is supposed to increase the body's resistance to stress. However, the mechanism by which it might work is not understood.

### Does it work?

One study has been reported comparing extracts of rhodiola rosea with placebo (dummy pills). Adults with depression were either given a higher dose (680 mg/day), a lower dose (340 mg/day) or a placebo over six weeks. Both groups receiving rhodiola rosea showed greater improvements than the placebo group. The lower dose was as effective as the higher one.

### Are there any risks?

None are known. The study above reported no side-effects.

### Recommendation

While the initial evidence looks promising, more studies are needed to confirm that it works.

## Saffron

### Evidence rating



#### What is it?

Saffron is the world's most expensive spice, made from the stigma of the flower of the plant *Crocus sativus*. Saffron is used to treat depression in Persian traditional medicine. Both the stigma and the petal (which is much cheaper) have been used for the treatment of depression.

#### How is it meant to work?

This is not clear. However, it has been proposed that two of the components of saffron, crocin and safranal, affect the levels in the brain of the chemical messengers dopamine, norepinephrine and serotonin. These chemical messengers are thought to be affected in depression.

#### Does it work?

Two studies have found that saffron stigma or petals reduce depression more than placebos (dummy pills). There are also three studies comparing saffron with antidepressants. These studies found no difference in effectiveness between the two.

#### Are there any risks?

None are known.

#### Recommendation

Saffron appears to work, but more needs to be known about the doses required.

## SAMe (*s*-adenosylmethionine)

### Evidence rating



People who are using antidepressant medication or who have bipolar disorder should not use SAMe unless under the supervision of a doctor/health practitioner.

#### What is it?

SAMe (pronounced 'sammy') is a compound that is made in the body and is involved in many biochemical reactions. SAMe supplements are available from some health food shops and pharmacies. However, these supplements are expensive.

#### How is it meant to work?

SAMe is thought to affect the outer walls of brain cells, making cells better able to communicate with each other. It may also be involved in the production of chemical messengers in the brain that are thought to be affected in depression.

#### Does it work?

A pooling of the results from 28 studies with adults found that SAMe improved depression more than placebos (dummy pills). There was also no difference in the effectiveness of SAMe compared to antidepressants. However, the studies of SAMe have problems in scientific quality and longer-term effects have not been studied.

#### Are there any risks?

The Australian Therapeutic Goods Administration has warned that people who are using prescription antidepressants or experience bipolar disorder should not use SAMe unless under the supervision of a health practitioner.

#### Recommendation

SAMe appears to work in adults. However, large studies are needed to find out the best dose and to assess its longer-term effects.

## Schisandra

### Evidence rating



#### What is it?

Schisandra (*Schisandra chinensis*) is a berry originating in Siberia and China. A tincture (liquid extract) is made from the dried seeds.

#### How is it meant to work?

Schisandra is thought to stimulate the nervous system and to increase endurance and mental performance.

#### Does it work?

A number of studies were carried out in the former Soviet Union using schisandra as a treatment for depression. While positive effects were reported, the scientific quality of the studies was poor. For example, there were no comparison groups of people who did not receive treatment. Also, the way depression was diagnosed in these studies did not meet modern standards.

#### Are there any risks?

None are known.

#### Recommendation

There is not enough good evidence to say whether schisandra works.

## Selenium

### Evidence rating



Selenium can be toxic in high doses.

#### What is it?

Selenium is a mineral naturally present in the diet. Wholegrains and meats are both particularly good sources. Selenium is also available as a supplement.

#### How is it meant to work?

It has been proposed that a lack of selenium in the diet can lead to anxiety and depression. There is some evidence that people who are depressed have a lower concentration of selenium in their blood.

#### Does it work?

One small study has been carried out with depressed older people. They were given either selenium supplements or a placebo (dummy pill). Unfortunately, the number of participants in the study was too small to give any clear results.

#### Are there any risks?

In high doses, selenium can be toxic.

#### Recommendation

There is no good evidence on whether selenium supplements work.

