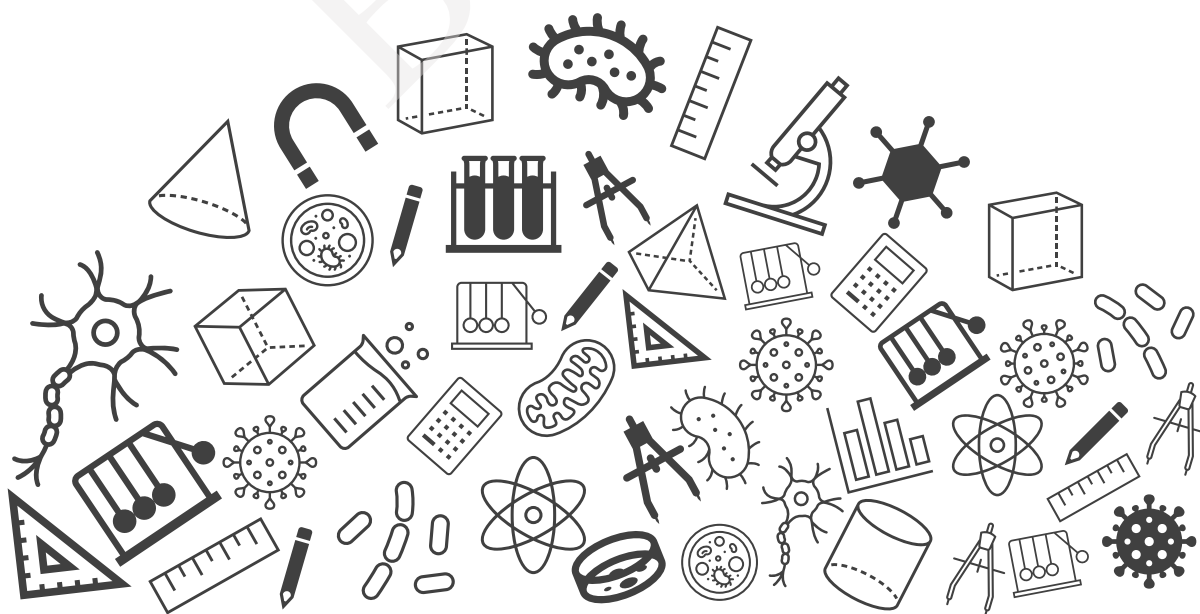




# Grade 08

## Chapter Notes





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# BYJU'S Classes

Class Notes

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Reaching the Age of  
Adolescence

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Grade 8

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# Reaching the Age of Adolescence



1

## – Different Phases in Human Life

- 1.1 Phases in human life
- 1.2 Adolescence

2

## – Puberty

3

## – Changes During Puberty

- 3.1 Physical changes
- 3.2 Emotional changes
- 3.3 Secondary sexual changes

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## – Reproductive Phase in Females

