

Subtypes, Causes and Treatment of Depression

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Abstract. The aim of writing the paragraph is to provide a broad understanding of depression, which is a common word for nowadays teens but people seldom really understand it. This essay first introduces various types of depression, then provide information about causes that leads to depression, including genetics and biology, brain chemistry imbalance, poor nutrition, female sex hormones, stress and trauma, substance use, physical health condition and also seasonal changes. Besides, different treatments for depression are listed. For example, psychotherapy, medications or change of lifestyle. It provides a complicated map of depression. However, there are still areas left to be discovered, hope the key brain pathways for causing depression will provide more explanation about the cause of depression.

Keywords: Depression; Sub-types; Causes; Treatments.

1. Introduction

Have you ever been depressed for a long time and unable to snap out, or have you ever lost control of your emotions and just felt blue for no reason? It's normal to feel down from time to time, but if you're in a sad mood most of the time and its affect on your daily life cannot be easily ignored, then you may get the clinical depression. As a whole, depression includes endogenous depression and exogenous depression. It could be inferred from its name that one is caused by the person himself, the other is caused by the external environment. However, although depression is now widely mentioned, few people really understand the causes and treatment of this disease. This article will focus on the discussion of depression, discussing the sub-classification, causes and interventions of depression. To provide people with a more comprehensive science of depression. There are several common symptoms of depression illustrated in Fig. 1 (Bolbot, 2018), which usually include sadness, isolation, no energy, fatigue, anger, sleep problem, trouble in concentrating or making decisions, no appetite, alcohol and drug abuse, guilt, thoughts of death, etc.



Fig 1. Common symptoms of depression(Bolbot, 2018)

Illnesses of the mind-brain exert a negative effect on tens of millions of people in the USA. Up to now, depression is the most prevalent disease which accounts for 99% of all mind-brain diseases (the remaining 1% includes Schizophrenia and major psychosis) (Keeper, 2021). In the past year, 8.4% of American adults have experienced at least one major depressive episode, defined as a depressive mood or loss of interest of daily activities lasting for two weeks or more. This percentage is higher for females (10.5%), multiracial people (15.9%) and people aged 18 to 25 (17%)(NIH, 2022).

2. Subtypes of Depression

To begin with, it is important to understand the types of depression. As to different types of depression, it can usually be divided into seven certain types according to the corresponding special symptoms, despite some common symptoms shared by all types of depression showed in Fig. 1

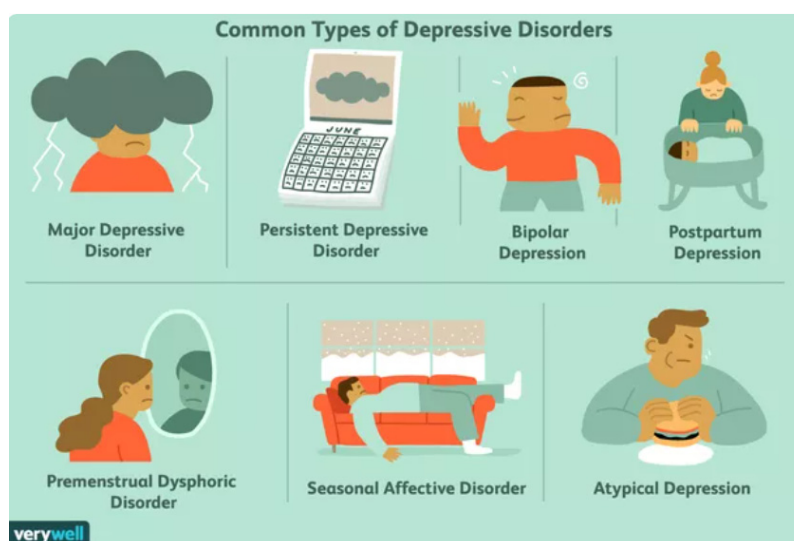


Fig 2. The typical seven types of depression(Schimelpfening, 2021)

Major Depressive Disorder (MDD): it is known as the most prevalent type of depression, also ranked as the third cause of worldwide disease by WHO in 2008 (Navneet, 2022). When you hear the term clinical depression, it is generally referring to MDD, as suggested by its name. MDD is a mood disorder with common symptoms illustrated in Fig. 1.

