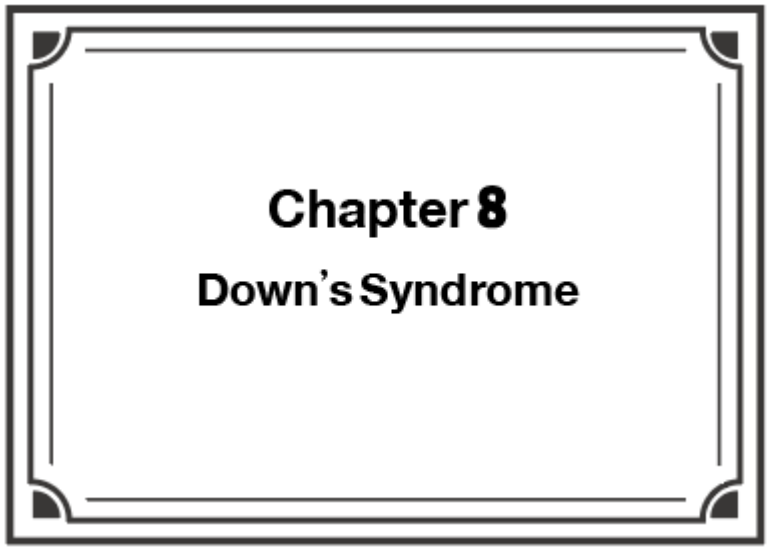

Chapter 8

Down's Syndrome

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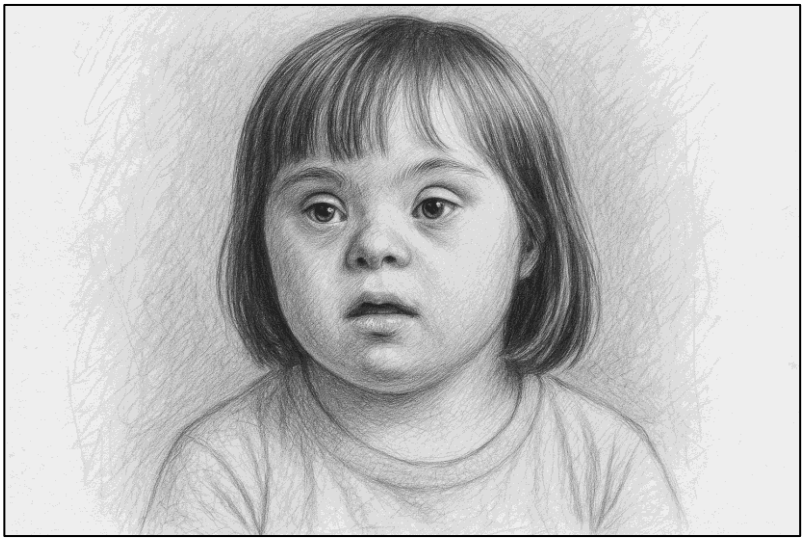

Definitions of Down’s Syndrome

Down’s Syndrome is a genetic condition caused by the presence of an extra chromosome 21. Instead of having 46 chromosomes in total, individuals with Down’s Syndrome have 47. This extra genetic material affects physical development, intellectual functioning, and health.

Down’s Syndrome is not a disease but a lifelong condition. People with Down’s Syndrome may have mild to moderate intellectual disability, developmental delays, and certain medical concerns. However, with early intervention, education, and medical care, individuals can live healthy, fulfilling lives.

It is named after Dr. John Langdon Down, who first described the condition in the 19th century.

Prevalence of Down's Syndrome

Down's Syndrome occurs in about 1 in every 700 births worldwide, though rates vary slightly across regions. The likelihood increases with maternal age, especially when the mother is over 35. However, most children with Down's Syndrome are born to younger mothers simply because younger women have more babies overall.

Advances in medicine and social inclusion have greatly improved life expectancy and quality of life. Today, many individuals with Down's Syndrome attend school, work, and participate actively in their communities.

Types of Down's Syndrome

There are three main types:

1. **Trisomy 21 (Nondisjunction)**: The most common type (about 95% of cases). Every cell in the body has an extra copy of chromosome 21.
2. **Translocation**: About 3-4% of cases. The extra chromosome 21 attaches to another chromosome.
3. **Mosaicism**: About 1-2% of cases. Only some cells have the extra chromosome 21, leading to milder features.

Characteristics of Individuals with Down's Syndrome

Children and adults with Down's Syndrome may share certain physical and developmental characteristics, although not all individuals have all traits.

Physical features:

- Flattened facial profile.
- Upward slanting eyes.
- Short neck, small ears, and a small nose.
- Single deep crease in the palm of the hand.

- Short stature and low muscle tone (hypotonia).

Developmental and cognitive features:

- Delayed speech and language development.
- Mild to moderate intellectual disability.
- Slower progress in motor skills (sitting, walking, writing).
- Strength in visual learning, imitation, and social interaction.

Health conditions (not in all cases):

- Congenital heart defects.
- Hearing and vision problems.
- Increased risk of thyroid and respiratory issues.

Educational and Support Strategies

Children with Down's Syndrome can achieve significant progress with the right educational support:

1. **Early Intervention**: Therapies (speech, occupational, physical) starting in infancy improve skills.
2. **Inclusive Education**: Many students benefit from attending mainstream schools with individualized support.
3. **Instructional Strategies**: Using visual aids, repetition, and hands-on activities and breaking tasks into small steps and allowing extra time.
4. **Social and Emotional Support**: Encouraging peer interaction and participation in group activities and building confidence through praise and realistic expectations.
5. **Family Support**: Families play a critical role by providing daily care, emotional support, and advocacy.

Practical Examples

- A student with Down's Syndrome may use picture cards or sign language to support communication while learning to speak.
- Teachers may provide worksheets with large fonts and simple instructions to help understanding.
- A peer buddy system can help with classroom routines and social integration.

Key Terms

English Term	Meaning in Arabic
Down's Syndrome	متلازمة داون
Trisomy 21	التثلث الصبغي 21
Mosaicism	الفسيفسائية
Hypotonia	نقص التوتر العضلي

Questions and Answers

Q1: What causes Down's Syndrome?

A1: It is caused by the presence of an extra chromosome 21.

Q2: Is Down's Syndrome a disease?

A2: No, it is a genetic condition, not a disease.

Q3: What is the prevalence of Down's Syndrome worldwide?

A3: About 1 in every 700 births.

Q4: What factor increases the likelihood of having a child with Down's Syndrome?

A4: Advanced maternal age (over 35).

Q5: Name the three types of Down's Syndrome.

A5: Trisomy 21, translocation, and mosaicism.

Q6: What is hypotonia?

A6: Low muscle tone, common in individuals with Down's Syndrome.

Q7: Give one physical feature common in Down's Syndrome.

A7: A flattened facial profile or upward slanting eyes.

Q8: What type of disability is most common in Down's Syndrome?

A8: Mild to moderate intellectual disability.

Q9: How can early intervention help children with Down's Syndrome?

A9: It improves speech, motor skills, and social development.

Q10: What instructional strategies are effective for students with Down's Syndrome?

A10: Using visual aids, repetition, and breaking tasks into smaller steps.

Q11: Why is family support important?

A11: Because families provide daily care, emotional encouragement, and advocacy.