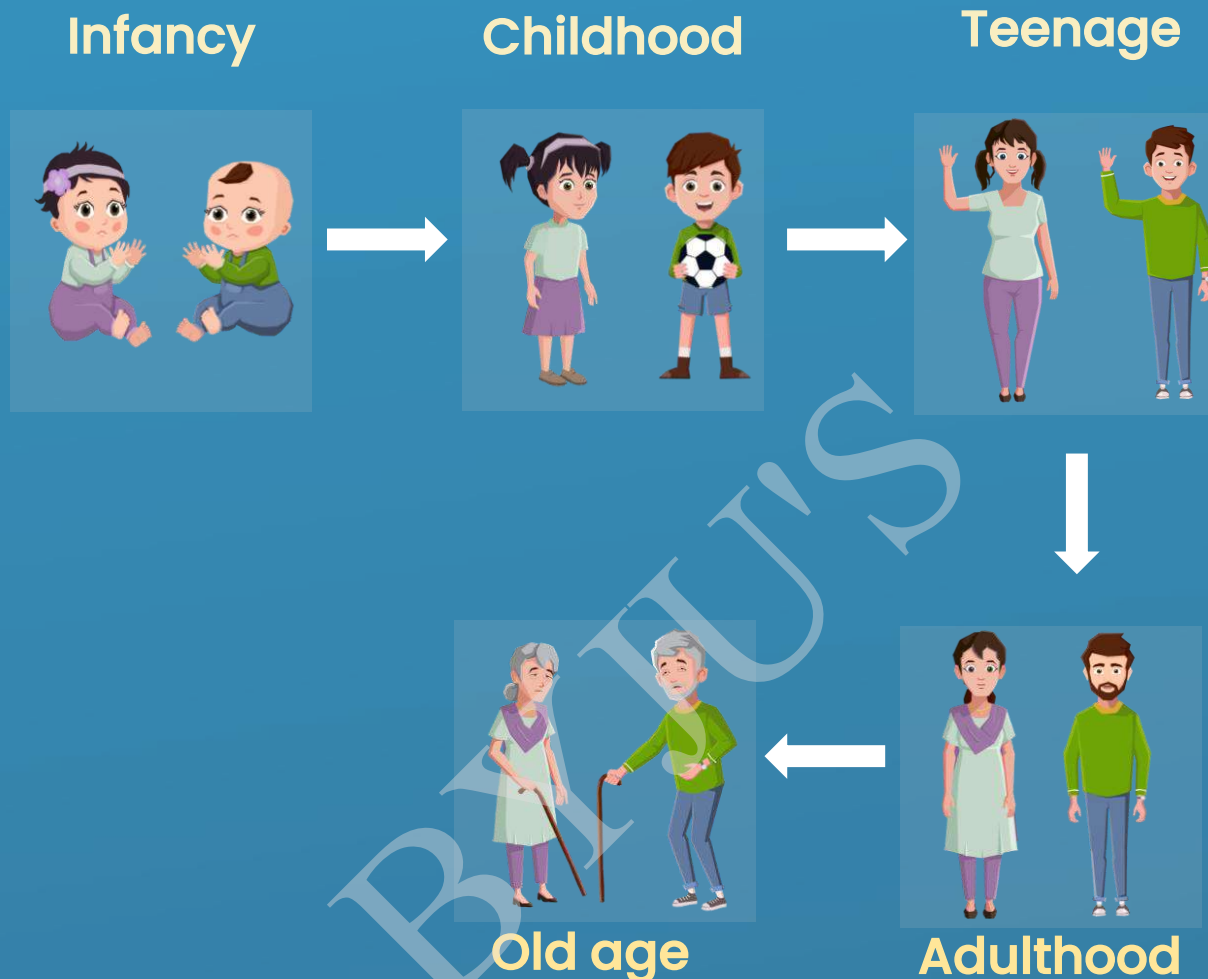
- 4.1 Ovulation
- 4.2 Fertilisation
- 4.3 Menstruation

5

## – Sex Determination

# 1. Different Phases in Human Life

## 1.1 Phases in Human Life



## 1.2 Adolescence

- Adolescence is the transitional stage from childhood to adulthood and it occurs between the ages of 11 and 19.
- Since this period covers the 'teens' (13 to 18 or 19 years of age), adolescents are also called teenagers.

## 2. Puberty

B

During adolescence, there is a series of physical and emotional changes as it marks the onset of **puberty**.

### 3. Changes During Puberty



#### 1. Physical changes

Changes that happen in the body

#### 2. Emotional changes

Affects emotions

#### 3. Secondary sexual changes

Bodily signs of sexual maturity



## 3.1 Physical changes

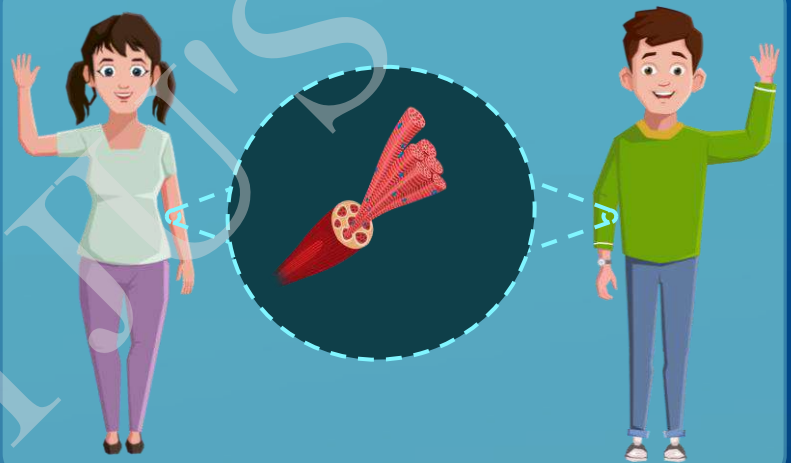
### Increase in Height

- During puberty, bones of arm and legs elongate which makes a person tall.



