

Chapter 6. Reaching the Age of Adolescence

Very Short Q&A:

Q1: The period of life when the body undergoes changes, leading to reproductive maturity, is called _____.

Ans: Adolescence

Q2: What is the age of adolescence?

Ans: 11 years to 19 years

Q3: Define puberty.

Ans: Puberty is the process of physical changes by which a child's body matures into an adult body and it becomes capable of sexual reproduction to enable fertilisation.

Q4: The boys and girls become capable of _____ with the onset of puberty

Ans: Reproduction.

Q5: What happens when there is sudden increase in height during puberty?

Ans: During puberty the bones of arms and legs elongate and make a person tall.

Q6: Height of a person depends on _____ inherited from parents.

Ans: Genes

Q7: What are the changes occurring in body shape of boys in adolescence?

Ans: Broader shoulder and wider chests.

Q8: What is Adam's apple?

Ans: In boys, at puberty, there develop a larger voice box which can be seen as a protruding part of the throat called Adam's apple.

Q9: Why some of the adolescent boys have a hoarse voice?

Ans: In boys, at puberty, there develop a larger voice box which can be seen as a protruding part of the throat called Adam's apple. Sometimes the muscles of the growing voice box go out of control and the voice becomes hoarse.

Q10: Name the gland responsible for causing acne and pimples.

Ans: Sweat and sebaceous glands

Q11: Name the sex organ of male and female.

Ans: Male: testes, female: ovaries

Q12: Name some secondary sexual characters of female.

Ans: Hair grows under the arms and in the pubic region, development of breast.

Q13: Define hormone.

Ans: Hormones are chemical substance secreted by endocrine gland that reaches to a particular body part via bloodstream.

Q14: Name the gland which secretes hormones.

Ans: Endocrine gland.

Q15: Name the female hormone released by ovary onset of puberty.

Ans: Estrogen

Q16: Name the male hormone released by testes onset of puberty.

Ans: Testosterone

Q17: What are the effects of release of testosterone hormone in boys?

Ans: This causes changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region.

Q18: What are the effects of release of estrogen hormone in girls?

Ans: This causes changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region.

Q19: Name the master gland which is responsible for secretion of estrogen and testosterone hormone.

Ans: Pituitary gland.

Q20: What do you mean by target sites?

Ans: Endocrine gland release hormones into the bloodstream in order to reach a particular site called target sites.

Q21: Menstruation occurs once in about _____ days.

Ans: 28 to 30.

Q22: Define menarche.

Ans: The first menstrual cycle, or first menstrual bleeding, in female humans.

Q23: Stoppage of menstruation is termed as menopause. True/False

Ans: True

Q24: Tick the right answer

Bleeding in women in about 28 to 30 days is

- a. **Menarche**
- b. **Menopause**
- c. **Menstruation**

d. **All of the above**

Ans: Menstruation

Q25: Reproductive life of a women last from _____ to _____.

Ans: Menarche to menopause.

Q26: What is the location of chromosome in a cell?

Ans: Inside the nucleus of cell.

Q27: Name the two sex chromosomes.

Ans: X and Y chromosomes.

Q28: Sex chromosome of mother determines the sex of unborn baby.True/False

Ans: False

Q29: Name some of the endocrine gland in human body.

Ans: Pituitary gland, thyroid gland, adrenal gland, pancreas, ovary, and testes

Q30: Name the hormone causing goitre.

Ans: Thyroxine

Q31: Name the hormone responsible for causing diabetes.

Ans: Insulin

Q32: Name the hormone which maintains the correct salt balance in the blood.

Ans: Adrenalin

Q33: Name the gland which produce insulin and adrenalin hormone.

Ans: Insulin is produced by pancreas and adrenalin is produced by adrenal gland.

Q34: Growth hormone is secreted by _____ gland.

Ans: Pituitary gland

Q35: The physical and mental well-being of an individual is called an individual's

- a. **Health**
- b. **Disorder**
- c. **Growth**
- d. **None of these**

Ans: Health

Q36: Define the diet which is appropriate for an adolescent.

Ans: Balanced diet, a balanced diet means choosing a wide variety of foods and drinks from all the food groups that is it should contain protein, carbohydrates, fats and vitamins in requisite proportions.

Q37: Metamorphosis in insects is controlled by _____ hormone.

Ans: Insect

Q38: Metamorphosis in frog is controlled by _____ hormone.

Ans: Thyroxine

Q39: It is important to eat _____ and maintain _____ hygiene during adolescence.

Ans: Balanced diet and maintain physical

Q40: Why we should Say NO to drugs?

Ans: Because drugs are addictive, once you will take it you will feel like taking it again and again, drugs harm our body in long run by ruining health and happiness.

Q41: The right meal for adolescents consist of

- a. Rice noodles and burger
- b. Rice, dal and Burger
- c. Chapattis, dal and vegetables
- d. Chapattis, chips and pizza

Ans: Chapattis, dal and vegetables

Q42: What are exocrine glands?

