

BIOLOGY INVESTIGATORY PROJECT

TOPIC:
DOWN SYNDROME



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CERTIFICATE

**CENTRE POINT SCHOOL
WARDHAMAN NAGAR
NAGPUR**



**BIOLOGY
PROJECT RECORDS
STD. XII (10+2 PATTERN)**

**Certified bonafide record of practical/ project done by
Submitted for the board examination 2024-25**

Board Roll No:

Title:

**(External's Examiner)
Signature**

**(Internal Examiner)
Signature**

ACKNOWLEDGEMENT

I would like to convey my thanks to Mr Harish Sahare my Biology In charge, Centre Point School, Nagpur for his immense help and guidance in the completion of my project. It is only due to his efforts that my project could be completed successfully. This report is submitted as a part of the practical examination included in the curriculum of CBSE for All India Senior Secondary Examination to be held in the year 2024-25.

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Roll No: _____

INTRODUCTION

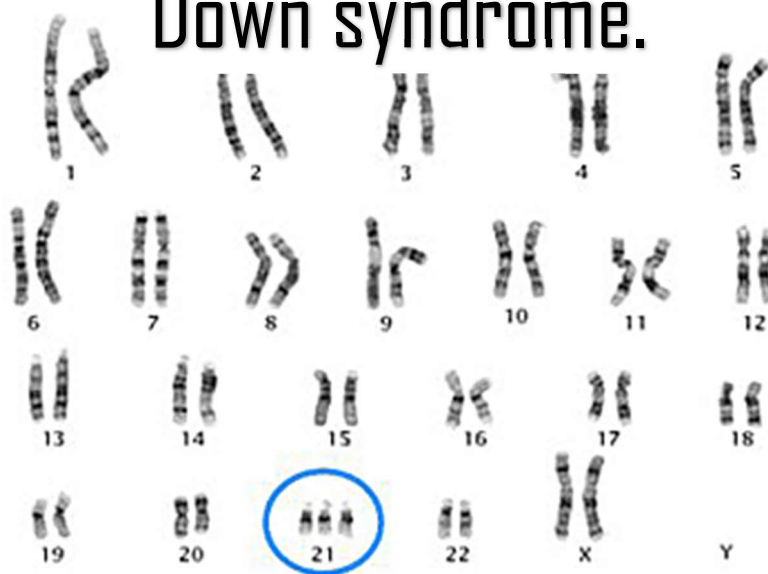
DOWN SYNDROME:

Down syndrome, also known as trisomy 21, is a genetic disorder caused by an extra copy of chromosome 21

Chromosomes are small packages of genes in cells that determine how the body forms and functions. In people with Down syndrome, each cell has three copies of chromosome 21 instead of the usual two.

CAUSES

Down syndrome is usually not inherited, and no behavioural activity of the parents or environmental factor is known to cause it. However, the age of the mother is one factor that increases the risk of having a baby with Down syndrome. Women ages 35 and older are more likely to have a baby with Down syndrome.



DIAGNOSIS

- **Screening tests**

These tests can indicate if a pregnancy has a higher chance of having Down syndrome, but they don't provide a definitive diagnosis.

- **Diagnostic tests**

These tests can confirm or rule out Down syndrome by checking for extra material from chromosome 21 in a sample of cells. Some examples of Diagnostic tests are:

1. Amniocentesis: a sample of amniotic fluid is taken between 14-18 weeks of pregnancy
2. Chronic villus sampling(CVS):sample of cells from placenta is taken between 9-11 weeks of pregnancy,
3. Precutaneous umbilical blood sampling(PUBS):
A sample of fetal blood is taken through the uterus between 18-22 weeks of pregnancy

SYMPTOMS

Down syndrome can cause a range of symptoms, from mild to severe, that vary from person to person:

