

Endocrine System

1. How many types of Glands are there in our body?

Ans. There are two types of Glands in our body

- Endocrine Glands
- Exocrine Glands.

2. What are Endocrine Glands?

Ans. The hormone producing glands are called Endocrine Glands.

3. Why Endocrine Glands are called Ductless Glands?

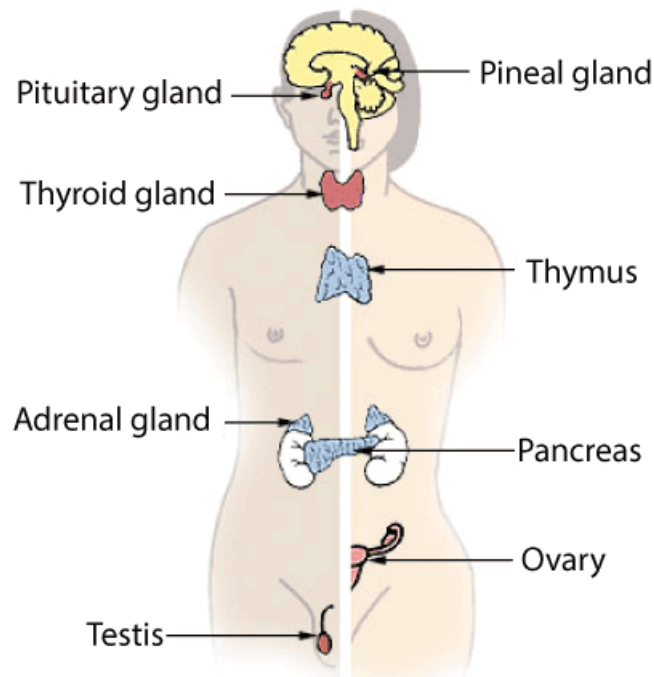
Ans. Endocrine Glands have no ducts and they pour their secretions directly into the blood. Therefore, they are also called ductless glands.

4. What is Hormone?

Ans. Hormone is a chemical substance secreted by an endocrine gland, which is directly poured into the blood stream and acts on a target organ or cell.

5. Mention the Endocrine Glands of our body?

Ans.

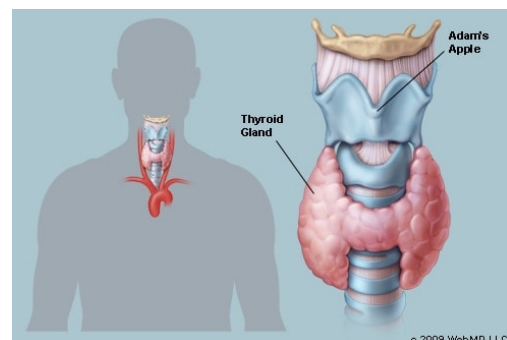


6. Where the Thyroid Gland situated?

Ans. The thyroid is a bilobed gland situated on either side of the wind pipe, just below the larynx.

7. Which hormones secrets from Thyroid Gland?

Ans. It secretes the hormone thyroxine which is an iodine-containing protein.



8. Why Thyroxine is helpful to us?

Ans. Thyroxine hormone speeds up the rate of most of the activities of the body. It stimulates growth in infants.

9. What happen due to insufficient secretion of Thyroxine?

Ans. Insufficient secretion of Thyroxine causes three ailments

- a. Simple Goitre
- b. Cretinism
- c. Myxoedema

10. What is Goitre?

Ans. It is an ailment caused due to the enlargement of the thyroid gland. It appears as a swelling in the neck. It occurs due to insufficient iodine in our daily food.

11. What is Cretinism?

Ans. It is an ailment which brings about abnormal development in an infant. This results in both physical and mental retardation.

12. What is Myxoedema?

Ans. It is a condition seen in an adult when insufficient amount of thyroxine is produced. It shows general sluggishness, with swelling on the face and hands.