## Sleep deprivation

### Evidence rating



For short-term mood improvement



As a long-term treatment for depression



People with a history of epilepsy should not use sleep deprivation, because it can lead to a seizure. In people with bipolar disorder, it may also lead to mania.

### What is it?

Sleep deprivation can be either total or partial:

- Total sleep deprivation involves staying awake for one whole night and the following day, without napping.
- Partial sleep deprivation involves sleeping during either the early or later part of the night, and staying awake for the other part.

### How is it meant to work?

This is not understood. One theory is that sleep deprivation normalises the functioning of the limbic system. This is a part of the brain important to emotion. Another theory is that sleep deprivation affects the neurotransmitter (chemical messenger) serotonin, which is thought to play a role in depression.

### Does it work?

Many studies have been done on total sleep deprivation. These show that 40 to 60 per cent of depressed people improve. The effects are variable, with some people showing major improvement and a minority worsening. The effect is delayed in some individuals, who improve only following sleep the next day. The evidence on partial sleep deprivation is less clear. However, it may be as effective as total sleep deprivation. Although the effect of sleep deprivation is rapid, typically the benefit does not last. More than 80 per cent of people who improve become depressed again after their next sleep.

### Are there any risks?

Sleep deprivation should not be used by people with a history of epilepsy, because it can lead to a seizure. It can also produce mania in some people with bipolar disorder.

### Recommendation

Sleep deprivation produces rapid improvement in many people. However, generally the effect does not last. More than 80 per cent of people who improve become depressed again after their next sleep.

## Smoking cigarettes



Smoking is a major risk factor for a range of chronic physical diseases, including stroke, heart disease and cancer. These physical diseases in turn increase the risk for depression.

### What is it?

People who are depressed are more likely to smoke cigarettes. One explanation for this is that they smoke to relieve symptoms of depression.

### How is it meant to work?

The nicotine in cigarettes might have an antidepressant effect. Nicotine increases the level of the neurotransmitter (chemical messenger) serotonin, like many antidepressants.

### Does it work?

It is likely that nicotine does have an antidepressant effect. There are a number of small studies looking at the effects of nicotine patches on depressed non-smokers. These studies find a short-term improvement in depressive symptoms. While there is a short-term benefit, the longer-term effects are not clear.

### Are there any risks?

Smoking is a major risk factor for a number of serious medical diseases, including stroke, heart disease and various cancers. These physical diseases also increase the risk for depression.

### Recommendation

Smoking may improve depressive symptoms in the short term. However, in the long term it increases risk of a range of physical diseases that can in turn lead to depression.

## Evidence rating



## St John's wort

## Evidence rating



For mild to moderate depression



For severe depression

St John's wort interacts with a number of prescription medications (see overleaf), either affecting how these medications work or leading to serious side-effects. People who are taking other medications should check with their doctor first before using St John's wort.

### What is it?

St John's wort (*Hypericum perforatum*) is a small flowering plant which has been used as a traditional herbal remedy for depression. The plant gets its name because it flowers around the feast day of St John the Baptist. In Australia, St John's wort extracts are widely available in health food shops and supermarkets. However, in some other countries St John's wort extracts are available only with a prescription.

### How is it meant to work?

The most important active compounds in St John's wort are believed to be hypericin and hyperforin, but other compounds may also play a role. How it works is not entirely clear. However, it might increase the supply of certain neurotransmitters (chemical messengers) in the brain that are thought to be affected in depression. These are serotonin, norepinephrine and dopamine.

### Does it work?

Quite a lot of research has been carried out on St John's wort as a treatment for depression. Researchers have pooled together the results of all these studies to get a clearer idea of its effects. St John's wort has been found to produce more benefit than placebos (dummy pills) and as much benefit as antidepressant medications.

*continued overleaf...*

## St John's wort (continued)

## Sugar avoidance

## Evidence rating



However, the findings across studies are not always consistent. Some large studies have found no benefit at all. The benefits seem to be greater for mild to moderate depression than for more severe depression. The effects might also vary with the type of preparation and dose used. Daily doses in the studies have ranged from 240 mg to 1800 mg.

