

GENETIC MUTATIONS

The types of genetic mutation known to lead to cancer include:

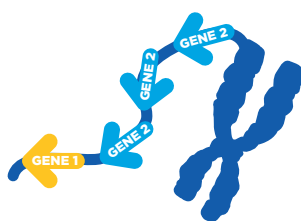
Single base changes

- Some mutations can lead to the generation of altered versions of normal proteins, and these may cause cancer to develop.
- Deletion or insertion of a single base can result in new proteins or loss of protein function, which can lead to cancer.



Extra copies of genes (gene amplification)

Higher quantities of certain proteins can result in enhanced cell survival and growth, leading to cancer.



Large deletions

Loss of DNA can result in loss of genes necessary to stop or control the growth of cancer.



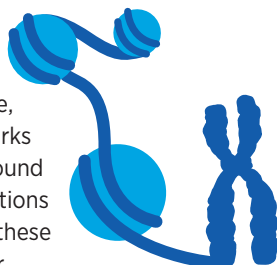
Genetic recombination

Exchange of DNA across different parts of the genome can lead to entirely new proteins that can drive the development of cancer.



Mutations that alter the epigenome

Several proteins read, write, or erase the epigenetic marks on DNA or the histones around which it is packaged. Mutations in the genes that produce these proteins can lead to cancer.



Of note, genetic mutations do not always result in cancer.

Adapted from (1)