

## Introduction

**Down Syndrome**, also known as **Trisomy 21**, is a genetic disorder caused by the presence of all or part of a third copy of chromosome 21. Though the likelihood of carrying a baby with Down syndrome can be estimated by screening during pregnancy, the person will not experience any symptoms of carrying a child with Down syndrome. People with Down syndrome usually have some degree of developmental disability, but its often mild to moderate, mental and social development delays.

## Types

- ❖ **Trisomy 21**, the most common type of Down syndrome, occurs when there are 3, rather than 2, number 21 chromosomes present in every cell of the body. Instead of the usual 46 chromosomes, a person with Down syndrome has 47. It is this additional genetic material that alters the course of development and causes the characteristics associated with the syndrome. Trisomy 21 accounts for 95% of cases.

- ❖ Translocation accounts for 4% of all cases of Down syndrome. In translocation, part of chromosome 21 breaks off during cell division and attaches to another chromosome, typically chromosome 14.

- ❖ Mosaicism occurs when no disjunction of chromosome 21 takes place in one – but not all – of the initial cell divisions after fertilization. When this occurs, there is a mixture of two types of cells, some containing the usual 46 chromosomes and others containing 47. Mosaicism accounts for about 1% of all cases of Down syndrome.

## Symptoms

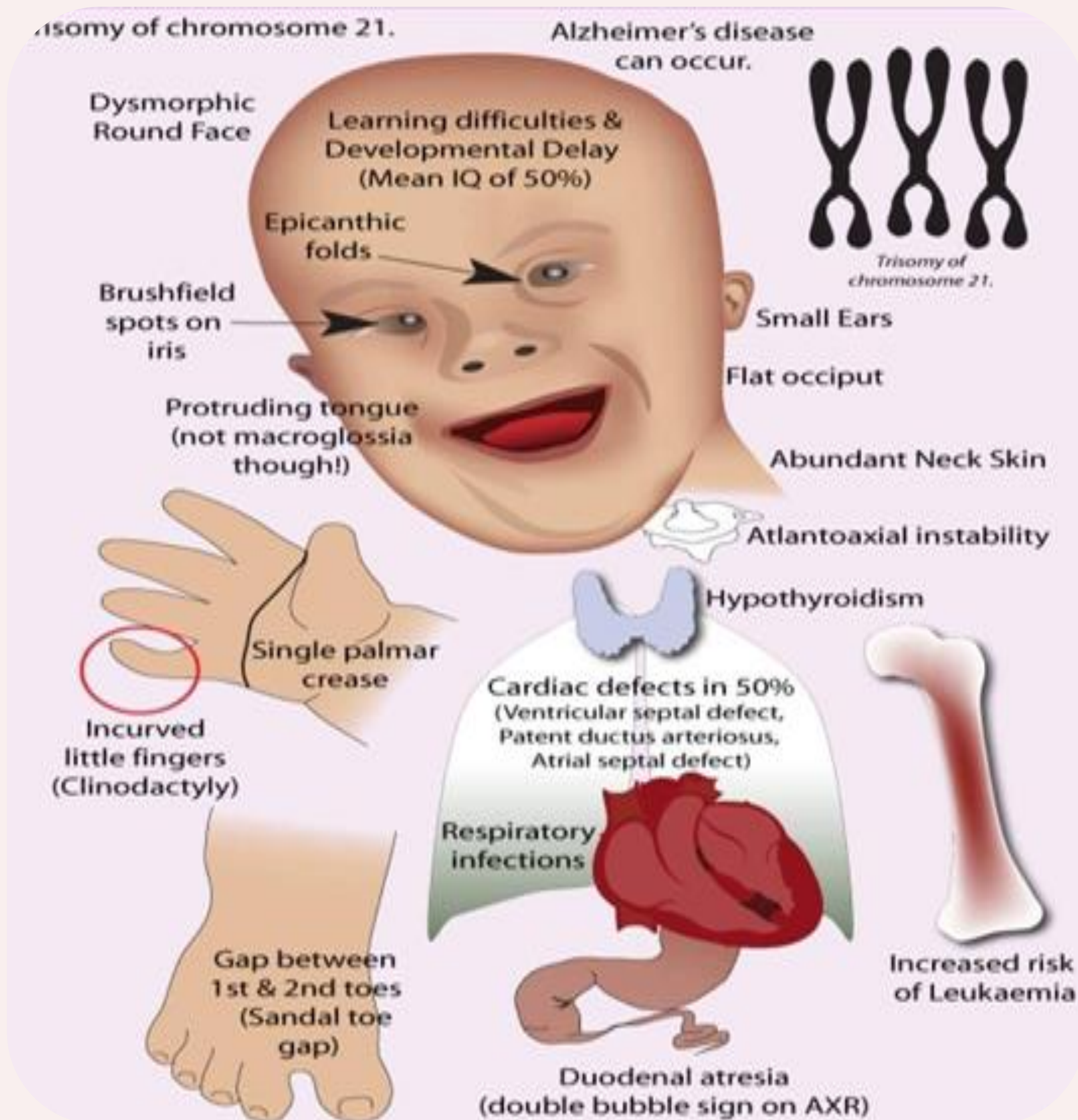


Figure 1.1: Shows symptoms of Down syndrome

## Causes

- ❖ There is no proper separation between the pigment cells in the affected child, and this is the most common cause.
- ❖ The increase in the mothers age. when the mother reaches the age of 40.
- ❖ Use of plenty of medications during pregnancy.
- ❖ The suffering of a parent from psychological disorders and the use of drugs that inhibit them.
- ❖ Transgenic gene transmission through genetics, if there is a previous infection in the family.

## Summary

Down syndrome is a genetic disorder that occurs when abnormal cell division leads to the production of an additional genetic material from chromosome 21. Down syndrome has three types Trisomy 21, translocation and mosaicism. Its main characteristic are short neck, small head and ears and AV channel. The main cause is when the mother reaches the age of 40.

## References

1. <http://dsaco.net/three-types>
2. <https://www.healthline.com/health/down-syndrome#types>