Persistent Depressive Disorder (PDD): PDD is ranked as the second type of depression, which means the depression have lasted for 2 years or longer and the long time can be the evident symptom for this type of depression(Cleveland Clinic, 2022). In addition, the term PDD also refers to two conditions previously known as dysthymia (low-grade persistent depression) and chronic major depression.

Bipolar depression: Bipolar depression (formerly known as manic-depressive illness or manic depression) is a lifelong mood disorder and mental health condition that gives rise to frequent shifts in mood, level of energy, thinking patterns and behavior. Typically, these shifts can last for hours, days, weeks or months, interfering your ability to deal with daily tasks. The significant fluctuations in mood of bipolar depression can be further divided into following two types: hypomanic/manic (mania bears more severity than hypomania and leads to more noticeable problems) and depressive episodes(Bruce, 2019). Nevertheless, people with bipolar disorder can also have the temporary feelings of normal mood, known as euthymia. Differing from the common symptoms of depression, hypomanic/manic and depressive episodes have their own obvious ones. For the hypomanic/manic, people with this disorder may show following typical states: abnormally increased activity, energy or agitation, sleep less, exaggerated sense of self-confidence (euphoria), poor-decision making like keeping buying sprees, making sexual risks or foolish investments, etc. On the contrast, the depressive episodes will result in symptoms like loss of interest or pleasure in almost all activities, feelings of

worthlessness or unreasonable guilt, thought or attempt of suicide and other opposite action(Mayo Clinic, 2021).

Postpartum depression (PPD): PPD and premenstrual dysphoric disorder (PMDD) are two typical types of depression aimed at women. For the cause of PPD, significant hormonal shifts happened during pregnancy can often exert an impact on women's moods, and this type of depression usually give a strike during pregnancy or after the birth of a child. Although currently classified as perinatal depression, PPD is more than so-called "baby blues" due to the fact that its symptoms are more severe and longer duration(John, 2019). Aside from the common ones, other special symptoms usually include: significant mood swings (like bipolar depression), social withdrawal, trouble connection with baby and even thinking about hurting yourself or your baby, etc.

Premenstrual dysphoric disorder (PMDD): The other type of depression for women, PMDD, may have a similar hormonal mechanism to PPD. It occurs a week or two before menstruation, as hormone levels begin to drop after ovulation. Compared to the more familiar premenstrual syndrome (PMS) with the symptoms like moodiness, aches, fatigue, irritability, food cravings, and breast tenderness, PMDD usually gives rise to similar ones but the symptoms linked to mood are more distinctive, such as persistent irritability or anger that seriously interrupt daily lives, feelings of sadness or despair, even thoughts or attempt of suicide, etc.(American Psychiatric Association, 2020).

Seasonal affective disorder (SAD): If you feel depressed, sleepy, and gain weight in the winter, but feel fine in the spring, you may have another type of depression called SAD, currently known as season-patterned major depressive disorder. SAD is thought to be triggered by a disturbance of the body's normal circadian rhythm(NHS choices, 2021). The length of daytime can affect this rhythm, and any seasonal change in circadian patterns will bring about disturbances accounting for such depression. The prevalence of SAD is difficult to determine since the condition often goes out of diagnose and report. Generally, this type of depression is more common in regions farther from the equator. For instance, it is estimated that SAD affects 1% of the population in Florida, while this number rises to 9% in Alaska(MacMillan, 2020).