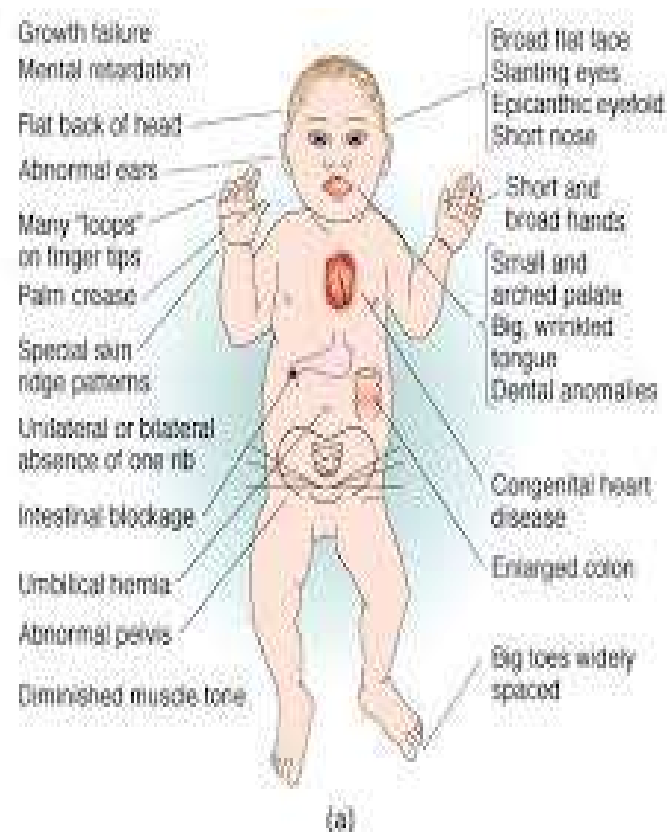
- **Physical:** A person with down syndrome may have:

1. A short neck with extra skin at back.
2. A flat face and nose
3. Small hands, ears and feet.
4. A single crease in palm of hand
5. Poor muscle joints
6. Upward slanting eyes
7. White spots on coloured part of eyes
8. A deep groove between first and second toes.

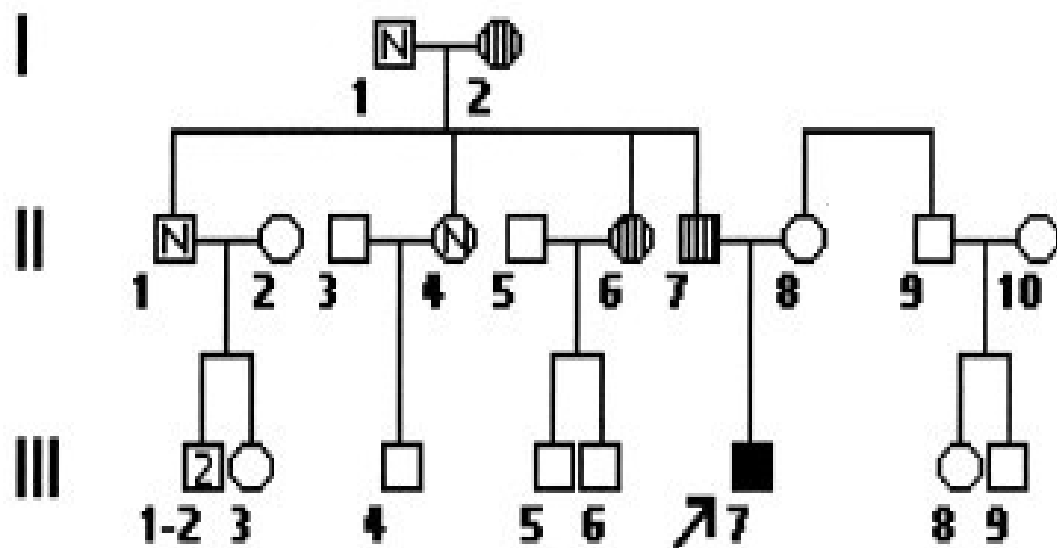
- **Developmental:** a person with down syndrome may have:

1. Delayed mental and social development
2. Impulsive behaviour

3. Poor judgment
 4. Short attention span
 5. Slow learning
- **Other:** A person with down syndrome may have:
 1. Hearing loss
 2. Ear infections
 3. Eye diseases
 4. Congenital heart diseases
 5. Digestive problems
 6. Obesity



PEDIGREE CHART



■ : Down's syndrome

▨ ◐ : Pericentric inversion

⊠ ⊙ : Normal cytogenetic finding

□ ○ : Not investigated

WORLD DOWN SYNDROME DAY

March 21st is a Global Day of Celebration and awareness that has been observed by the United Nations since 2012. It's purpose is to educate the world on what Down syndrome is and how individuals with Down syndrome need to be valued in their communities.



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