# UNDERSTANDING DEPRESSION

## INTRODUCTION

Depression is often explained in simple ways — most commonly as a “chemical imbalance” in the brain that needs correcting with medication. The reality is more complicated.

Over many years working as a GP with a special interest in mental health, I have met many people experiencing depression. This led me to look closely at what research actually shows about depression, how it develops, and what helps recovery.

This guide aims to explain depression clearly and honestly using current scientific understanding alongside clinical experience. It looks at depression from several angles — biological, psychological, and social — because no single explanation fully accounts for people’s experiences.

Although depression often develops in response to life stress, loss, or difficult circumstances, this is not always obvious. Some people experience depression even when life appears outwardly stable or successful.

In these situations, contributing factors may include patterns of rumination, long-term stress physiology, disrupted sleep, expectations placed on oneself, chronic physical illness, inflammation, or changes in energy regulation within the brain and body. Often several factors overlap.

Depression can be understood as a pattern of changes affecting mood, energy, thinking, sleep, and motivation. Biology plays an important role, but it does not act in isolation from the environments we live in or the experiences we have had.

People experience depression differently, but common features include persistent low mood, reduced enjoyment or motivation, fatigue or low energy, sleep disturbance, difficulty concentrating and feelings of guilt or worthlessness

The aim of this guide is to help make sense of why these experiences occur and to show that there are many possible paths toward improvement.

**How this guide is organised**

This document is divided into three parts:

**Section A — Common ideas about depression**

What we are often told about depression, and what evidence supports or challenges those ideas.

**Section B — External factors**

How life circumstances, relationships, and environment influence the human system.

**Section C — Internal factors**

What research shows about changes in the brain and body during depression.

## SECTION A — COMMON IDEAS ABOUT DEPRESSION

**This section looks at common explanations people hear about depression and what current research suggests about them. The aim is not to dismiss these ideas, but to place them in context and clarify what they can — and cannot — explain.**

### The "Chemical Imbalance" Idea

Many people have been told that depression is caused by a chemical imbalance in the brain, usually involving serotonin.

Modern research has not found consistent evidence that depression is caused by a simple serotonin deficiency. The idea began as a theory many decades ago but gradually became widely accepted in popular culture and healthcare.

Antidepressants do of course have an effect. Some people find them helpful. However, their effects are more complex than simply correcting a known chemical problem.

Understanding this matters because informed choice is a vital part of the practice of medicine. Medication is one option among several, not the only logical response to depression. I have written separate detailed information sheets about these medications.

A useful way to think about depression is as a state the system has moved into, rather than a permanent defect. For example, if a car battery becomes drained, the car may not function — but the system itself is not broken. Restoring energy allows function to return.

For many people, depression behaves more like a change in functioning than a fixed disease.

### Is Depression Genetic?

Depression can be more common in some families, but this does not mean it is genetically predetermined.

Research suggests genes account for roughly one-third of vulnerability to depression. The larger influence comes from life experiences and environment.

Genes may affect sensitivity to stress or emotional responses, but they do not determine outcomes on their own.

Rates of depression have increased rapidly in recent decades. Because genes do not change quickly, this rise is more likely related to social and environmental pressures such as

financial stress, loneliness, work pressures, changes in social structures and reduced community connection.

A helpful way to understand this is that genes may influence vulnerability, but environment and physiology together shape what happens next.

## Depression and 'Willpower'

A common misunderstanding is that people with depression simply need to "try harder" or push themselves more.

In reality, many people with depression are already making enormous effort just to manage daily life.

Depression involves measurable changes in the body and brain's energy regulation, attention, motivation, and emotional processing. These changes can make ordinary tasks feel unusually difficult.

Recovery usually involves support, understanding, and gradual change. Helpful approaches vary between individuals and may include medication, talking therapies, practical life changes, social support, small, manageable behavioural steps, and approaches that help regulate stress and sleep.

## Is Depression Just a 'Brain Problem'?

Healthcare systems often describe depression primarily as something located within the individual brain. However, many people experience depression in response to real external pressures such as loss, grief, trauma, isolation, chronic stress, and difficult working or living conditions. In these situations, depression can be understood not only as a genuine and sometimes profound form of suffering, involving very real changes in how the brain and body function and shape experience, but also as an understandable human response to prolonged strain or adversity.

