

Class – VIII
SCIENCE
REACHING THE AGE OF ADOLESCENCE

ADOLESCENCE : The transitional period of physical and mental development which occurs between childhood and adulthood is called adolescence.

ADOLESCENT: A person who is in the process of growing from a child to an adult is called an adolescent.

PUBERTY:The period during which adolescent boys and girls reach sexual maturity and become capable of reproduction is called puberty.

THE VARIOUS CHANGES WHICH OCCUR IN BOYS DURING PUBERTY:

- 1.Hair grow on the face of boys and on chest
- 2.Voice deepens in boys.It becomes low pitched voice.
- 3.Testes start to make sperms.
- 4.Testes and penis become larger.
- 5.Chest and shoulders of boys broaden.
- 6.Rapid increase in height occurs.

THE VARIOUS CHANGES WHICH OCCUR IN GIRLS DURING PUBERTY :

- 1.Breast develop and enlarge in girls.
- 2.Ovaries start to release eggs.
- 3.Menstruation monthly periods begin.
- 4.Ovaries ,oviducts, uterus, and vagina enlarge.
- 5.Hips of girls broaden.
- 6.Rapid increase in height occurs.

TWO TYPES OF SEXUAL CHARACTERISTICS: Primary sexual characteristics and secondary sexual characteristics.

PRIMARY SEXUAL CHARACTERISTICS:

The sexual characteristics which are present at birth are called primary sexual characteristics.

SECONDARY SEXUAL CHARACTERISTICS

The sexual characteristics controlled by hormones which distinguish between sexually mature males and females but are not directly involved in reproduction are called secondary sexual characteristics.

The main secondary sexual characteristics in males:

- 1.Hair grow on face in boys.
- 2.Shoulders and chest broaden.
- 3.A deeper voice in boys.

The main secondary sexual characteristics in females:

- 1.Development of breasts in girls.
- 2.Hips broaden and become more curved and prominent in girls.
- 3.A shrill voice in girls.

HORMONES

Hormones are the chemical substances which coordinate the activities of living organisms and also their growth.

Hormones are made and secreted by specialised tissues in the body called endocrine glands.

Sex hormones : The hormones involved in the development and control of the reproductive organs and secondary sexual characteristics are called sex hormones.

Eg. Testosterone and estrogen.

Glands: A gland is a structure which secretes a specific substance in the body.

Two types of glands:

1.Exocrine glands:A gland which secretes its product into a duct is called an exocrine gland.
Eg salivary gland, sweat gland, and sebaceous glands.

2.Endocrine glands: A gland which doesnot have a duct and secretes its product directly into the blood stream is called an endocrine gland.

Eg. Pituitary gland, thyroid gland and adrenal gland.

The role of sex hormones (testosterone hormone) :

1.Testosterone hormone produces make secondary sexual characteristics in boys at puberty.

2.This hormone causes the growth and development of male sex organs at puberty.

3.This hormone causes growth spurt in boys at puberty.

The role of sex hormones(estrogen hormone)

1.Estrogen hormone produces female secondary sexual characteristics in girls at puberty

2.This hormone causes the growth and development of female sex organs at puberty.

3. This hormone brings about the monthly preparation of uterus for pregnancy.

Menstrual Cycle:The process of ovulation and menstruation in women is called menstrual cycle. The menstrual cycle is a period of about 28 to 30 days during which an egg cell matures, the mature egg cell is released by the ovary, thickening of uterus lining takes place and finally the uterus lining breaks down causing bleeding in women if the egg cell has not been fertilised. This cycle is controlled by hormones.

Hormones other than sex hormones

1.Growth hormones :It controls the growth of the human body like the growth of bones and muscles.

2.Thyroxine hormone:Thyroxine hormone controls the rate of body's metabolism.

3.Insulin hormone:Its function is to lower the blood sugar level.

4.Adrenaline hormone:It prepares our body to function at maximum efficiency during emergency situations.