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MBBS

# What do you understand by primary obesity?

It is a type of obesity that doesn’t involve pathological disorders. It is mainly as a result of excess energy intake, causing accumulation of fat in the body in form of adipocytes. It is more common in adults

1. **How does congenital syndrome and drug therapy lead to obesity**

There are certain congenital syndromes that are directly related with obesity

These include

* Prader-Willi syndrome
* Pseudohypoparathyroidism
* Laurence-Moon-Biedl (Bardet-Biedl) syndrome
* Cohen syndrome
* Down syndrome
* Turner syndrome

In Prader Willi Syndrome, there is a behavioural disorder called hyperphagia, which can cause an uncontrolled appetite in children, usually over 18 months. This disorder is usually a lifetime problem and can leads to obesity.

Also in Bardet Biedl syndrome truncal obesity is a common symptom used in diagnosing the disease.

In patients with pseudohypoparathyroidism type 1A, obesity appears to be caused mainly by decreased resting energy expenditure, rather than increased energy intake or endocrine dysfunction.

Children with Down syndrome are more likely than their unaffected siblings to have higher levels of a hormone associated with obesity, according to pediatric researchers. The hormone, leptin, may contribute to the known higher risk of obesity among children and adults with Down syndrome.

Obesity is also a prominent characteristic of Turner Syndrome although the reason behind this is still unknown.

Drug-induced weight gain is a serious side effect of many commonly used drugs leading to noncompliance with therapy and to exacerbation of comorbid conditions related to obesity. Drugs like thiazolidinedione, which is improves glycemic control, antipsychotic drugs like clozapine, antidepressants like amytryptiline are all accompained with weight gain

The main way that antipsychotics cause weight gain is by stimulating appetite so that people feel hungry, eat more food and take in more calories. Some people taking antipsychotics report craving sweet or fatty food. Antidepressants interfere with serotonin, the neurotransmitter that regulates anxiety and mood while also controlling appetite

1. .AETIOLOGY OF CANCER AND ITS MOLECULAR BASIS

## Introduction

Cancer is a disease caused by genetic changes leading to uncontrolled cell growth and [tumor](https://en.m.wikipedia.org/wiki/Neoplasm" \o "Neoplasm) formation. The basic cause of sporadic (non-familial) cancers is DNA damage and genomic instability. A minority of cancers are due to inherited genetic mutations. Most cancers are related to environmental, lifestyle, or behavioral exposures

## **The molecular basis of cancer**

Discussion of the causes of cancers necessarily involves an examination of the molecular machinery in cells that guides the basic processes of proliferation (increase in cell number by cell division), differentiation (cell specialization into different tissue types), and apoptosis (programmed cell death). Those processes are guided by two innate programs in cells, the genetic code and the epigenetic code. In cancer each of those codes ultimately becomes altered regardless of whether the disease originated with an external or internal factor. Indeed, a fundamental characteristic of a tumour cell is that it begets a tumour cell. In other words, cancer, once manifest, becomes an inherited disease of the cell and is therefore self-perpetuating.

The hereditary nature of cancer at the cellular level explains why alterations have been found in both the genetic and the epigenetic codes in tumour cells. The number of alterations seen in the coded programs increases as tumours progress to more advanced stages. Their existence and accumulation also explain why principles of evolutionary theory provide insights of practical significance for cancer biology.

**What causes cancer**

There is no one single cause for cancer. Scientists believe that it is the interaction of many factors together that produces cancer. The factors involved may be genetic, environmental, or constitutional characteristics of the individual.

* **Lifestyle factors.** Smoking, a high-fat diet, and working with toxic chemicals are examples of lifestyle choices that may be risk factors for some adult cancers. Most children with cancer, however, are too young to have been exposed to these lifestyle factors for any extended time.
* **Family history, inheritance, and genetics may play an important role in some childhood cancers.** It is possible for cancer of varying forms to be present more than once in a family. It is unknown in these circumstances if the disease is caused by a genetic mutation, exposure to chemicals near a family's residence, a combination of these factors, or simply coincidence.
* **Some genetic disorders.** For example, Wiskott-Aldrich and Beckwith-Wiedemann syndrome are known to alter the immune system. The immune system is a complex system that functions to protect our bodies from infection and disease. The bone marrow produces cells that later mature and function as part of the immune system. One theory suggests that the cells in the bone marrow, the stem cells, become damaged or defective, so when they reproduce to make more cells, they make abnormal cells or cancer cells. The cause of the defect in the stem cells could be related to an inherited genetic defect or exposure to a virus or toxin.
* **Exposures to certain viruses.** Epstein-Barr virus and HIV, the virus that causes AIDS, have been linked to an increased risk of developing certain childhood cancers, such as Hodgkin and non-Hodgkin lymphoma. Possibly, the virus alters a cell in some way. That cell then reproduces an altered cell and, eventually, these alterations become a cancer cell that reproduces more cancer cells.
* **Environmental exposures.** Pesticides, fertilizers, and power lines have been researched for a direct link to childhood cancers. There has been evidence of cancer occurring among nonrelated children in certain neighbourhoods and/or cities. Whether prenatal or infant exposure to these agents causes cancer, or whether it is a coincidence, is unknown.
* **Some forms of high-dose chemotherapy and radiation.**In some cases, children who have been exposed to these agents may develop a second malignancy later in life. These strong anticancer agents can alter cells and/or the immune system. A second malignancy is a cancer that appears as a result from treatment of a different cancer