13. What happen due to Oversecreting of Thyroxine?

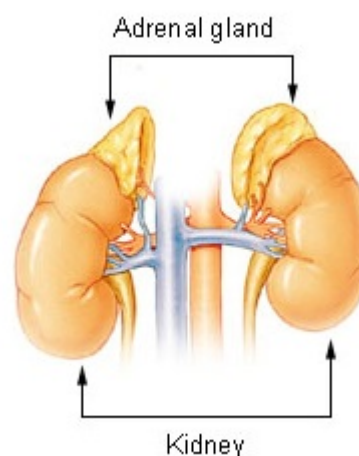
Ans. Oversecreting of thyroxine causes an increased metabolic rate, increased heartbeat, weight loss and general restlessness.

14. What are Adrenal Glands?

Ans. The adrenal glands are like caps over the kidneys. Each adrenal gland consists of two parts - a central medulla and a peripheral cortex.

15. How Adrenaline are helpful to us?

Ans. Medulla secretes adrenaline. This hormone is secreted when a person is under severe stress, fearful or angry. This hormone prepares the body to meet any emergency situation i.e., to face the danger, or flee from a situation. Hence, adrenaline is called the "fight or flight hormone". This hormone provides extra energy and strength to the body in any adverse situation. It increases the heart beat and the rate of respiration, accompanied with a rise in blood pressure, increase in blood supply to the muscles and release of more glucose into the blood by the liver.



16. Which hormones secrets by cortex?

Ans. The adrenal cortex secretes many hormones, but the well-known hormone is cortisone.

17. Why Cortisone helpful to us?

Ans. In general, the cortical hormones influence carbohydrate, fat, and protein metabolism. Also, they regulate the salt and water balance in the body. They adapt the body to "stresses" such as extreme heat, cold, infections, etc.

18. Where the Pancreas gland situated?

Ans. The pancreas is situated behind the stomach.

19. Why Pancreas Gland is called Islets of Langerhans?

Ans. Pancreas Gland has a cluster of hormone-secreting cells called Islets of Langerhans.

20. Which Hormones secrete from Pancreas Gland?

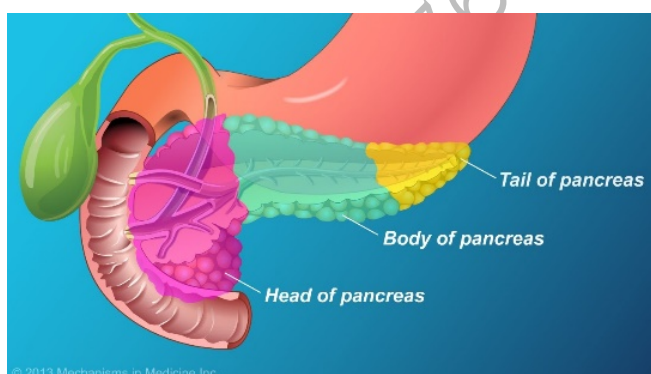
Ans. Pancreas Gland secrete two Principal Hormones

- a. Insulin
- b. Glucagon.

21. Why Insulin is important to our body?

Ans. Insulin lowers glucose from the blood stream in three ways

- i. Converts extra glucose to glycogen which is ultimately stored in the liver and muscles.
- ii. Induces the cells to burn extra glucose to produce heat and energy for the body.
- iii. Causes the cells to convert external Glucose into Fat.



22. What happen due to insufficient secretion of Insulin?

Ans. Insufficient secretion of insulin causes Diabetes.

23. What are the symptoms of Diabetic Patients?

Ans. A diabetic person has a high concentration of sugar (glucose) in the blood. He excretes a great deal of urine loaded with sugar and feels thirsty because of the loss of water through too much urination. Usually, he loses weight and tends to become weak.

In certain persons, the glucose level comes down due to over secretion of insulin. This is very harmful and may have serious consequences.

24. What are the purposes of Glucagon in our human body?

Ans. Glucagon stimulates the breakdown of glycogen in the liver to glucose. Thus, it raises the sugar level in the blood.

25. What is Pituitary Gland?

Why Pituitary Gland is called Master Gland?

