

This fact sheet describes two common forms of mental illness and includes a discussion of the symptoms, causes and available testing.

In summary

- Schizophrenia is a form of mental illness that involves changes in behaviour, perception and psychosis.
- Bipolar disorder is a form of mental illness that involves major mood swings from a depressed state to a manic state.
- Both schizophrenia and bipolar disorder are multifactorial conditions which means that they are most likely caused by a combination of genetic and environmental factors.

WHAT IS SCHIZOPHRENIA?

Schizophrenia is a mental illness that usually involves changes in behaviour and perception and disordered thinking (or psychosis). There is a wide variety of symptoms and not all people diagnosed with the condition always exhibit all the symptoms. Some people only have one episode of schizophrenia, while others will have a number of episodes. Symptoms often appear for the first time in late adolescence or early adult life.

Symptoms of schizophrenia include:

- Delusions
- Hallucinations, including auditory hallucinations (or ‘earing voices’)
- Disordered thinking
- Flat affect
- Cognitive impairment
- Loss of motivation.

Treatment for schizophrenia usually involves a combination of medication and psychological treatment. Research has shown that early treatment is more effective.

What Causes Schizophrenia?

Schizophrenia is thought to be due to the interaction of both genetic and environmental factors, however the exact cause is still unknown. When both genetics and external factors combine to cause a disease, this is called *multifactorial inheritance* (See Figure 59.1).

There are, however, known environmental factors that increase the risk of schizophrenia, such as:

- Infection in pregnancy or birth complications
- Drug abuse, particularly cannabis, methamphetamines (also called *speed* or *ice*) or hallucinogens
- Experiencing traumatic events.

How is Schizophrenia Inherited?

While there is no single gene that causes schizophrenia, we can see that genetic factors are involved as some people who have a family history of schizophrenia are at increased risk for having schizophrenia themselves (see table 59.1). There is also an increased risk for having a child affected by schizophrenia at some time in their life if their father was aged over 50 when they were born.

Affected relative	Risk for developing the condition (%)	
	Schizophrenia	Bipolar disorder
No close relative (general population risk)	1	1
Parent	6	10
Both parents	45	40
Identical twin (monozygotic)	40-50	40-70
Non-identical twin (dizygotic)	17	20
Brother/sister	9	13
Second-degree relative	3	5
First cousin	1-2	2-3

Table 59.1: Approximate familial risks in schizophrenia and bipolar disorder for close blood relatives of an affected person (not related by marriage). [Second degree relatives: aunts, uncles, nephews, nieces or grandparents].

Multifactorial inheritance refers to the pattern of inheritance of certain conditions due to a combination of both genetic and other factors that may include internal factors such as ageing, and exposure to external environmental factors such as diet, lifestyle, and exposure to chemicals or other toxins.

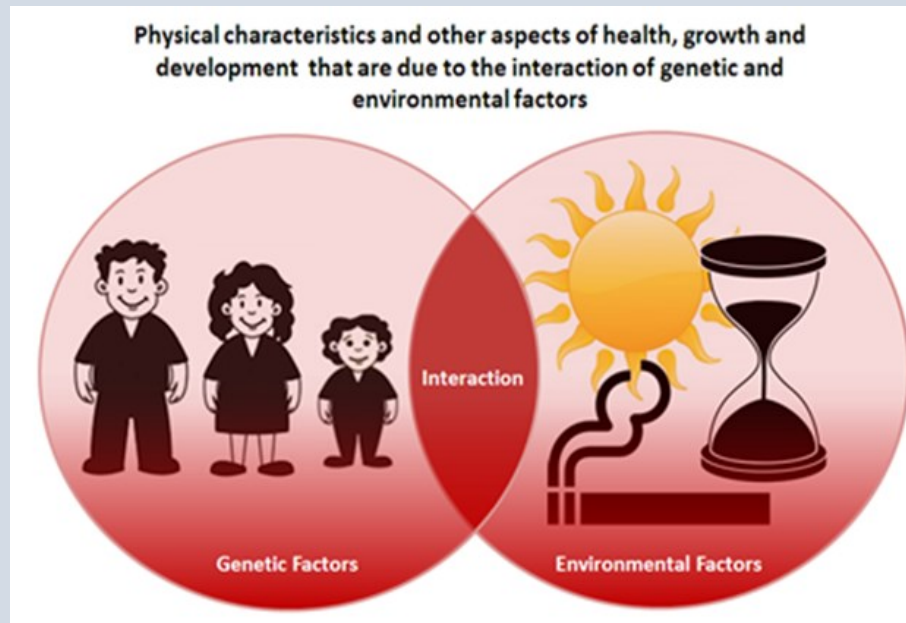


Figure 59.1: A diagrammatic representation of the interaction between genetic and environmental factors

WHAT IS BIPOLAR DISORDER?

Bipolar disorder, which used to be referred to as manic depression, is characterised by major mood swings where a person can experience episodes of mania and depression.

There are several forms of bipolar disorder including:

- *Bipolar disorder type 1* (classical form of the condition) where an affected person develops extreme forms of mania, loses touch with reality, often becomes psychotic and has delusions and hallucinations. This condition is quite severe and often leads to hospitalisation
- *Bipolar disorder type 2* is characterised by a milder form of mania (termed *hypomania*). While someone with this condition can have periods of extreme excitability, have excessive energy, often lose their inhibitions and have impaired judgment, they do not experience hallucinations nor do they become psychotic.

In both forms of bipolar disorder, mood swings appear to occur spontaneously, without any obvious external cause.

The pattern of 'highs' and 'lows' can occur repeatedly with little or no breaks between each episode or there may be long periods when the person shows no symptoms.

There are not such major differences in the symptoms of depression between the two types of the condition but it is important to note that it is estimated that about 10% of people with the disorder do not experience the depression and just express the mania.

What Causes Bipolar Disorder?

Bipolar disorder, like schizophrenia, is thought to be due to the interaction of both genetic and environmental factors and the exact cause is still unknown.

There are, however, known environmental factors that increase the risk of bipolar disorder, such as:

- Stressful life events
- Abnormal brain biochemistry
- Pregnancy and the postnatal period
- Season – bipolar disorder is more likely to occur in spring.

Importantly, even though a person may have an inherited susceptibility to develop bipolar disorder, it may not develop at all.

How is Bipolar Disorder Inherited?

When both genetics and external factors combine to cause a disease, this is called *multifactorial inheritance* (See Figure 59.1).

When one twin of an identical twin pair has bipolar disorder, the other twin does not always develop the condition, which suggests that there are likely to be 'environmental factors' that trigger the onset of symptoms. Without these triggers, the condition may not ever develop.

However, when one twin is affected, there is a significantly increased risk that the other twin will also have bipolar disorder, indicating there is likely to be genetic factors which predisposition to the condition.

As the genetic risk factors involved in bipolar disorder are not well understood, it is only possible to give general risks for other family members for developing bipolar disorder when one member is diagnosed with the condition. (Table 59.1)

Is There Any Testing Available For Schizophrenia or Bipolar Disorder?

Both schizophrenia and bipolar disorder are diagnosed by a psychiatrist or other mental health expert, after careful consideration of the symptoms.

As both schizophrenia and bipolar disorder are multifactorial conditions, and the genetic factors are not well understood, genetic testing is not available at this stage.

Genetic counselling, in conjunction with a mental health team may be useful in providing the most up-to-date information about the genetic basis of these conditions and risks to other family members.