

## Chapter 6

# Endocrine Glands

### Point to be study:

- 6.1 What is adolescence?
- 6.2 Endocrine Glands and Hormone
  - Thyroid gland
  - Pancreas gland
  - Parathyroid gland
  - Pituitary Gland
  - Adrenal Gland
  - Pineal Gland
  - Thymus gland
- 6.3 Good Health in adolescence

### 6.1 What is adolescence?

In our life span we pass through the stages of childhood, adolescence, youth, maturity and old age. Begins around the age of 11 and lasts up to 18 or 19 years of age, our body undergoes many changes, is called Adolescence. In this age moustaches, beard grows on face, pimples on the face and rapid growth in length etc.

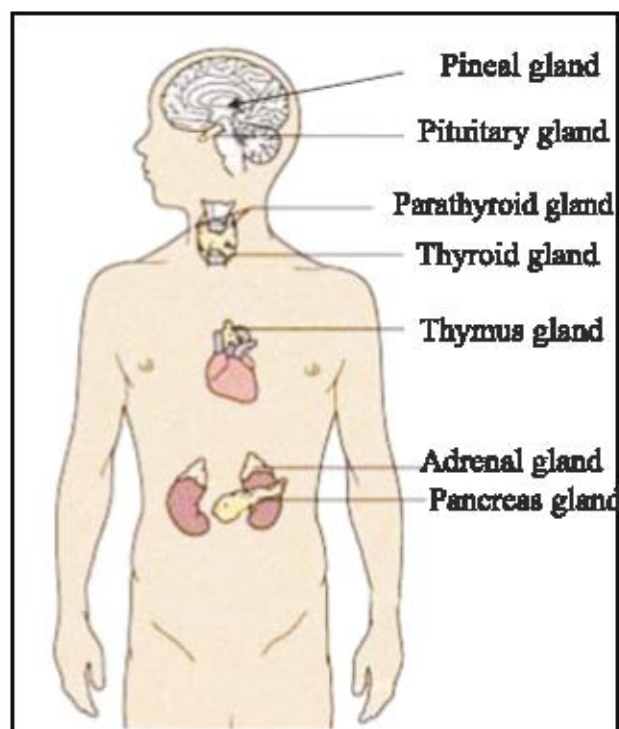
Why are these changes?

These physical changes occur in the body by certain chemical substances called hormones. These hormones are secreted by endocrine glands into the blood. In this chapter we will study endocrine glands, hormones secreted by them and their effects on the body.

It is a strange period of life when you are neither a child nor an adult. This is the period between childhood and adulthood.



## 6.2 Endocrine glands and hormones :



**Fig 6.1: Location of Endocrine glands in human**

### Pituitary gland

Sometimes we come in contact with such persons, which is very small (dwarf) or too tall. His stature has remained longer or too short, why?

It is caused by a growth hormone secreted by the pituitary gland. This hormone regulates the body's growth. If there is a lack of this hormone in childhood, person remains dwarf. Excessive Secretion of this hormone, some individuals got more than eight feet height.

### Thyroid gland :

Khushi went to market with her father to buy household goods. When shopkeeper gave him a bag of salt, by returning a bag of salt, father said that they needed iodized salt. Khushi was wondered, why father bought iodized salt. When asked to her father, he said



**Fig 6.2: Goiter disease  
Throats is bulging**



that in our throat thyroid gland is located. This gland secretes a hormone called as thyroxin hormone. Gland requires iodine for the formation of this hormone. Lack of iodine in our diet, we may suffer from a disease called goiter. In this disease throats is bulging (Figure 6.2).

### **Pancreas gland :**

On 15th August sweets were distributed in school. Khushi was also support this work. Hindi teacher did not eat sweets. The doctor advised him to eat less sweet. On the second day Khushi asked to her science teacher why the doctor gave her the advice to eat less sugar. He said that madam is suffering from diabetes disease. This disease is caused by a deficiency of insulin hormone in blood. Its formation has been taken place in pancreas gland of the body. If this hormone is not secreted in proper amount, increases the amount of glucose in the blood that is harmful to our body.

### **Adrenal glands :**

You will often see that when you get angry, or before result declaration or when your mind is anxious, your heart beats faster. Blood pressure of body increases. Adrenalin hormone prepares our body to face crisis situations. This hormone is secreted by the adrenal gland.

### **Parathyroid gland :**

Four small glands are located in our throat. They secrete a parathyroid hormone. It regulates calcium level in our blood.