Ans. Pituitary gland is a pea-sized gland, located below the brain. It secretes several hormones, some of which regulate the activity of other endocrine glands. So, the pituitary gland is also called the Master Gland.

26. Which hormones are produced by Pituitary Glands?

Ans. The major hormones which are produced by Pituitary Glands are:

- a. Growth Hormone
- b. Thyroid stimulating Hormone
- c. Follicle stimulating Hormone
- d. Prolactin

27. What are the functions of major hormones produced by Pituitary Gland?

Ans. The function of major hormones produced by pituitary glands are

- a. **Growth hormone:** It regulates growth especially in the adolescent years. Insufficient amount of growth hormone causes dwarfism and excess secretion results in gigantism.
- b. **Thyroid Stimulating Hormone:** It stimulates the production of sperms in males and the ova or egg in females.
- c. **Follicle stimulating hormone:** It influences the production of sperms in males and the ova or eggs in females.
- d. The pituitary gland plays an important role in the birth process as it produces hormones which cause the contraction of the muscles of the uterus during child birth.
- e. Prolactin: It stimulates the breasts to produce milk after child birth.

28. What is Adolescence?

Ans. The period of life when the body undergoes development leading to reproductive maturity is called Adolescence.

Adolescence is a transitional stage of physical and mental human development that occurs between childhood and adulthood.

The period between 10-19 years of age in an individual's life is called adolescence. It normally begins around the age of 12 and lasts up to 18 or 19 years of age. However, this period may vary from person to person. In girls, adolescence may begin a year or two earlier than in boys.

29. Which types of Physical changes during adolescence?

Ans. The following physical changes occur during Adolescence:

- **Increase in Height:** The most visible and conspicuous change during adolescence is the sudden increase in height. During this period, the bones of the arms and legs elongate. The weight of the body also increases. Initially girls grow faster than boys, but towards the end of their teenage, both reach their maximum height. The rate of increase in height varies in different individuals.
- **Change in body shape:** Boys generally have longer bones and more muscles as compared to girls. Boys have broader shoulders and narrow hips, while girls have a curvaceous body and broader hips due to the enlargement of hip bones.
- **Change in voice:** During adolescence the larynx or the voice box begins to grow. Boys develop larger voice boxes. This can be seen in boys as a protruding part of the throat which has been called Adam's apple. In girls, the voice box is smaller in size. Generally, girls have a high-pitched voice, whereas boys have a deep hoarse voice.
- **Increased activity of sweat and sebaceous Glands:** During adolescence, the secretion of sweat glands and sebaceous glands (oil glands) increases. Many young people get acne and pimples on the face at this time because of the increased activity of these glands in the skin.

30. Which types of mental changes occur at the time of Adolescences?

Ans. Some following mental changes occur at the time of Adolescences.

- Boys and girls become too conscious and start worrying about the growth in various parts of their body. They start feeling shy and feel hesitant in sharing their problems with others. Most of the time, they go on finding faults with themselves and develop a complex. Also, they spend a lot of their time in grooming.
- They become worried about their future although it is a juvenile stage to think about the future. Since they have no set goals, they start fearing, which develops a stage of depression in them. Scientifically, the cause of depression is the dramatic increase in the hormone level in the body. The hormones affect the brain that control emotions and moods. Normally, it is a temporary phase that goes away as one grows up.
- Boys and girls like to remain with their group of friends (also called peers) most of the time, since they feel safe in groups. They also try to imitate what others do in their peer group.
- This is a crucial age, as adolescence brings with it emotional and psychological changes. In the eagerness to be like their peers, boys and girls may get into wrong company, develop habits like smoking and drinking, or become addicted to certain types of drugs. This may cause harm to them in the long run.

31. What is Puberty?

Ans. Puberty is the period during which the reproductive systems of boys and girls mature.

In girls, it starts at the age of about twelve and the first sign of puberty is the development of breasts.

In boys, it starts at about thirteen years of age and the enlargement of the testes is its first sign.

32. What are Androgens and Oestrogens?

Ans. The male sex hormones are called androgens and the female ones are called oestrogens.