Ans: Exocrine glands are glands that secrete their products into ducts. They are the counterparts to endocrine glands, which secrete their products directly into the bloodstream.

Short Q&A:

Q1: What is the relation between adolescence and puberty?

Ans: Adolescence is the period of life when a body undergoes changes leading to reproductive maturity. These changes mark the onset of puberty.

Q2: Define the following:

- a. Adolescence
- b. Puberty

Ans:

- a. Adolescence: Human beings become capable of reproduction after the puberty sets in. The period of life when the body undergoes changes, leading to reproductive maturity, is called adolescence. Between the age of 11 years and 19 years children are called adolescents.
- b. Puberty: Puberty is the process of physical changes by which a child's body matures into an adult body and it becomes capable of sexual reproduction to enable fertilisation. The human body undergo several changes during adolescence; these changes mark the onset of puberty

Q3: Define the following:

- a. Adam's apple
- b. Secondary sexual characters

Ans:

- a. Adam's apple: In boys, at puberty, there develop a larger voice box which can be seen as a protruding part of the throat called Adam's apple. Sometimes the muscles of the growing voice box go out of control and the voice becomes hoarse.
- b. Secondary sexual characters: During puberty many features develop in boys and girls that help to distinguish male from female, which is called secondary sexual character. This causes changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region, this causes changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region.

Q4: Write short notes on increase in height during puberty.

Ans: There is sudden increase in height during puberty, at this time the bones of arms and legs elongate and make a person tall.

Q5: Write short notes on changes in body shape during puberty.

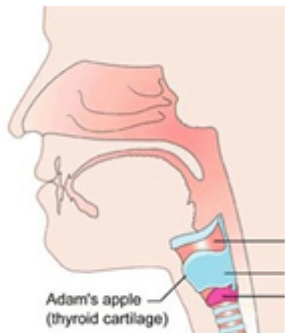
Ans: There is change in body shape during puberty which includes broader shoulder and wider chests in boys and in girls region below the waist becomes wider.

Q6: Write short notes on voice change at puberty.

Ans: In boys, at puberty, there develop a larger voice box which can be seen as a protruding part of the throat called Adam's apple. Sometimes the muscles of the growing voice box go out of control and the voice becomes hoarse.

Q7: Draw diagram of Adam's apple.

Ans:



Q8: What are the effects of increased activity of sweat and sebaceous glands?

Ans: The increased secretion of sweat and sebaceous gland in the skin causes acne and pimples on the face of young people.

Q9: Write short notes on development of sex organs at puberty.

Ans: At puberty male sex organs like testes and penis develop completely, the testes also begin to produce sperms, in the girls ovaries enlarge and start releasing mature eggs, these are mainly controlled by hormones like testosterone in male and estrogen in female.

Q10: Define secondary sexual characters.

Ans: During puberty many features develop in boys and girls that help to distinguish male from female, which is called secondary sexual character. This causes changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region, this causes changes

in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region.

Q11: Why changes in the body occur at adolescence?

Ans: The changes occurring in body at adolescence is mainly controlled by the action of hormones, Hormones are chemical substance secreted by endocrine gland that reaches to a particular body part via bloodstream. Changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region are all because of release of male hormone testosterone and changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region are all because of the female hormone estrogen produced by ovaries.

Q12: Write short notes on role of hormones in adolescence.

Ans: The changes occurring in body at adolescence is mainly controlled by the action of hormones, Hormones are chemical substance secreted by endocrine gland that reaches to a particular body part via bloodstream. Changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region are all because of release of male hormone testosterone and changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region are all because of the female hormone estrogen produced by ovaries.

Q13: The onset of puberty is controlled by hormones. Justify this statement.

Ans: Hormones from endocrine glands like testes and ovaries stimulates testosterone in male and estrogen in female respectively .These hormones are released in bloodstream and they reaches to their target sites that is the particular body parts where they have to show their effects, the target sites respond to the hormone and it stimulate to the changes in the body at onset of puberty. Thus we can say that the onset of puberty is controlled by hormones.

Q14: Define menstruation, menarche and menopause.

Ans: Testosterone is the male hormone and estrogen is the female hormone. The uterine wall in females prepares itself to receive the developing fertilised egg. In case if there is no fertilisation, the thickened lining of uterine wall breaks down and goes out of body along with blood, this is called menstruation. Menarche is the first menstrual flow which begins at puberty and stoppage of menstruation is called as menopause.

Q15: How the sex of the unborn baby is determined?