### Are there any risks?

When taken alone, St John's wort has fewer side-effects than antidepressant medications. However, St John's wort interacts with many prescription medications, either affecting how these medications work or producing serious side-effects.

The Therapeutic Goods Administration says people taking any of the following medications should not start using St John's wort:

- HIV protease inhibitors (indinavir, nelfinavir, ritonavir, saquinavir)
- HIV non-nucleoside reverse transcriptase inhibitors (efavirenz, nevirapine, delavirdine)
- Cyclosporin, tacrolimus
- Warfarin
- Digoxin
- Theophylline
- Anticonvulsants (carbamazepine, phenobarbitone, phenytoin)
- Oral contraceptives
- SSRI antidepressants and related drugs (citalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, nefazodone)
- Triptans (sumatriptan, naratriptan, rizatriptan, zolmitriptan)
- Anyone who is taking any other medications and wishes to use St John's wort is advised to check with their doctor first.

### Recommendation

St John's wort appears to be helpful for mild to moderate depression. However, it should be used with caution in anyone taking prescribed medications, because of the risk of drug interactions.

### What is it?

Eating refined sugar can provide a temporary increase in energy level and an improvement in mood. However, the longer-term effect is a decline in energy.

### How is it meant to work?

Some people are thought to be overly sensitive to sugar. Taking it out of the diet of these individuals may reduce symptoms of fatigue, moodiness, depression, excessive sleep, irritability, tenseness and headaches.

### Does it work?

A small study has been carried out with adults who were selected because their depression showed signs that it might be related to their diet. These people were treated either by removing sugar and caffeine from their diet or removing red meat and artificial sweeteners. Removing red meat and artificial sweeteners was used as a comparison and was not expected to work. After three weeks, the sugar and caffeine group improved more than the other group. This improvement was maintained three months later in those who had responded to the treatment. Later testing indicated that some of these people were sensitive to sugar.

### Are there any risks?

None are known.

### Recommendation

While there is some promising evidence that sugar avoidance might help a minority of depressed people, further research is needed to confirm that this treatment works.

## Tai chi

### Evidence rating



#### What is it?

Tai chi is a type of moving meditation that originated in China as a martial art. It involves slow purposeful movements and focused breathing and attention.

#### How is it meant to work?

In traditional Chinese medicine, Tai chi is thought to benefit health through the effects of the particular hand and foot movements on important acupuncture points and body channels. Tai chi could also help depression because it is a type of moderate exercise or because it is a relaxing distraction from anxiety and stress.

#### Does it work?

Two studies have been carried out with depressed older people. One study compared weekly Tai chi classes to health education classes over 10 weeks. Both groups also took an antidepressant. Depression improved in both groups, but the Tai chi group showed slightly more improvement.

Another small study compared three months of Tai chi with no treatment. This study found greater reduction in depression symptoms in those who did Tai chi.

#### Are there any risks?

None are known.

#### Recommendation

Although there is some promising evidence, more research is needed to say whether or not Tai chi works.

## Traditional Chinese herbal medicine

### Evidence rating



Free and Easy Wanderer Plus



Other Chinese herbal medicines



Chinese herbs may interact with Western medicines, such as warfarin, and some should not be used during pregnancy. Some Chinese herbs may be toxic.

#### What is it?

Chinese herbal medicine uses combinations of herbs, minerals, and animal products to treat disease. Combinations of herbs are usually tailored to individuals but there are some common herbs and combinations used to treat depression. Two of these are Free and Easy Wanderer Plus and Chaihu-Shugan-San. The Chinese Medicine Board of Australia regulates all Australian Chinese medicine practitioners.

#### How is it meant to work?

Treatments are based on clinical experience from over thousands of years of use in China. Chinese herbal medicine follows a different system of how to understand and treat disease compared to Western medicine. Herbs are chosen based on their taste (sweet, spicy, bitter, sour, salty), temperature, and which meridian they are thought to enter. Meridians are channels in the body through which energy flows.

