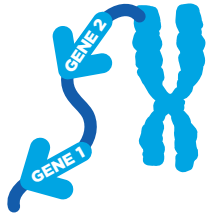


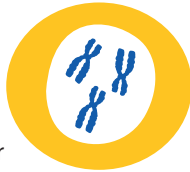
GENETIC AND EPIGENETIC CONTROL OF CELL FUNCTION

The genetic material of a cell comprises strings of four **deoxyribonucleic acid (DNA)** units called bases.



DNA bases are organized into **genes**. The order, or sequence, of the bases provides the code used by the cell to produce the various proteins it needs to function.

The entirety of a person's DNA is called the **genome**. Almost every cell in the body contains a copy of the genome. The genome is packaged together with proteins known as **histones** into structures called **chromosomes**.



Special chemical marks, called **epigenetic marks**, on the DNA and histones together determine whether a gene is accessible for reading. The sum of these chemical marks across the entire genome is called the **epigenome**.

The accessible genes within each cell are read to produce the proteins that ultimately define the **function of the cell and the tissue** in which the cell resides.



Adapted from (1)

American Association for Cancer Research (AACR)
Cancer Progress Report 2018