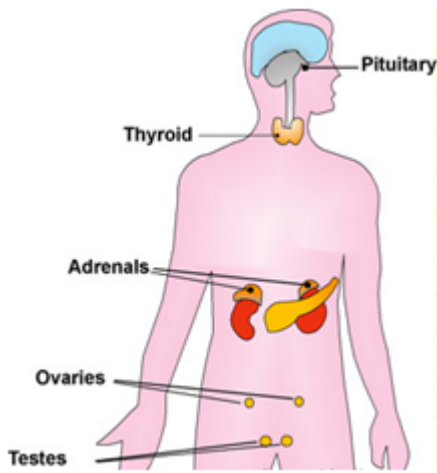
Ans: Female has two X chromosome while male has one X and one Y chromosome. The unfertilised egg has only one X chromosome but sperm are of two kinds one has X chromosome and other has Y chromosome, when sperm containing X chromosome fertilises with egg the zygote would have two X chromosomes and develop into female, similarly when sperm containing Y chromosome fertilises with egg the zygote would have one X and one Y chromosomes and develop into a male child.

Q16: Name some important hormones and disorders associated with those hormones in human body.

Ans: Under secretion of Insulin causes diabetes, thyroxine under secretion causes goitre.

Q17: Draw a diagram to show the position of endocrine gland in human body.

Ans:



Q18: Explain the function of pituitary gland.

Ans: The production of all hormones is under the control of pituitary gland. The pituitary gland is termed the "Master Gland" because it directs other organs and endocrine glands, such as the adrenal glands and thyroid glands to suppress or induce hormone production, it involves following functions

- Growth Hormone Production
- Production of Hormones That Act on Other Endocrine Glands
- Production of Hormones That Act on the Muscles and the Kidneys
- Endocrine Function Regulation
- Storage of Hormones Produced by the Hypothalamus

Q19: Explain the role of hormones in completing the life cycle of frogs and insects.

Ans: The life cycle of insects involves four different stage namely, egg, larva, pupa and adult. The changes from larva to adult is called metamorphosis, in insects metamorphosis is controlled by insects hormones in the same way in frog tadpole became a frog under the action of thyroxine hormone produced by thyroid.

Q20: Why it is important for an adolescence to have balanced diet?

Ans: Adolescence is the phase of growth and development of different body parts, thus it requires a complete healthy food that is the balanced diet.

Q21: Why it is important for an adolescence to have physical exercise?

Ans: Walking and playing in fresh air keeps the body fit and healthy. All youngsters should take walks, exercise and play outdoor games to keep themselves fit and for the proper growth and development of body.

Q22: How we can maintain physical and personal hygiene.

Ans: Take bath regularly, wash and clean all body parts every day. Use clean towel to wipe yourself, females should take special care of cleanliness during menstrual flow.

Q23: What is the cause of diabetes in human beings?

Ans: The under secretion of insulin hormone by pancreas leads to increase in blood glucose level and causes diabetes in human beings.

Q24: What is the cause of goitre in human beings?

Ans: The under secretion of thyroxine hormone by thyroid gland causes swelling of thyroid gland which causes swelling of the neck or larynx which is called as goitre.

Q25: What are the causes of AIDS?

Ans: AIDS is caused by a dangerous virus called HIV, this virus can pass on to a normal person from an infected person by Infected blood, Infected needles, multiple partners, Infected mother to her baby before birth, Injectable Drug Abuse.

Long Q&A:

Q1: Adolescence is also a period of change in a person's way of thinking. Justify the statement.

Ans: Adolescence are more independent than before and are also self-conscious, during adolescence intellectual development take place and teenagers tend to spend considerable time in thinking, infact it the time when brain has the greatest capacity of learning. Sometimes adolescent may feel more attraction towards opposite sex because of release of sex hormones and they may also feel insecure while trying to adjust to the changes in mind and body, but they should understand that these changes are natural part of growing up.

Q2: Explain changes occuring in human body at puberty.

Ans: There is sudden increase in height during puberty, at this time the bones of arms and legs elongate and make a person tall.

There is change in body shape during puberty which includes broader shoulder and wider chests in boys and in girls region below the waist becomes wider.

In boys, at puberty, there develop a larger voice box which can be seen as a protruding part of the throat called Adam's apple. Sometimes the muscles of the growing voice box go out of control and the voice becomes hoarse.

The increased secretion of sweat and sebaceous gland in the skin causes acne and pimples on the face of young people.

At puberty male sex organs like testes and penis develop completely, the testes also begin to produce sperms, in the girls ovaries enlarge and starts releasing mature eggs, these are mainly controlled by hormones like testosterone in male and estrogen in female.

During puberty many features develops in boys and girls that help to distinguish male from female, which is called secondary sexual character. This causes changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region, this causes changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region.

Q3: Explain secondary sexual characters and roles of hormones in initiating reproductive function

Ans: During puberty many features develops in boys and girls that help to distinguish male from female, which is called secondary sexual character. This causes changes in boys like production of sperms, growth of beard and moustaches, growth of hair on chest, under the arms and in pubic region, this causes changes in girls like production of ova, development of breast, development of mammary gland inside the breast, growth of hair under the arms and in pubic region.

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