



# Exploration of Direct and Indirect Genetic Effects and Various Mechanisms of Genetic Disorder

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## DESCRIPTION

A genetic disorder is a mental illness caused by more chromosomal abnormalities. It can be caused by a single genetic mutation or monogenic, multiple genetic mutations or polygenic, or chromosomal disorders. Although polygenic disorders are the most common term it is generally used while discussing disorders caused by a single genetic mutation. A genetic disorder is a disease induced in whole a deviation from the normal DNA (Deoxyribonucleic Acid) sequence.

### Types of Genetic Disorders (Inherited)

- The Inheritance from a single genetic
- Multifactorial genetic heritage
- Chromosome variability
- Inheritance of mitochondria
- Down syndrome symptoms and signs
- Hands are wide, and short fingers
- Short fingers and there is a single flexion crease in the palm, and joints are much more flexible.

## SINGLE GENE INHERITANCE DISORDERS

Monogenic inheritance is also known as a single genetic inheritance. This type of inheritance is caused by mutations in the DNA (Deoxyribonucleic Acid) sequence of a genetic mutation. There are thousands of single-genetic disorders identified these are called as single genetic disorders. A hereditary disease occurs when a genetic disorder is inherited from parents. Some disorders have X-linked inheritance and caused by a mutation on the X chromosome. An acquired disease is the opposite of a hereditary disease. Most cancers are acquired diseases, due to the fact that they involve genetic mutations in a small proportion of the liver and muscles.

Cystic fibrosis, alpha and beta-thalassemia, sickle cell disease, Muscular dystrophy, fragile X syndrome, Huntington's disease, and hemochromatosis are examples of single-genetic disorders.

Chromosomal abnormalities are different structures made up of DNA (Deoxyribonucleic Acid) and proteins found in the nucleus of every cell. Because chromosomes are the carriers of genetic material, abnormalities in the structure of chromosomes can cause disease. The entire treasury of human inheritance is also included in the human genome. Chromosomal abnormalities are usually occurring because of cell division. The human genome sequence obtained as a part of the Human Genome Project, completed in April 2003, it provides the first holistic view of our genetic heritage.

Most genetic diseases are the direct result of a mutation in single genetic. It is more than one mutation is required before the disease manifests, and multiple genetics can contribute to a person's susceptibility to the disease. Genetics can also affect how a person responds to environmental factors. A single genetic disorder or monogenic disorder is the result of a single mutated genetic. Disorders of individual genetics can be passed on to subsequent generations in different ways. However, genomic imprinting and uniparental disomy can affect inheritance patterns. The majority of congenital metabolism disorders are inborn errors of metabolism resulting in the single genetic. Many of these single-genetic defects can reduce the physical ability of affected patients as results are present in the population at lower frequencies compared to what would be expected based on simple probability calculations. Eight emotional impacts of genetic diseases were identified: Anxiety, worry about child risk, anger, insecurity, sadness, depression, and redemptive adjustment.

Most researchers conclude that anxiety is genetic but it can be influenced by environmental factors. Maintain a healthy diet, Exercise on a regular basis, Avoid using tobacco and drinking too much alcohol. Obtain specific genetic tests that can help with diagnosis and treatment. Other laboratory tests that measure the levels of certain substances in the blood and urine can also help diagnosis. Individuals and families of various genetic sign, symptoms and specific genetic conditions are evaluated, diagnosed, and treated by medical geneticists. In the United States, Cystic Fibrosis (CF) is the most common and fatal genetic disease.

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