#### Does it work?

Free and Easy Wanderer Plus (FEWP) is a Chinese herbal preparation that includes eight herbs. Fourteen studies have looked at its effectiveness for depression. Three studies found it was more effective than placebo, and four studies found it was as helpful as an antidepressant. It was also more effective when combined with an antidepressant compared to taking an antidepressant alone. All studies were carried out in China.

*continued overleaf...*

## Traditional Chinese herbal medicine (continued)

Ten studies have been carried out on a Chinese herbal formula called Chaihu-Shugan-San (CSS). CSS is made from seven herbs and is thought to help depression caused by energy stuck in the liver. These studies found that CSS plus an antidepressant was more effective than an antidepressant alone. CSS was also more effective compared to an antidepressant alone. No studies compared CSS to a placebo. However, all of the studies were low in scientific quality, which limits conclusions about the benefits of CSS.

### Are there any risks?

Generally, Chinese herbs are safe when prescribed by a knowledgeable Chinese medical practitioner. Chinese herbs may interact with Western medicines, such as warfarin, and some should not be used during pregnancy. There are some Chinese herbs that are toxic but most of these are not used in Western countries.

### Recommendation

There is promising evidence for Free and Easy Wanderer Plus. More high-quality studies are needed to confirm its effectiveness when used in Australia. There is not enough good evidence to say whether other Chinese medicines work.

## Tyrosine

## Evidence rating



### What is it?

Tyrosine is an amino acid, one of the building blocks of protein. It is found in food, but can also be taken as a supplement.

### How is it meant to work?

Tyrosine is used by the body to make some neurotransmitters (chemical messengers) in the brain. One of these neurotransmitters is norepinephrine, which is thought to be decreased in people who are depressed.

### Does it work?

Two studies have compared tyrosine supplements with placebos (dummy pills) in people who are depressed. Neither study found any benefit.

### Are there any risks?

None are known.

### Recommendation

Tyrosine is not effective as a treatment for depression.

## Vitamin B<sub>6</sub>

### Evidence rating



Very high doses (above 100mg per day) of vitamin B<sub>6</sub> can produce painful nerve damage.

#### What is it?

Vitamin B<sub>6</sub> plays an important role in many processes in the body, including the brain. This vitamin is widely available in food, but can also be taken as a supplement.

#### How is it meant to work?

Vitamin B<sub>6</sub> is involved in the production of several neurotransmitters (chemical messengers) in the brain. Some of these, such as serotonin and norepinephrine, are thought to be involved in depression. It is also known that vitamin B<sub>6</sub> deficiency can result in depression. This led to interest in its use as a treatment, even in people who do not have a deficiency.

#### Does it work?

There have been four studies comparing vitamin B<sub>6</sub> with placebo (dummy pills) or no treatment. Overall, there was no consistent benefit of the treatment. However, some positive effects were found in two of the studies which involved women whose depression was related to hormones. One of these studies was with women who had pre-menstrual syndrome and the other with depressed women taking oral contraceptives.

#### Are there any risks?

Very high doses of vitamin B<sub>6</sub> can produce painful nerve damage. Doses above 100mg per day increase this risk.

#### Recommendation

Vitamin B<sub>6</sub> does not appear to work for depression in general. However, there is some promising evidence that it might help women whose depression is hormone related.

## Vitamin B<sub>12</sub>

### Evidence rating



High doses of vitamin B<sub>12</sub> can have side-effects, including skin problems and diarrhoea.

#### What is it?

Vitamin B<sub>12</sub> is important to the functioning of many processes in the body, including the brain. Meat, milk and eggs are important sources of vitamin B<sub>12</sub>. Supplements are also available.

#### How is it meant to work?

Vitamin B<sub>12</sub> deficiency can lead to depression. This has led to its use to treat depressed people who have a deficiency. However, even in people without a deficiency, vitamin B<sub>12</sub> lowers the level of homocysteine in the blood. Homocysteine is a naturally occurring protein that may increase risk of depression and heart disease.