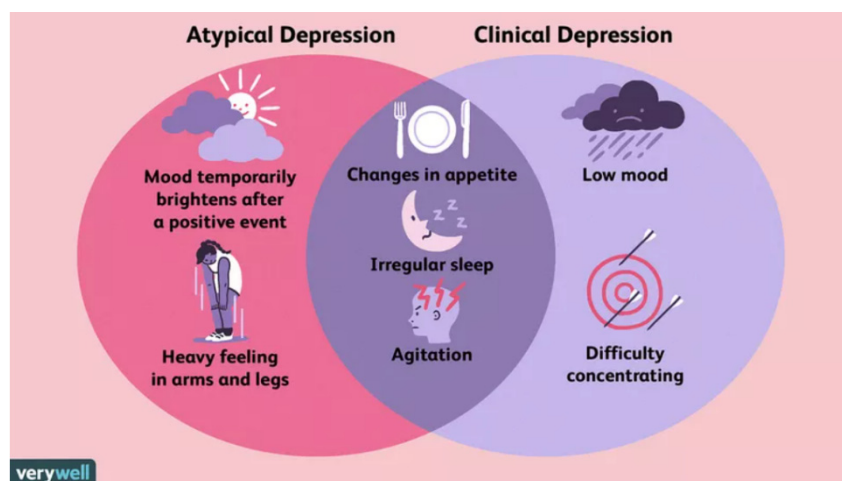


Fig 3. Differences between atypical depression and clinical depression(Schimelpfening, 2022)

Atypical depression: Last but not least, atypical depression, is actually more common than its name suggests. If you have ever experienced signs of depression (such as overeating, oversleeping, or being hypersensitive to rejection) but found yourself suddenly perking up when facing a positive event, then you may be diagnosed with atypical depression based on these symptoms. Though it also share some similar symptoms like typical(clinical) depression displayed in Fig. 3(Schimelpfening, 2022), atypical depression is characterized by a specific set of symptoms like mood temporarily brightens after a positive event, heavy feeling in arms and legs, violent sensitivity to rejection, etc.

3. Cause of Depression

Then it comes to the cause of depression, there are many factors that increase the risk of developing depressive disorders. The causes of depression are not always fully understood, and many believe this mental health condition is often the result of a combination of causes, such as the eight most common causes show in Fig. 4.

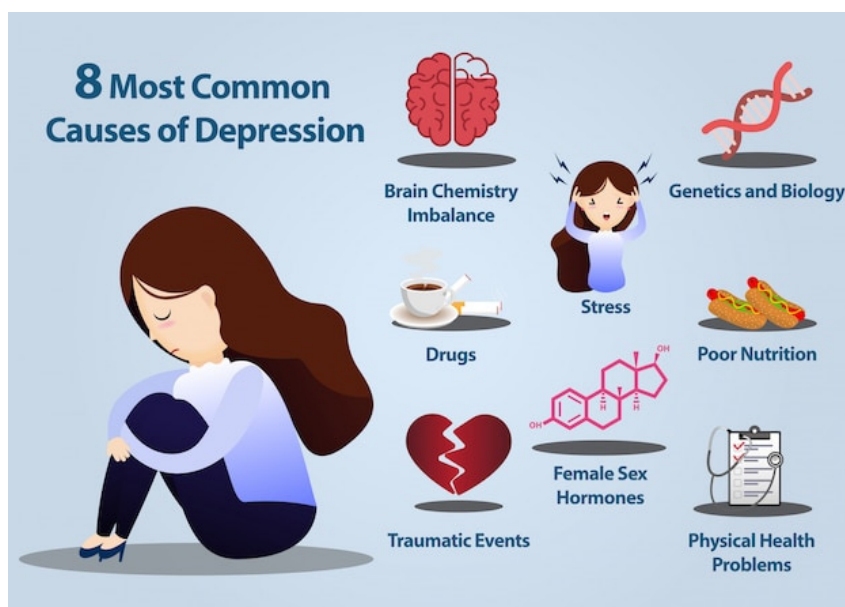


Fig 4. The eight most common causes of depression (Freepik, 2019)

Genetics and biology: You are more likely to experience depressive symptoms if other people in your family also suffer from depression or other types of mood disorders. Estimates suggest that about 40% of depression is genetically determined, and more than 80 genetic variants have been identified as close relation to depression(Lohoff, 2010). These fact manifests genetics and biology may play an important role in the development of depression.

