

Gene Mutation

A gene mutation is a permanent alteration in the DNA sequence that makes up a gene. Mutations range in size, affecting from a single DNA building block (base pair) to a large segment of a chromosome with multiple genes. Gene mutations can be classified in two ways:

1. Germ-line mutations are inherited from a parent and are present throughout a person's life in every cell in the body. These mutations are present in the parent's egg or sperm cells, and are transmitted as hereditary mutations.
2. Somatic mutations occur at some point during a person's life only in certain cells, not in every cell in the body. These changes can be caused by environmental factors such as ultraviolet radiation from the sun, or can occur if a mistake is made as DNA copies itself during cell division. These acquired mutations cannot be passed on to the next generation.