33. Which changes constitute the person's Secondary Sexual Characteristics?

Ans. The sex hormones bring about other changes as well. For example, in boys the voice breaks and hair start growing on the legs, chest and face. A boy who has been through puberty soon finds himself having to shave. In girls, breasts start developing, and fat is laid down in the thighs, giving the characteristic curves of the female body. The various changes which have just been described constitute the person's secondary sexual characteristics.

34. What is Adulthood?

Ans. The stage that follows adolescence is adulthood. An individual attains full physical growth and a great amount of emotional stability. By this time, the values learnt during childhood and adolescence are grounded and a strong vision for the future dominates. Stable relationships, intellectual and career pursuits and shouldering responsibilities take priority.

35. Why Proper and safe foods are needed at the time of Adolescence.

Ans. Adolescence is a stage of rapid growth and development. Hence, an adolescent should take care of his/her diet. They should take a balanced diet that includes proteins, carbohydrates, fats, vitamins and minerals. Milk is good for our bones. Fruits and fresh vegetables also provide nourishment.

Take freshly prepared food, and avoid stale food.

Cooked food and milk, butter, fish, meat and other perishable food items should be stored properly in a refrigerator.

Avoid excessive consumption of fast foods.

36. How should we follow Proper Lifestyle at the time of Adolescence?

Ans. Sleep and regular exercise are necessary for maintaining good health.

- Avoid long hours of continuous table work.
- Avoid watching television or playing games on computer for long hours.
- Avoid smoking and consumption of alcohol and drugs.

37. Why cleanliness is essential to us?

Ans. Certain basic precautions are necessary for maintaining personal hygiene, like –

- Always wash your hands with soap, before and after taking meals.
- Clean your teeth after each meal and before going to bed.
- Take bath regularly with clean water and good soap.
- Clothes, especially undergarments, should be changed daily. Wearing very tight clothes must be avoided.
- Regular toilet habits must be adopted for maintaining good health. After defecation, hands should be cleaned with water and soap.
- The feet should be cleaned every day and kept well protected.
- Hair should be washed regularly. Combing removes the dirt sticking to hair. Always use a clean comb.
- Eyes should be washed daily with clean and cold water. Rubbing of eyes with hands should be avoided to prevent the entry of germs into the eyes.
- If cleanliness is not maintained, there are chances of catching bacterial infection. Girls should take special care of cleanliness during the time of their menstrual cycle.

38. Why physical exercise is helpful to us at the time of Adolescence?

Ans. To keep the body fit and healthy, all young boys and girls should walk, exercise and play outdoor games regularly. Physical activity is also important to combat the stress and strain of adolescence.

39. What is Stress?

Ans. Stress is a state of mental or emotional strain and in very simple terms it can be called tension.

40. How can we manage stress?

Ans. There are steps we can follow to relieve the pressure and regain control.

- a. **Yoga:** Yoga may help reduce stress with:
 - Increased flexibility.
 - Increased muscle strength and tone.
 - Improved respiration, energy and vitality.
 - Weight reduction.
 - Improved athletic performance
- b. **Exercise:** Just 30 to 45 mins exercise at least three times a week can make you feel much healthier and in control of your own life.
- c. **Proper sleep schedule:** Improving our sleep schedule will go a long way in helping us to reduce stress.
- d. **Reading:** It is a great way to calm our mind and to gain knowledge.
- e. **Thinking positively:** Become a positive thinker and take more pleasure in our everyday interactions.
- f. **Laughing:** It improves our mood and makes us feel happier.
- g. **Deep Breathing:** It is another way to invoke the relaxation response to stress.
- h. **Meditation:** For meditation, sit in a quiet place for about 15-20 minutes every day, with our hands in a comfortable position, eyes closed, and focus on our breathing. Work on clearing your mind of negative or stressful thoughts and simultaneously concentrate on your inhaled and exhaled breath.
- i. **Time management:** Getting organized will help us to plan our work and have a better sense of what we need to do and how.
- j. **Hobbies:** Do something that we enjoy every day. It helps in diverting your mind from all the negative or stressful thoughts.