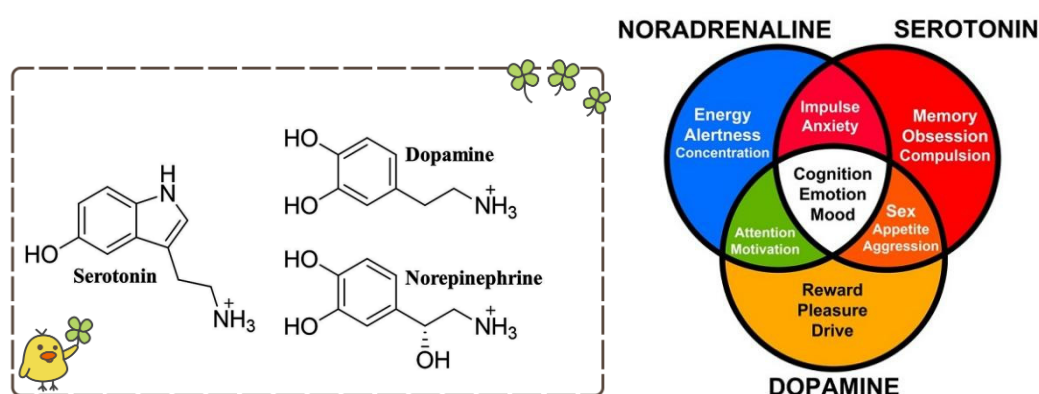


Fig 5. The three main neurotransmitters, namely, serotonin, dopamine and norepinephrine, play a key role in the regulation of various characteristics in the brain (Groleff, 2015; Shutterstock, 2019)

Brain chemistry imbalance: Apart from genetics, another potential biological contribution to depression is an imbalance of brain chemistry, neurotransmitters, involved in emotional regulation(Cafasso, 2021). And some people with depression may feel as if they are crazy, especially when the emergence of depression was not evidently triggered by a negative event. In fact, it has been estimated that about 16 million adults suffer from depression without evident trigger(Greenstein, 2018). In these people, disruption of normal levels of neurotransmitters is considered to be the right cause. As shown in Fig. 5(Groleff, 2015; Shutterstock, 2019), these neurotransmitters share somewhat

similar chemical formula, mainly including dopamine, serotonin, norepinephrine, and play an important role in regulating mood by promoting communications among different areas of the brain. When these neurotransmitters are switched to a too much or too little supply than their normal state, it can result in certain symptoms that we recognize as clinical depression.

Poor nutrition: Poor eating habits can lead to depression in a number of ways. The deficiencies of various vitamin and mineral are regarded as important contribution to depressive symptoms. It is reported that high-sugar diets are at play as well. Several studies have also found that diets with either low omega-3 fatty acids, or an unbalanced ratio of omega-6 to omega-3 fats, have connection with increased rates of depressive mood(Sara Lindberg, 2021).

Female sex hormones: In fact, women are more likely to suffer from depression than men (10.5% for women vs 6.2% for men). Due to the fact that the incidence of depression peaks in women's reproductive years, the hormonal factors are believed to be a necessary role(Palmera, 2022). Women are especially vulnerable to depression during periods of hormonal fluctuations, such as around menstrual periods, pregnancy, childbirth, perimenopause, and thyroid diseases. It is also evident that the risk of depressive disorders decreases after menopause.

Stress and trauma: The loss of a loved one, trauma, chronic stress, and major life changes (such as divorce or unemployment) can result in depression. Researchers attribute this to high levels of the hormone cortisol, which is secreted during times of stress and trauma(Vordermeier, 2022). Cortisol affects the supply levels of neurotransmitter serotonin and may invoke depression.

