

8th SCIENCE REACHING THE AGE OF ADOLESCENCE

Q. What do you mean by adolescence?

Answer: The period of life, when the body undergoes changes, leading to reproductive maturity, is called adolescence. Adolescence begins around the age of 11 and lasts up to 18 or 19 years of age. In girls, adolescence may begin a year or two earlier than in boys

Q. What do terms teenagers and puberty signify.

Answer: A person of the age 13 to 18 or 19 years is called 'teenagers'. The period of life boys and girls become capable of reproduction called puberty. It happens to be at the age of 11 or 12 in girls and 14 to 18 in boys.

Q. List the changes that take place in the body at puberty.

Ans: the changes that take place in the body at puberty are:

- (i) Increase in height:
- (ii) The change in body shape
- (iii) The change in the voice box and voice
- (iv) Increase in the secretion of sweat glands and sebaceous glands
- (v) Development of Sex Organs

Q. What do you mean by Adam's apple?

Answer: At puberty the growing voice box in boys can be seen as a protruding part of the throat called Adam's apple. Appearance of Adam's apple marks the end of adolescence.

Q. What is menstruation? Explain?

Answer: In case of no fertilization, the released egg, and the thickened lining of the uterus along with its blood vessels are shed off. This causes bleeding in women once in about 28 to 30 days which is called menstruation. The first menstrual flow begins at puberty and is termed **menarche**. At 45 to 50 years of age, the menstrual cycle stops. Stoppage of menstruation is termed **menopause**.

Q. What causes pregnancy?

At puberty, the ovum begins to mature and is released by one of the ovaries once in about 28 to 30 days. During this period, the wall of the uterus becomes thick and capable to receive the egg. In this case egg is fertilized by sperm and begins to develop. This results in pregnancy.

Q. During the age between 13-18 year, boys start developing beard and moustaches .Give reason?

Answer: This is because of the secretion of sex hormones which bring about change in the body.

Q. Why physical exercise and balanced diet are essential during adolescence.

Answer: Adolescence is a stage of rapid growth and development. Hence to keep body healthy and fit, physical exercise and balanced diet are essential during adolescence.

Q. Why adrenaline hormone is called emergency hormones?

Answer: This is because it prepares body to fight and to run fast. It also helps the body to adjust to stress when one is very angry, embarrassed or worried.

Q. What is the term used for secretions of endocrine glands responsible for changes taking place in the body?

Answer: Hormones is the term used for secretions of endocrine glands responsible for changes taking place in the body.

Q. Sweat gland secretes more during adolescence. Why?

Answer: During adolescence, sebaceous glands enlarge and produce more sebum under the influence of hormones called androgens.

Q. What will happen if a person does not take iodized salts?

Answer: Deficiency of iodine in diet causes hypothyroidism due to which thyroid gland increase in size forming exophthalmic goiter.

Q. Why do acne and pimple appear during adolescence?

Answer: This is because of the increased activity of sebaceous glands (oil glands) in the skin. Sebaceous glands produce a substance called sebum, which is responsible for keeping the skin and hair moisturized. If sebum gets trapped in the pore, acne can develop.

Q. Some gland does not have duct. How are their secretion transported in the body?

Answer: Gland that does not have duct is called ductless gland like Endocrine glands. These gland release hormones directly into the blood stream. The blood transports their secretion in the body to target organ.

Q. Give reasons for the following

(a) Tadpoles growing in iodine deficient water have retarded growth.

Answer. The process of growth and development is regulated by thyroxine hormone which is produced by thyroid gland. Iodine is required for thyroxine production. That is why retarded growth is seen in tadpoles living in iodine deficient water.

(b) Voice becomes hoarse in adolescent boys.

Answer. Sometimes the muscles of the growing voice box go out of control and the voice becomes hoarse.

(c) Females have no role in determining gender of a child.

Answer. Male has both X and Y chromosomes but a female has only two X chromosomes . When sperm containing Y chromosomes fertilize the egg leads to a boy off spring (XY) . Hence, Females have no role in determining gender of a child.

Q. What are sex hormones? Why are they named so.?State their functions?

Answer: Sex hormones are the hormones that control the development of secondary sexual characteristics and also regulate the proper functioning of the sex organs. They are named so because they are produced in both males and females by the respective sex organs under the influence of the pituitary gland. In males, the testes are an endocrine gland, which secretes the hormone testosterone. This hormone causes the development of secondary sex characteristics like growth of facial hair. Similarly, in females the ovaries are endocrine glands, which secrete the hormone estrogen. This hormone causes the development of secondary sex characteristics like development of breasts and mammary glands inside the breasts.

Q. Write notes on secondary sexual characters?

Answer: The features which help to distinguish the male from the female they are called **secondary sexual characters**.

Secondary sexual characters in boys:

- (a) Growth of moustaches, beard and pubic hair along with hair on chest and thighs.
- (b) Elongation of hand and feet
- (c) Voice becoming deep and hoarse
- (d) Growth of reproductive organ

Secondary sexual characters in Girls:

- (a) Development of breasts and mammary glands inside the breasts.
- (b) Growth of pubic hair
- (c) Voice becoming shrill

Q. Why pituitary glands are known as master glands?

Answer: It is a tiny gland of the size of a pea attached to the hypothalamus of the brain. Pituitary glands are known as master glands because it produces hormones that control several other endocrine glands.

Q. Why does our body changes when we reach to teens?

Answer: when we reach to teens, Endocrine system of or body regulate the release of hormone that create change in our body.

Q. How sex determined in some species of Reptiles?

Answer: In some species of reptile including alligator and turtle, the sex of offspring is determined by the temperature at which egg is incubated.

Q. Discuss the problem associated with adolescence.

Answer: Problems faced by adolescents

(i) They usually do not feel comfortable in the family or parties, because their thought and likes usually do not match with the other people, neither with the children nor with the adults.

(ii) Due to hormonal changes they get problems such as pimples.

(iii) Adolescents usually start feeling insecure. Insecurity in adolescents arises sometimes because they are not able to cope up with the pressure to high performance.

(iv) Adolescents start taking drugs because of mental pressure. Once they are addicted to some drugs it would be very hard for them to leave it and they would not be able to lead a healthy life.

Q. Answer the following questions in one word

Q. What is the age of puberty in girl?

Ans: 10 – 12 years

Q. Which gland secretes Corticoid hormones?

Ans: Adrenal Glands

Q. What types of fertilization takes place in Man?

Ans: Internal Fertilization

Q. What is the other name of Endocrine garland?

Ans: Ductless gland

Q. What is the term used for development of Ovum without fertilization?

Ans: Parthenogenesis

Q. Name the hormones secreted by pineal glands?

Ans: Melatonin

Q. Which gland is called master glands?

Ans: Pituitary Gland

Q. When chromosome is not sex chromosomes, what is it called?

Ans: autosomes

Q. Name the term used for having X and Y chromosomes.

Ans: Sperm gamete

Q. Name the hormones secreted by testes?

Ans: Testosterone

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