Some psychological models therefore ask different questions:

- What has happened to you?
- How has it affected you?
- What helped you cope?
- What support might help now?

This approach shifts attention from "What is wrong with you?" toward understanding context.

## Self-Help Advice — Sometimes Helpful but Not a 'Cure'

People experiencing depression are often advised to exercise more, improve diet, or practise mindfulness.

These strategies can genuinely help some people, but they are supports, not cures. When someone is severely depressed, even small actions can feel overwhelming.

Helpful tools work best when offered as options rather than expectations. Recovery usually happens through a combination of factors, including support, relationships, treatment choices, and gradual change over time.

## Awareness, Stigma, and the "Illness Like Any Other" Message

Public mental health campaigns have sometimes described depression as "an illness like diabetes" to help people take mental health difficulties seriously and reduce blame. For many people, this comparison made it easier to recognise depression as a genuine health problem and to seek help, clearly a beneficial outcome.

However, the comparison has important limits. Conditions such as diabetes are defined by clear and measurable biological changes — for example, problems with insulin production or regulation that can be identified with specific tests. Depression is different. Although biological changes are involved, research has not identified a single underlying abnormality, chemical deficiency, or diagnostic test that defines depression in the same way.

Studies suggest that strictly biological explanations do not always reduce stigma and can sometimes have unintended effects which can paradoxically increase stigma and impair rather than help recovery. When depression is described only as a brain disease or chemical imbalance, people may feel permanently damaged, become more pessimistic about recovery, or see themselves as fundamentally damaged or different from others without the diagnosis.

Depression does involve real changes in the brain and body, but these changes are closely connected with life experiences, physical health, stress, and patterns of thinking and behaviour. For some people depression develops during clearly difficult life circumstances; for others it arises without an obvious external cause. In both situations, it reflects changes in how the whole person — body, mind and environment — is functioning, rather than a single disease process.

A more balanced understanding recognises depression as a serious and sometimes overwhelming human experience while also emphasising that recovery remains possible and that people are not broken or permanently defined by the condition.

## What Does a Diagnosis of Depression Mean?

A diagnosis of depression does not come from a blood test or brain scan.

Instead, it describes a group of symptoms that tend to occur together, such as low mood, fatigue, sleep problems, and loss of interest.

Diagnostic manuals were created to help professionals communicate consistently, but they do not explain why depression occurs or predict exactly what will help.

For some people, receiving a diagnosis is helpful because it provides validation and access to support. For others, it is simply a starting point for understanding what is happening.

The key point is that the label describes experiences — it does not explain their cause. The diagnosis of depression is descriptive rather than explanatory.

### The Natural Course of Depression

Depression is sometimes assumed to be permanent without treatment. Research suggests this is not usually the case.

Studies following people over time show that many depressive episodes improve gradually even without treatment. Some recover within a few months, many within a year, and most within two years This does not mean depression is mild or should be ignored. It can be deeply distressing and sometimes long-lasting. But it does show that depression is often a changeable state, not a fixed condition.

Treatment and support can reduce suffering and help recovery happen sooner.

## SECTION B — EXTERNAL FACTORS

**This section explores how life circumstances, relationships, and environment influence mental health. These factors do not explain every experience of depression, but they often help make sense of how difficulties develop over time.**

### How Life Circumstances and Environment Influence Depression

Depression does not occur in isolation from the world around us. For many people, life experiences and ongoing circumstances play an important role in how depression develops.

However, this is not true for everyone. Some people experience depression without a clear external trigger. In those cases, internal factors such as sleep disruption, rumination, physical illness, inflammation, or long-term stress physiology may be more important. Most often, depression reflects a combination of influences rather than a single cause.

### Difficult Experiences, Trauma, and Depression

Not everyone with depression has experienced trauma. But for some people, overwhelming or prolonged stress plays a significant role.

In psychology, trauma does not only mean extreme events such as war or disasters. It can include experiences that overwhelmed a person’s ability to cope at the time, for example:

- emotional neglect
- bullying or exclusion
- repeated rejection
- discrimination or racism
- sudden loss or major life change

- unsafe or unpredictable relationships

When experiences feel unsafe or overwhelming, the brain and nervous system may remain more alert to threat afterwards. This is a protective response. Memories linked to strong emotion can remain easily triggered, sometimes feeling more present than past events.

