

## Definition of Cancers

Cancer begins when cells in a part of the body start to grow out of control. There are many kinds of cancer, but they all start because of out-of-control growth of abnormal cells. Cancer is the second leading cause of death in the United States. About one-half of all men and one-third of all women in the US will develop cancer during their lifetimes. Today, millions of people are living with cancer or have had cancer.

### **Genes and cell division**

Inside almost every single cell in your body is a structure called the nucleus, which is the control centre of the cell? Inside the nucleus are 23 pairs of chromosomes. These are long strings of DNA. DNA stands for deoxyribonucleic acid (pronounced dee-oxy-rye-bow-nu-clay-ik acid). Each string of DNA is shaped like a twisted ladder, which is called a double helix. You have more than two metres of DNA inside every cell, but it is very tightly coiled up so it all fits. DNA can be thought of as a code, containing all the instructions that tell a cell what to do. It is made up of genes. Humans have around 25,000 genes in total. You inherit half your DNA from your mother and half from your father, so you have two copies of every gene. Your genes carry all the information that makes you, you. They tell your body to have blonde hair, or brown skin, or green eyes for example. And they tell your cells what sort of cell to be, how to behave, when to grow and reproduce, and when to die. Some genes control how much each cell grows and divides.