#### Does it work?

One study has compared vitamin B<sub>12</sub> supplements with placebos (dummy pills) in the treatment of seasonal affective disorder (winter depression). No benefit was found.

#### Are there any risks?

High doses of vitamin B<sub>12</sub> can cause side-effects, such as skin problems and diarrhoea.

#### Recommendation

The limited evidence available does not show an effect of vitamin B<sub>12</sub> supplements on winter depression. There is no evidence on whether they work for other types of depression.



Large doses of vitamin D can be toxic and lead to impaired kidney functioning.

### What is it?

Vitamin D is essential to certain bodily functions, particularly the growth and maintenance of bones. Few foods contain vitamin D. It is mainly made in the body by the action of sunlight on skin. It is also possible to buy vitamin D supplements. Vitamin D has been used as a treatment for seasonal affective disorder (winter depression).

### How is it meant to work?

Levels of vitamin D decrease in winter due to reduced sunlight exposure. It is therefore possible that lack of vitamin D can cause winter depression and that supplements may help treat it. Studies have also suggested that low levels of vitamin D are linked with depression.

### Does it work?

One study compared a single large dose of vitamin D (100,000 IU) with one month of daily light therapy in people with winter depression. Depression was reduced in the group that received vitamin D, but not in the light therapy group.

### Are there any risks?

Large doses of vitamin D can lead to toxicity. This produces too much calcium in the blood and impaired kidney functioning.

### Recommendation

The evidence is promising that vitamin D may help winter depression, but more research is needed. There is no evidence that vitamin D helps other types of depression.

### What is it?

Yoga is an ancient part of Indian culture. Most yoga practised in Western countries is Hatha yoga. This type of yoga exercises the body and mind using physical postures, breathing techniques and meditation.

### How is it meant to work?

Yoga is thought to reduce stress and improve relaxation. It may also increase feelings of mastery from learning difficult postures or improve body image from greater bodily awareness and control.

### Does it work?

Seven small studies have looked at yoga as a treatment for depression. These used a variety of types of yoga. Overall, the results were positive. Yoga produced more improvement than no treatment and it was as effective as medical treatments. However, the studies were not well designed, making it difficult to come to firm conclusions.

### Are there any risks?

To reduce the risk of injury, yoga should be practised in a class with a qualified instructor.

### Recommendation

Yoga is a promising treatment for depression, but more good-quality research is needed.

## Young tissue extract

## Evidence rating

## Zinc

## Evidence rating



Taken alone



In combination with an antidepressant

### What is it?

Young tissue extract (YTE) is extracted from fertilised, partially incubated hen eggs. It is formed into a powder and sold as a supplement.

### How is it meant to work?

It is thought that YTE might improve the body's ability to cope with stress.

### Does it work?

One small study showed that 1680mg of YTE daily for 12 weeks was more effective than a placebo (dummy pills).

### Are there any risks?

No risks were reported in the above study.

### Recommendation

There is not enough good evidence to say whether young tissue extract works.



Taking zinc at a higher than recommended dose (40mg a day for adults) can be toxic.

### What is it?

Zinc is a mineral found in many foods, and is essential for life. It can also be taken as a supplement.

### How is it meant to work?

Some research has found that the level of zinc in the blood is lower in people who are depressed. Lower levels of zinc can affect the neurotransmitter (chemical messenger) serotonin in the brain. Serotonin plays an important role in depression.

### Does it work?

Two small studies have looked at the effects of zinc in addition to treatment with antidepressants. Both studies compared zinc supplements (25mg of Zn<sup>2+</sup> once daily) with placebos for 12 weeks. Depression was reduced more in those taking zinc supplements than placebos in both studies. The effect was greatest in those who had not improved much with previous antidepressant treatment. No studies have been done looking at zinc alone as a treatment.

### Are there any risks?

Taking zinc at higher than recommended doses can be toxic. The recommended upper limit for adults is 40mg a day (NHMRC Nutrient Reference Values for Australia and New Zealand).

### Recommendation

Zinc appears to work when taken with an antidepressant, but more good-quality research is needed. There is no evidence that it is helpful on its own.