Large studies show that difficult early experiences are associated with a higher risk of depression later in life. This does not mean depression is inevitable or that past events fully explain someone's current difficulties. Many people with challenging histories do not develop depression, and many people with depression report no clear trauma.

Research suggests that recovery often involves new experiences of safety, connection, or understanding that gradually reduce the emotional intensity attached to earlier experiences. Different therapies approach this in different ways, but the underlying principle is that the brain remains capable of updating emotional learning throughout life.

## The Social and Cultural Context

Mental health is strongly shaped by the environments people live in.

Social science research consistently links higher rates of depression with factors such as:

- financial insecurity
- insecure or high-pressure work
- loneliness and social isolation
- unsafe housing
- discrimination or social exclusion
- lack of community connection

Depression is sometimes an understandable human responses to sustained pressure.

For example:

- A person working long hours under constant stress may become exhausted and disengaged.
- Someone living alone with little social contact may gradually lose motivation and energy.
- Ongoing uncertainty about housing or finances can keep the nervous system in a prolonged stress state.

At the same time, it is important to recognise that depression can also occur in people whose lives appear outwardly stable or successful. External circumstances are only one part of the picture.

## Lifestyle and Environmental Influences

Modern lifestyles can sometimes work against basic biological rhythms that support mental health. Research shows associations between depression and several everyday factors:

## Sleep

Poor or disrupted sleep is strongly linked with depression. Improving sleep patterns often improves mood, although sleep problems can be both a cause and a consequence of depression.

## Nutrition

Diet alone does not cause depression, but patterns high in highly processed foods are associated with increased risk, while balanced nutrition appears protective.

## Movement

Regular physical activity supports mood regulation, energy levels, and stress resilience. Even small amounts can help.

## Light and Daily Rhythms

Human biology depends on regular exposure to daylight and consistent daily rhythms. Reduced sunlight, irregular schedules and excessive screen exposure can affect mood and energy regulation.

## Social Connection

Loneliness is one of the strongest predictors of depressive symptoms across populations. Humans are biologically wired for connection.

These factors are supports rather than cures. When someone is severely depressed, making changes can feel extremely difficult. Small, gradual adjustments are usually more realistic than major lifestyle overhauls.

## Emotional Needs and Meaning

Across psychology and public health research, depression is often linked with situations where important human needs are not being met over time. These include needs for:

- safety
- belonging and connection
- autonomy and control
- competence and achievement
- rest and privacy
- meaning or purpose

When these needs are consistently blocked — whether by circumstances, illness, or life transitions — people may gradually feel depleted or disconnected.

Meaning does not have to involve large achievements. It may come from relationships, caring roles, creativity, learning, or living according to personal values.

For some individuals, depression reflects a period where energy and motivation have reduced after prolonged strain. For others, questions of identity or purpose become more prominent.

Again, this is not universal. Some people experience depression primarily through biological or physiological pathways rather than identifiable unmet needs.

**A Balanced View**

External factors matter because human brains and bodies respond continuously to environment and experience. But depression is rarely explained by any single factor.

Some people clearly link their depression to life events or ongoing pressures. Others notice symptoms emerging gradually without an obvious reason. Both experiences are common and valid.

Understanding possible influences is not about assigning blame or finding one explanation. Instead, it helps identify areas where support or change might gradually support recovery.

## SECTION C — INTERNAL FACTORS

**This section explains what research shows about changes in the brain and body during depression. These biological processes are real and important, but are best understood as part of a wider system involving experience, stress, and environment.**

An important point comes first:

These biological changes are real, but they are not usually a single root cause.

In many cases they are best understood as part of a wider response involving stress, health, experience, and environment. In some people, however, biological or physiological factors may play a larger role even when no clear external trigger is present.

Depression is therefore best seen as a change in how multiple body systems are functioning together.

**Sleep and Depression**

Sleep disturbance is one of the most consistent features of depression. People may notice difficulty falling asleep, waking early, restless or vivid dreams, sleeping longer but feeling unrefreshed or fatigue despite adequate time in bed.

Research shows that the structure of sleep often changes during depression. In particular, the stage of sleep associated with dreaming (REM sleep) may occur earlier or more intensely, while deeper restorative sleep may be reduced.