### **Thymus gland :**

The thymus gland is found in the breast. The size of the gland is large in children. It is also secrete a hormone called thymosin. In childhood the secretion of this gland is helpful in growth of genitals. Our body's ability to fight with germs is also due to secretion of this gland.

### **Pineal Glands :**

We often feel sleepy at night time. Get up at a certain time in the morning. Why does this happen. There is a very small gland in the center of our brain. This gland secretes a hormone called Melatonin. Our sleep-wake cycle is regulated by Melatonin hormones. In addition to that this gland also regulates reproductive hormone.



In addition to the above there are some other endocrine glands found in our body, you will study about them in further classes.

### 6.3 Health and adolescence:

In adolescence rapid growth in body takes place. For Balanced growth it is necessary for us to be in good health. The following things is necessary for good health in adolescence

#### Nutrition:

Adolescence is a stage of rapid growth and development. Therefore adolescent's diet must include proteins, carbohydrates, fats, vitamins and minerals in requisite proportions. Our Indian meal of roti, rice, dal (pulses) and vegetables is a balanced meal. Milk is a balanced food in itself. Fruits also provide nourishment. Iron makes blood. Leafy vegetables, jiggery, meat, citrus, amla are iron-rich food. They must include in diet.

#### Personal Hygiene

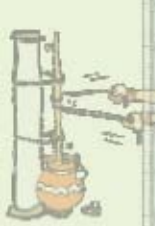
Everyone should have a bath at least once every day. It is more necessary for teenagers because the increased activity of sweat glands sometimes makes the body smelly. All parts of the body should be washed and cleaned every day. If cleanliness is not maintained there are chances of catching bacterial infection.

#### Physical exercise

Walking and playing in fresh air keeps the body fit and healthy. All teenagers should take walk, exercise and play outdoor games.

#### Say "NO" to Drugs

If anybody suggests that you will get relief if you take some drugs, just say 'No' unless prescribed by the doctor. Drugs are addictive. If you take them once, you feel like taking them again and again. They ruin health and happiness. You must have heard about AIDS which is caused by a dangerous virus, HIV. This virus can pass on to a healthy person from an infected person by sharing the syringes used for injecting drugs.





### What have you learnt:

- Begins around the age of 11 and lasts up to 18 or 19 years of age our body undergoes many changes, is called Adolescence.
- Hormones are secreted by endocrine glands
- Iodine deficiency in diet cause of disease called goiter.
- Diabetes disease is caused by a deficiency of insulin in blood.
- The growth hormone secreted by pituitary gland regulates growth of body.
- Pineal gland secretes a melatonin hormone.
- Adrenalin hormone prepares our body to face crisis situations.
- In adolescence for good health balanced diet, personal hygiene, physical exercise, to stay away from drug abuse is necessary.
- Thyroid, pancreas, parathyroid, pituitary, adrenal, pineal, thymus etc. glands are found in our body.

### Exercises

#### Choose the most appropriate option -

1. Name of Endocrine gland secretes insulin -  
 (a) Pituitary Gland (b) Thyroid  
 (c) Pancreas (d) Adrenal ( )
2. Which element deficiency in our diet causes goiter?  
 (a) Calcium (b) Iron  
 (c) Iodine (d) not any ( )



3. What is necessary for good health in adolescence?
- (a) Balanced diet (b) Personal Hygiene  
(c) Physical exercise (d) all of the above ( )

**Fill in the blanks -**

1. Endocrine gland secretes hormone in.....
2. ....disease is caused by deficiency of the insulin hormone in the blood.
3. ....hormone prepares our body to face crises.
4. The size of the .....gland is large in children.

**Short answer type questions -**

1. Define adolescence.
2. If a person has a very big and bulging throat what is the likelihood of disease?
3. Which hormone deficiency causes diabetes? What is the function of this hormone?
4. If a person has diabetes, what advise will you give him?

**Long answer type questions -**

1. What are the things essential for good health, in adolescence write an article?
2. Which endocrine glands have our body? Describe the.

**Activity -**

1. Prepare a list of endocrine glands and fix it in a classroom.
2. Prepare a chart of location of endocrine glands in a body and fix it in a classroom.
3. Identify patients with hormone deficiency or excess in your local area, prepare a list and as possible as examine them by physician.
4. Prepare a table on chart to demonstrate endocrine glands, their hormones, function of hormones and excess and deficiency of hormones secretion.