# Interventions that are not routinely available

## Ketamine

## Evidence rating



For severe depression that hasn't responded to other treatments



Serious side-effects, including death, may occur from using ketamine. This is an experimental treatment that is not available from health professionals/doctors.

### What is it?

Ketamine is used mostly as an anaesthetic in vet practices to sedate animals. It is also an illegal street drug. Ketamine is a new, experimental approach for depression. When ketamine was used for depression in the one study, very low doses were injected.

### How is it meant to work?

Ketamine affects brain chemicals that are different from those affected by antidepressant drugs. It is thought to work by blocking the brain chemical glutamate from sending its messages in the brain.

### Does it work?

Ketamine has been tested in a small number of studies with people whose depression had not responded to any other treatments. In these studies, the people who were given ketamine noticed a very quick improvement in their depression; usually within an hour or two. This is very different from the more usual antidepressants, which can take anywhere from days to weeks to work. Also, the improvement lasted at least a few weeks, even though they had only a single dose of ketamine. Ketamine did not make these people "high", but seemed to return their mood to normal.

## Ketamine (continued)

### Are there any risks?

Used under medical supervision, ketamine is relatively safe. However, side-effects can be serious. These include changes to vision or hearing, confusion, high blood pressure, feeling "high", dizziness, and increased interest in sex. Abuse of this drug can produce very serious health effects, including death.

### Recommendation

Ketamine is a promising approach to treating people whose depression has not improved with other treatments. It is not known whether it works for people who do respond to other treatments. Also, much more work is needed to explore the safety of this drug.

## Melatonin

## Evidence rating



### What is it?

Melatonin is a hormone produced by the pineal gland in the brain. It is involved in the body's sleep-wake cycle. Melatonin levels increase during night-time darkness. Melatonin is available as a dietary supplement and can be bought without a prescription.

### How is it meant to work?

The production of melatonin might be disturbed in people with depression. In particular, a problem with the timing of melatonin production might cause seasonal affective disorder (winter depression).

### Does it work?

One study compared various doses of melatonin with placebos (dummy pills) in adults with depression. It found higher levels of depression when using melatonin, but the doses were high.

Another study compared melatonin with placebo in adults with depression and sleep problems. No benefit was found to either depression or sleep.

Three studies have looked at whether melatonin works for adults with seasonal affective disorder. Two of these studies found that melatonin did not differ from placebos, but the third study did find a benefit.

### Are there any risks?

Little is known about the long-term effects of melatonin supplements on health.

### Recommendation

On current evidence, melatonin does not seem to help, and might even increase depression in high doses.

## Negative air ionisation

## Evidence rating



### What is it?

A negative air ioniser is a device that uses high voltage to electrically charge air particles. Breathing these negatively-charged particles is thought to improve depression.

### How is it meant to work?

This is not clear. However, it may affect the neurotransmitter (chemical messenger) serotonin, which is thought to be involved in depression. It may also improve how the mind processes emotional information.

### Does it work?

One study has been carried out with adults who had been depressed for a long time. They were exposed to high density negative ionisation for one hour each day for five weeks or to a placebo (low density air ionisation). Half of these people recovered compared to none who received the placebo.

Four other studies have tested negative air ionisation in people with seasonal affective disorder. Three studies found it more helpful than a placebo but one did not. However, this study may have been too short for the treatment to work. In order to work, the negative air ioniser needed to have a flow rate of at least  $4.5 \times 10^{13}$ /second.

### Are there any risks?

None are known. However, many air ionisers that are sold will not produce the required high density of ionisation.

### Recommendation

Negative air ionisation appears to work, including for seasonal affective disorder. However, the air ioniser needs to be of the right type.

### Note:

Many air ionisers that are sold will not produce the required high density of ionisation. They can also be expensive.

# Other forms of self-help not tested in people with depression

Chocolate

Evidence rating



## What is it?

Many people, including some people with depression, report craving chocolate when in a low mood and eating it to boost their mood.