Scientists do not yet know whether these sleep changes cause depression, result from it, or both. Most likely the relationship works in both directions.

Some psychological models suggest that dreaming helps process emotional experiences from the day. These ideas can be useful ways of understanding symptoms, although they remain theories rather than settled scientific explanations.

Research consistently shows that rumination — the tendency for the mind to repeatedly replay worries or problems — is strongly linked with depression. Professor Peter Kinderman has observed that people can face similar life stresses yet have very different outcomes, with ongoing patterns of repetitive thinking appearing to play an important role.

When the mind repeatedly replays concerns without opportunities for resolution or action, emotional systems may remain activated for longer. This ongoing mental activity can interfere with emotional processing during sleep, making sleep less restorative and potentially helping maintain low mood over time.

What is clear is that improving sleep rhythm and reducing persistent mental overactivity during the day often helps mood gradually improve.

Antidepressant medications commonly change sleep patterns, including reducing REM sleep. This may contribute to symptom improvement for some people, although the exact mechanisms are still being studied.

**Inflammation and Physical Health**

A growing area of research suggests that inflammation may contribute to depression in some individuals.

When the body is fighting infection or injury, it produces inflammatory chemicals that create what researchers call “sickness behaviour” — reduced energy, withdrawal, lower appetite, and increased need for rest. These responses help conserve energy for recovery. An analogy from the natural world would be an injured wolf retiring to a cave to recover, thus withdrawing from life temporarily.

Some people with depression show mildly raised inflammatory markers in blood tests. Depression is also more common in people with chronic physical illnesses such as autoimmune disease, cardiovascular disease, chronic pain conditions and metabolic disorders

Long-term stress can also increase inflammatory activity through hormonal and nervous-system pathways.

This model may help explain why some people develop depression:

- alongside chronic illness
- during periods of physical exhaustion
- or without obvious psychological triggers.

Not everyone with depression shows inflammation, and anti-inflammatory medications are not treatments for depression. However, the research supports the idea that depression can

sometimes feel physically similar to being unwell because overlapping biological systems are involved. These bodily changes can contribute to reduced energy, motivation and social engagement. Over time, withdrawal from normal activities and relationships can itself help maintain depression, creating a cycle that becomes difficult to interrupt. Support, reconnection and gradual re-engagement with daily life can therefore play an important role in recovery.

**Brain Networks Involved in Mood**

Depression is not caused by damage to one part of the brain. Instead, research shows changes in how different brain networks communicate.

Some areas studied frequently include regions involved in:

- emotional processing
- motivation and reward
- stress regulation
- attention and decision-making

One region deep within the brain (often called the subgenual anterior cingulate cortex) appears more active in severe depression and tends to normalise as people recover, regardless of whether improvement occurs through therapy, medication, or other treatments.

This suggests depression reflects a reversible change in brain activity patterns, rather than permanent injury.

**Life Experience and Gene Expression (Epigenetics)**

Genes influence vulnerability to depression, but they do not operate as fixed instructions.

Research in epigenetics shows that experiences can influence how genes are switched on or off over time. Stress, safety, relationships, physical activity, and environment can all affect biological regulation systems.

For example:

- prolonged stress can sensitise stress-response systems
- supportive relationships can buffer these effects
- exercise and restorative practices influence brain growth and repair pathways.

Importantly, these changes are dynamic and reversible. Biology adapts continuously throughout life.

This helps explain why recovery can occur even after long periods of difficulty.

**Attention, Thinking Patterns, and the Nervous System**

Many people with depression notice changes in thinking and attention rather than simply feeling sad.

Common experiences include:

- repetitive negative thinking (rumination)
- difficulty concentrating
- reduced ability to imagine positive futures
- harsh self-criticism
- feeling mentally “stuck”

Brain imaging studies suggest increased activity in networks involved in inward self-focused thinking. When stress systems remain active for long periods, attention naturally narrows toward potential problems or threats. This is a protective process but also means that at the same time, areas involved in planning, perspective, and flexible thinking may become less active. This can make it genuinely harder to think differently, see things from different perspectives, or take action, even when someone wants to.