Substance use: Drug and alcohol use can usually lead to depression. However, even some prescription drugs have been associated to depressive disorders. Certain drugs found to be related to depression include anticonvulsants, statins, stimulants, benzodiazepines, corticosteroids, and beta-blockers (Cherry, 2021). It's indispensable to carefully review the medications you've been prescribed, and if you are inclined to depressed contact your doctor as soon.

Physical health condition: Other potential reasons for depressive disorders include the presence of a physical health condition, which often co-occurs with the illness—such as cancer, diabetes, or Parkinson's disease—or having medications with depressive mood as its side effect.

Seasonal changes: Apart from the listed eight reasons for depression in Fig. 4, the seasonal changes or circadian rhythm disturbance, is also considered as a cause. In fact, the seasonal affective disorder mentioned above is thought to be triggered by a disturbance of the body's normal circadian rhythms(Cleveland Clinic ,2021). For example, light entering the eye can affects this rhythm, which can be disrupted in the shorter days of winter when people have limited time to spend outdoors.

4. Treatments of Depression



Fig 6. The common treatments of depression (Indiamart, 2020)

Although there are many causes of disease, there also remains several treatments to cure the disease. Besides serious interference to daily lives, untreated depressive disorders are ranked as common triggers for suicide. It is reported that 45 percent of suicide deaths suffer from somewhat mental illness, including people with undiagnosed, untreated or under-treated depressive disorders (NAMI, 2020). Therefore, a proper treatment for depression is of significant importance and should be adopted as soon as possible. Although it can be very different from other disorders, depression can also be generally treatable.

In addition to some familiar but effective ways illustrated in Fig. 6, several systematic treatments have been developed to deal with depressive moods. These treatments can usually be divided into three categories: psychotherapy, medication, and lifestyle changes (Rajput, 2022). Certainly, new therapies are always on the way for less treatable depressive disorders.

Psychotherapy: Psychotherapy is a general terminology for treating mental health problems in a form of talking with a psychiatrist, psychologist, or other mental health provider, and therefore is also known as talk therapy, psychosocial therapy, counseling, or simply therapy. During the therapy, you will have a clearer understanding of your condition and your emotions, thoughts, and behaviors, which can assist you to manage challenging situations arising from depression symptoms. Many types of psychotherapy can be adopted and the choice is up to your individual situation. Some common type includes behavioral activation, interpersonal therapy, cognitive behavioral therapy, problem-solving therapy, psychodynamic therapy, social skills therapy and supportive counseling (Cherry, 2021). Many of them can be expected from their name.

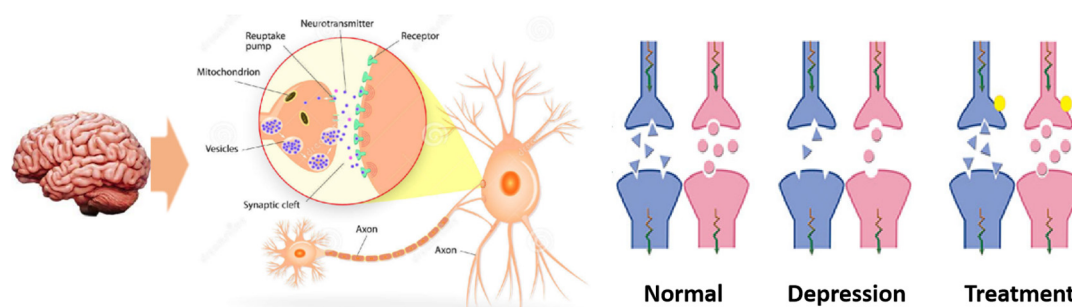


Fig 7. Structure of a typical chemical synapse with neurotransmitter releasing mechanisms (left, Halber, 2021); the role of serotonin in normal and depressed people with or without SSRIs treatment (right, Garcia-Arocena, 2022).