## How is it meant to work?

Chocolate contains several compounds that could have antidepressant effects, such as caffeine, theobromine, tyramine, and phenylethylamine. However, the amount of these substances in chocolate is so small that it is unlikely to influence mood. Also, there are other foods with higher amounts of these substances that do not improve mood. Some people think that the carbohydrate content of chocolate boosts serotonin. Serotonin is a chemical messenger in the brain thought to be involved in depression. However, the protein content in chocolate would block this effect.

## Does it work?

Chocolate has not been tested as a treatment for depression. However, studies in non-depressed people have found only a brief positive effect on mood followed by feelings of guilt. Any mood-lifting effects are likely to be due to its uniquely appealing combination of sweetness and fat. Its pleasant taste and texture could stimulate the release of endorphins (feel-good substances that reduce pain).

## Are there any risks?

Chocolate is high in fat, sugar and kilojoules.

## Recommendation

There is no evidence that chocolate is helpful for depression.

## Drinking alcohol



Intoxication (drunkenness) may lead to violence and anti-social behaviour, and increases the risk of accidents and injury. Long-term heavy use of alcohol can have serious health consequences, such as liver disease.

### What is it?

Many people report that they drink alcohol to feel good or to relieve feelings of depression or tension.

### How is it meant to work?

Alcohol has effects on multiple areas in the brain. Positive effects on mood could be caused by its involvement with parts of the brain that control euphoria, alertness, pain relief, and reward. It also has effects on thinking that could enhance mood, such as disrupting the ability to assess situations as stressful.

### Does it work?

Drinking alcohol has not been researched as a treatment for depression. Research in non-depressed people has found that alcohol's effect on mood is complex. Small amounts can have a stimulant-like effect but large amounts act like a sedative. Drinking in groups can lead to euphoria, but drinking alone often results in depression and sedation. Its effects also depend on the drinker's expectations, whether blood alcohol concentration is rising or falling, and other factors.

### Are there any risks?

Studies in non-depressed people have shown that drinking heavily for days or weeks actually increases feelings of depression. In fact, depression in some people with alcohol problems is caused by alcohol, and recovery can occur by stopping all alcohol consumption. Intoxication (drunkenness) may lead to violence, and increases the risk of accidents and injury. Long-term heavy use can have serious health consequences, such as liver disease.

### Recommendation

Drinking alcohol cannot be recommended for depression.

## Evidence rating



## Quitting smoking

## Evidence rating



### What is it?

People who are depressed are more likely to smoke. Therefore, quitting smoking might be beneficial.

### How is it meant to work?

People who smoke are often addicted to nicotine. Nicotine deprivation motivates them to smoke the next cigarette. However, frequent nicotine deprivation is unpleasant and could contribute to depressed mood.

### Does it work?

There is no clear evidence on this. However, people who smoke and are depressed are at higher risk of more severe withdrawal when quitting. In the long term, quitting smoking helps to prevent heart disease and stroke. These diseases increase risk of depression, so quitting gives an indirect benefit to mental health.

### Are there any risks?

Quitting smoking could produce unpleasant nicotine withdrawal effects which initially might make depression worse.

### Recommendation

Quitting smoking is good for physical health and might reduce risk of depression in the long term. However, it can be more difficult for people to quit when they are depressed. For a person who is depressed, it would be best to try quitting under medical supervision. [See beyondblue's 'Depression and quitting smoking: An information booklet' at [www.beyondblue.org.au/resources](http://www.beyondblue.org.au/resources)]