Many people describe this as seeing life through a temporary filter. As recovery occurs and stress systems settle, cognitive flexibility usually returns.

Sometimes, when this narrowing becomes very intense, people may begin to experience thoughts about wanting to escape, disappear, or no longer continue living. These thoughts are often less about a genuine wish to die and more about a wish for relief from overwhelming mental pain or a sense that no alternative future is available.

Thoughts about death or escape are more common than many people realise. Research suggests that a substantial proportion of people experiencing severe depression report seriously considering suicide at some point, and a smaller number go on to make an attempt. These figures do not mean such thoughts are inevitable, but they help explain how strongly intense distress can narrow a person’s sense of possibility - and why support during these periods is so important.

Research suggests that suicidal thinking is frequently linked with states of cognitive constriction — when attention becomes strongly focused on present distress while the ability to imagine change or future possibilities temporarily reduces. In this state, problems can feel permanent and unsolvable, even though this perception usually changes as mood and regulation improve.

For this reason, suicidal thoughts are taken seriously in clinical care, because they signal that a person may be experiencing an extreme level of psychological and physiological strain and needs additional support and safety.

Importantly, these experiences are often temporary. As stress systems settle and flexibility returns, thoughts about death or escape commonly lessen or disappear.

Anyone experiencing persistent or worsening thoughts of suicide should seek support from a healthcare professional or trusted person as soon as possible.

**The Role of the Body and Nervous System**

Depression is not only a mental experience. Many people notice strong physical sensations such as heaviness or slowed movement, restlessness or tension, emotional numbness or reduced motivation or energy.

These reflect changes in the autonomic nervous system — the system that regulates safety, threat, and energy use.

Some people experience a more activated state (anxiety, agitation), while others experience a shutdown state (fatigue, withdrawal, low drive). Many move between both.

Approaches that help restore a sense of physical safety — including supportive relationships, gentle movement, breathing regulation, or structured daily rhythms — may gradually help the nervous system rebalance. These are supportive tools rather than cures, and different approaches suit different people.

**Neuroplasticity — Why Recovery Is Possible**

One of the most important findings in neuroscience is that the brain remains capable of change throughout life. This ability is called neuroplasticity.

As circumstances shift and supportive experiences accumulate, brain networks reorganise. Energy, motivation, and emotional range can gradually return.

Recovery rarely happens all at once. More often it occurs through small shifts over time; improved sleep, reduced stress load, meaningful activity, moments of social connection, appropriate treatment where needed.

Even small positive experiences can begin reinforcing healthier patterns.

## WHAT CAN HELP – DIFFERENT PATHS TO RECOVERY

As described throughout this guide, because depression can arise through different pathways, recovery rarely follows a single formula. What helps one person may be less helpful for another, and improvement often comes through a combination of small changes rather than one decisive intervention.

Support may include psychological therapies, medication where appropriate, improvements in sleep and daily rhythm, gradual increases in activity, supportive relationships, or changes in life circumstances. I have written separate information leaflets about these approaches. Sometimes recovery begins with practical support or simply having experiences understood and validated.

Importantly, help does not need to start with large steps. When energy and motivation are low, small and manageable changes are often more realistic. Recovery usually develops gradually as stress systems settle and flexibility returns.

Many people find that understanding what is happening to them is itself an important first step. Greater understanding can reduce self-blame and make it easier to explore supportive options at a pace that feels manageable.

There is no single correct path. The aim is not to force recovery, but to create conditions in which improvement becomes possible over time.

## CONCLUSION

Depression is not a single illness with one cause. It is a label describing a group of experiences that can arise through different pathways.

For some people, depression clearly follows difficult life events or prolonged stress. For others, it develops gradually without an obvious external reason, influenced more by biological, physiological, or health-related factors. Both patterns are common.

Changes occur across the brain, body, and nervous system, affecting energy, attention, sleep, and perception. These changes are real — but they are also often reversible.

Understanding depression in this broader way can reduce self-blame and widen the range of possible supports. Recovery may involve medication, therapy, lifestyle adjustments, social change, or simply time and support — often a combination rather than a single solution.

Most importantly, depression does not mean a person is permanently damaged. It represents a state the system has moved into, and states can change.

## Further Reading and Evidence Sources

The information in this guide draws on a wide range of medical and psychological research. Key sources include:

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