

# Reaching the Age of Adolescence Class 8 Notes

## Science Chapter 10

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Adolescence and puberty (In boys and girls).

**Adolescence:** The term is manipulated from a Latin word 'Adolescence' meaning "to grow into maturity."

Whenever a kid starts crossing the age of 10 or 11, there is a sudden spurt in growth. This shows that they (boys and girls) are no longer a child but are on the way to becoming an adult.

Humans become capable of reproduction after puberty sets in. Between the ages of 11 years and 19 years, children are called adolescents.

The onset of puberty brings about the growth of the reproductive organs. Hair grows at various places on the body. Breasts develop in girls and the region below the waist becomes wider, while facial hair (moustache and beard) appears in boys. Voice of boys becomes hoarse as voice box enlarges during adolescence.

Children gain height, weight and reach mental maturity and emotional maturity during adolescence.

The onset of puberty and maturity from reproductive parts are controlled by hormones.

Hormones are the secretions from endocrine glands, which pour them directly into the bloodstream.

### **Hormones of Pituitary Gland**

The pituitary gland also called master gland, secretes hormones like growth hormone and the hormones that stimulate other glands such as the testes, ovaries, thyroids and adrenals to secrete hormones. For example, Pancreas secretes insulin, the thyroid secretes thyroxine and adrenals secrete adrenalin.

### **Male and Female Hormones**

Testosterone is the male hormone and estrogen, the female hormone. The uterine wall in females, i.e., the endometrium prepares itself to receive the developing fertilised egg. In case there is no fertilisation, the thickened lining of the uterine wall breaks down along with degenerated corpus luteum and egg and goes out of the body along with blood. This is called menstruation.

**Chromosomes:** These are thread-like structures that are present inside the nucleus of a cell and meant for carrying information from one generation to the next generation.

**Ductless Glands:** A few glands such as sweat glands, oil glands and salivary glands release their secretions through ducts. Endocrine glands lack ducts and it releases hormones directly into the bloodstream. So they are also called ductless glands.

**Menstruation:** If fertilisation does not occur in female, the released egg and the thickened lining of the uterus along with its blood vessels are shed off. This causes bleeding in the female which is called menstruation.

**Menopause:** At 45 to 50 years of age the menstrual cycle stops. Stoppage of menstruation is termed as menopause.

**Menarche:** The first menstrual flow begins at puberty and is termed menarche.

**Adam's Apple:** This is the protruding part of the throat in boys which begin to grow at puberty. This is also known as the voice box or the larynx.

**Adolescence:** It is the period of 11 to 19 years of age during which the body undergoes different changes because of hormonal effect, leading to reproductive maturity.

**Adrenalin:** It is the hormone secreted by Adrenalin glands that helps the body to adjust to stress when one is very angry, embarrassed or worried.

**Balanced Diet:** A diet which contains all the necessary nutrients such as proteins, carbohydrates, fats and vitamins in proper proportions is called a balanced diet.

**Endocrine Glands:** There are certain glands that lack ducts in it and are responsible for the secretion of the chemical substance, called hormones. They pour their secretion directly into the bloodstream. They are called endocrine glands.

**Estrogen:** This is the female sex hormone produced by ovaries, which causes the breasts to develop.

**Hormones:** These are chemical substances which are secreted from endocrine glands to trigger the general effect on the body.

**Insulin:** Insulin is a hormone secreted from the pancreas to hydrolyse the sugar content in the body.

**Larynx:** At puberty, the voice box or the larynx begins to grow.

**Pituitary Gland:** It is the gland that secretes hormones which include growth hormone and hormones that make other glands such as the testes, ovaries, thyroids and adrenals, to secrete hormones. It is also called a master gland.

**Puberty:** The age in which the human body undergoes several changes and the boys and girls show their capability to reproduce.

**Reproductive Health:** Personal health and hygiene of adolescents must be given proper care. Girls should take special care of cleanliness during the time of menstrual flow.

**Secondary Sexual Characters:** Developed breasts in girls and facial hair in boys etc. are called the Secondary Sexual Characters.

**Sex Chromosomes:** One pair out of 23 pairs of chromosomes in human beings are Sex Chromosomes because they are responsible for sex determination.

**Target sites:** Endocrine glands release hormones into the bloodstream to reach a particular body part fraction called Target Site.

**Testosterone:** This is the male sex hormone released by the testes at the onset of puberty.

**Thyroxine:** Thyroxine is a hormone secreted from the thyroid gland.

**Voice Box:** Voice producing part of the throat is called voice box or larynx.