Medications: The second category of treatments for depression is medications, which usually means taking special drugs. There have been many medications found to be effective for the treatment of depression, especially when employed together with psychotherapy mentioned above. As to the mechanism, most drugs can restore the supply of certain neurotransmitters in the chemical synapse to the normal level, such as selective serotonin reuptake inhibitors (Von Wolff et al., 2013) (SSRIs, including Prozac (fluoxetine), Paxil (paroxetine), and Zoloft (sertraline), etc.) demonstrated in Fig. 7 (Halber, 2021; Garcia-Arocena, 2022). Other medications commonly prescribed are atypical antidepressants (including Wellbutrin (bupropion), Remeron (mirtazapine), etc.), tricyclic antidepressants (TCAs, including Elavil (amitriptyline), Tofranil (imipramine), Pamelor (nortriptyline), etc.) (Schimelpfening, 2020)

Lifestyle changes: Last but not least, lifestyle changes can also do a good favor to the alleviation of depression, including healthy diet, proper exercise and stress management. You can always find right ways to improve the three aspects in your daily lives, with some of them listed in Fig. 6 (Indiamart, 2020).

Depression is not a fully explored area. As to the future study of depression, recent research on depressive disorders has sparked hopes of significant progress against these age-old problems. By the rapidly developing Genetic technology, the complex interactions between our DNA and the environment in producing depression are on the right way to be revealed (Gholizadeh & Khodadadi,

2021). The Neuroimaging studies showed in Fig. 8 also have started to continuously identify key brain pathways that maybe associated with depressive mood(Lee, 2021). Based on these new findings, drugs with new mechanism and better curative effect are being developed and tested.

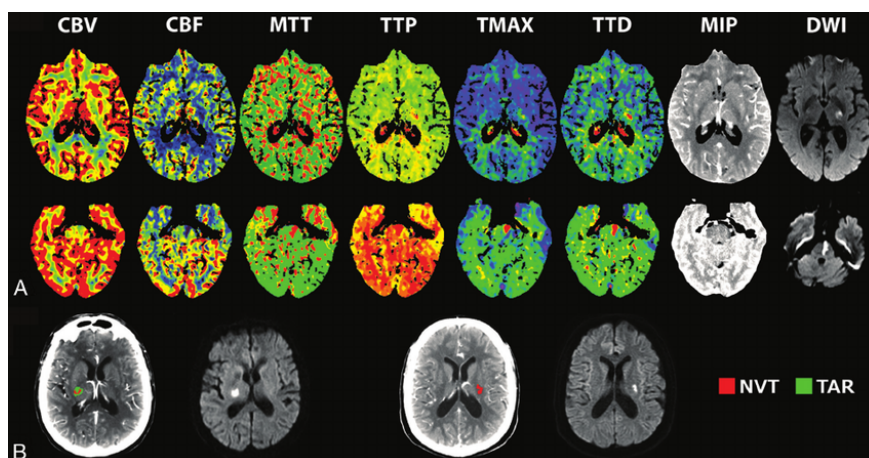


Fig 8. Neuroimaging is a collection of methods to image the structural, functional and chemical properties of the central nervous system (Rudilosso, 2015)

Apart from the biological aspect, other techniques, such as interpersonal and social rhythm therapy and cognitive behavioral therapy, have been proved to be effective in managing symptoms and reducing the risk of relapse (Anasseri, 2021).

5. Discussion

This paper studied the classification of depression, causes and treatments, the result is found that depression is very complex, the subclass is various, may be made up of a variety of factors, but also has related treatment, in studies in the future, scientists are trying to use gene technology more comprehensive understanding of the brain path of depression.

6. Conclusion

In conclusion, as the most prevalent mind-brain illness, it is easy to be depression under various kind of conditions. Depression can give a strike with or without a reason in people's daily lives, whoever children or adult. But there are treatments to this disease. It is of great essence to have a sound understanding of different aspects of depressive disorders, such as the causes, typical symptoms, treatments, etc., which does benefit to us and also our surrounding people.

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