# Interventions reviewed but where no evidence was found

Alexander technique	Feldenkrais
American ginseng ( <i>Panax quinquefolius</i> )	Flax seeds ( <i>linseed</i> ) ( <i>Linum usitatissimum</i> )
Ashwagandha ( <i>Withania somnifera</i> )	Fragrance or perfume
Astragalus ( <i>Astragalus membranaceous</i> )	γ-aminobutyric acid (GABA)
Balneotherapy or bath therapy	Gerson therapy
Barley avoidance	Ginger ( <i>Zingiber officinale</i> )
Basil ( <i>Ocimum spp.</i> )	Ginseng ( <i>Panax ginseng</i> )
Black cohosh ( <i>Actaea racemosa</i> or <i>Cimicifuga racemosa</i> )	Gotu kola ( <i>Centella asiatica</i> )
Brahmi ( <i>Bacopa monniera</i> )	Hawthorn ( <i>Crataegus laevigata</i> )
California poppy ( <i>Eschscholtzia californica</i> )	Hellerwork
Catnip ( <i>Nepeta cataria</i> )	Holiday or vacation
Cat's claw ( <i>Uncaria tomentose</i> )	Hops ( <i>Humulus lupulus</i> )
Chamomile ( <i>Anthemis nobilis</i> )	Hyssop ( <i>Hyssopus officinalis</i> )
Chaste tree berry ( <i>Vitex agnus castus</i> )	Kava ( <i>Piper methysticum</i> )
Chinese medicinal mushrooms ( <i>Reishi</i> or <i>Lingzhi</i> , <i>Ganoderma Lucidum</i> )	Ketogenic diet
Choline	Kinesiology
Clove ( <i>Eugenia caryophyllata</i> )	Lecithin
Coenzyme Q <sub>10</sub>	Lemon balm ( <i>Melissa officinalis</i> )
Colour therapy, chromotherapy or colorology	Lemongrass leaves ( <i>Cymbopogon citratus</i> )
Cowslip ( <i>Primula veris</i> )	Licorice ( <i>Glycyrrhiza glabra</i> )
Crystal healing or charm stone	Milk thistle ( <i>Silybum marianum</i> )
Dairy food avoidance	Mindsoothe or Mindsoothe Jnr
Damiana ( <i>Turnera diffusa</i> )	Mistletoe ( <i>Viscum album</i> )
Dandelion ( <i>Taraxacum officinale</i> )	Motherwort ( <i>Leonurus cardiaca</i> )
EMpowerplus	Multivitamins
Euphytose	Natural progesterone

Nettles ( <i>Urtica dioica</i> )	Tension Tamer tea
Oats ( <i>Avena sativa</i> )	Thyme ( <i>Thymus vulgaris</i> )
Osteopathy	Tissue salts
Para-aminobenzoic acid (PABA)	Tragerwork
Passionflower ( <i>Passiflora incarnata</i> )	Valerian ( <i>Valeriana officinalis</i> )
Peppermint ( <i>Mentha piperita</i> )	Vervain ( <i>Verbena officinalis</i> )
Pilates	Vitamin B <sub>1</sub>
Pleasant activities	Vitamin C
Potassium	Wheat avoidance
Purslane ( <i>Portulaca oleracea</i> )	Wild yam ( <i>Dioscorea villosa</i> )
Reflexology	Wood betony ( <i>Stachys officinalis or Betonica officinalis</i> )
Rehmannia ( <i>Rehmannia glutinosa</i> )	Worry Free
Rosemary ( <i>Rosmarinus officinalis</i> )	Yeast
Rye avoidance	Zizyphus ( <i>Zizyphus spinosa</i> )
Sage ( <i>Salvia officinalis</i> )	
Sedariston	
Sex to relax	
Shopping	
Siberian ginseng ( <i>Eleutherococcus senticosus</i> )	
Singing	
Skullcap ( <i>Scutellaria lateriflora</i> )	
Sleep hygiene	
Spirulina ( <i>Arthrospira platensis</i> )	
St Ignatius bean ( <i>Ignatia amara</i> )	
Suanzaorentang	
Taurine	

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## Where to find more information

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Learn more about anxiety, depression and suicide prevention, or talk through your concerns with our Support Service. Our trained mental health professionals will listen, provide information, advice and brief counselling, and point you in the right direction so you can seek further support.

📞 1300 22 4636

✉️ Email or 💬 chat to us online at [www.beyondblue.org.au/getsupport](http://www.beyondblue.org.au/getsupport)

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Head to Health can help you find free and low-cost, trusted online and phone mental health resources.



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