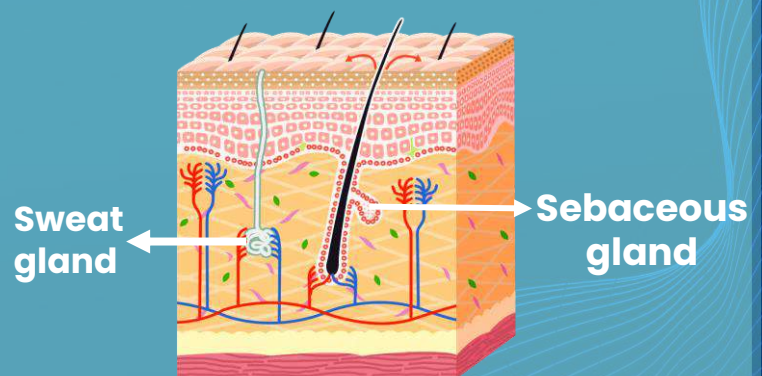
### Change in shape

- Boys: Broader shoulders, wider chests
- Girls: Widening of waist



### Appearance of acne

- Increased activities of sweat glands and sebaceous glands cause pimples.



## 3.1 Physical changes

### Change in voice

- Boys: Deep voice due to development of Adam's apple
- Girls: High-pitched voice

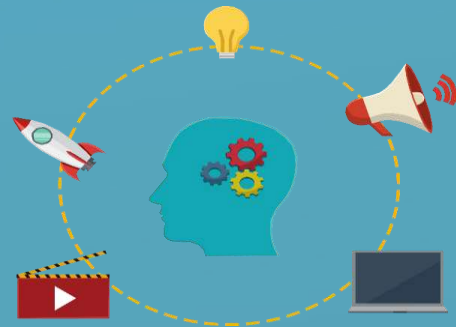


**Adam's apple** is partial growth of voice box which is seen as the protruding part of the throat.

## 3.2 Emotional changes

### Positive Emotions

- Increased brain activity
- Desire to learn new things



### Negative Emotions

- Mood swings
- Aggression



## 3.3 Secondary Sexual changes

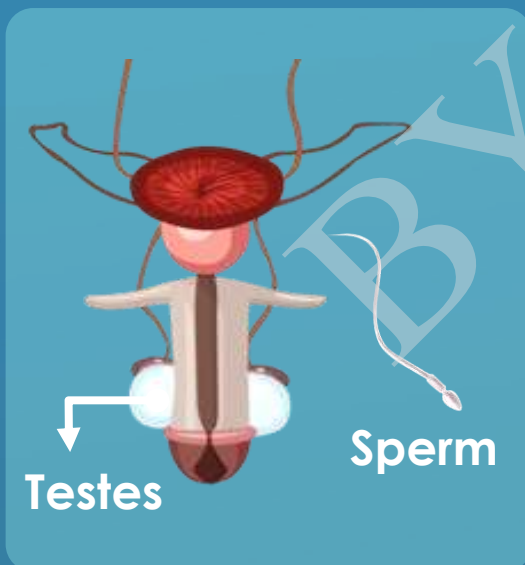
### 3.3.1 Definition

- The features that help to distinguish the male from the female are called secondary sexual characters.

### 3.3.2 Development of sex organs

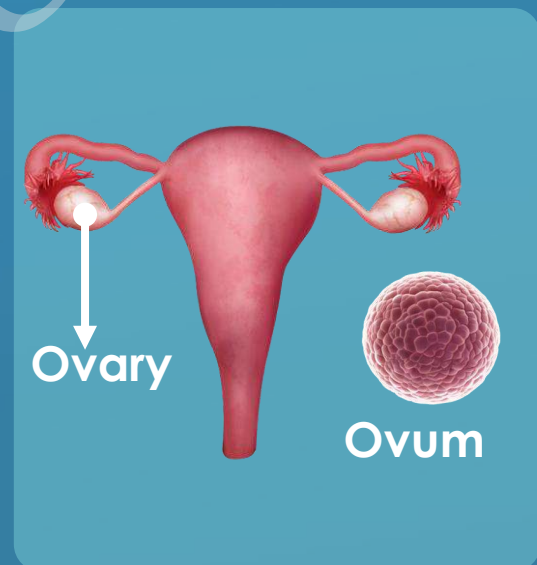
- Secondary sexual changes involve the development of sex organs.

#### Male Reproductive System



- Testes produces sperms
- Secretes testosterone

#### Female Reproductive System

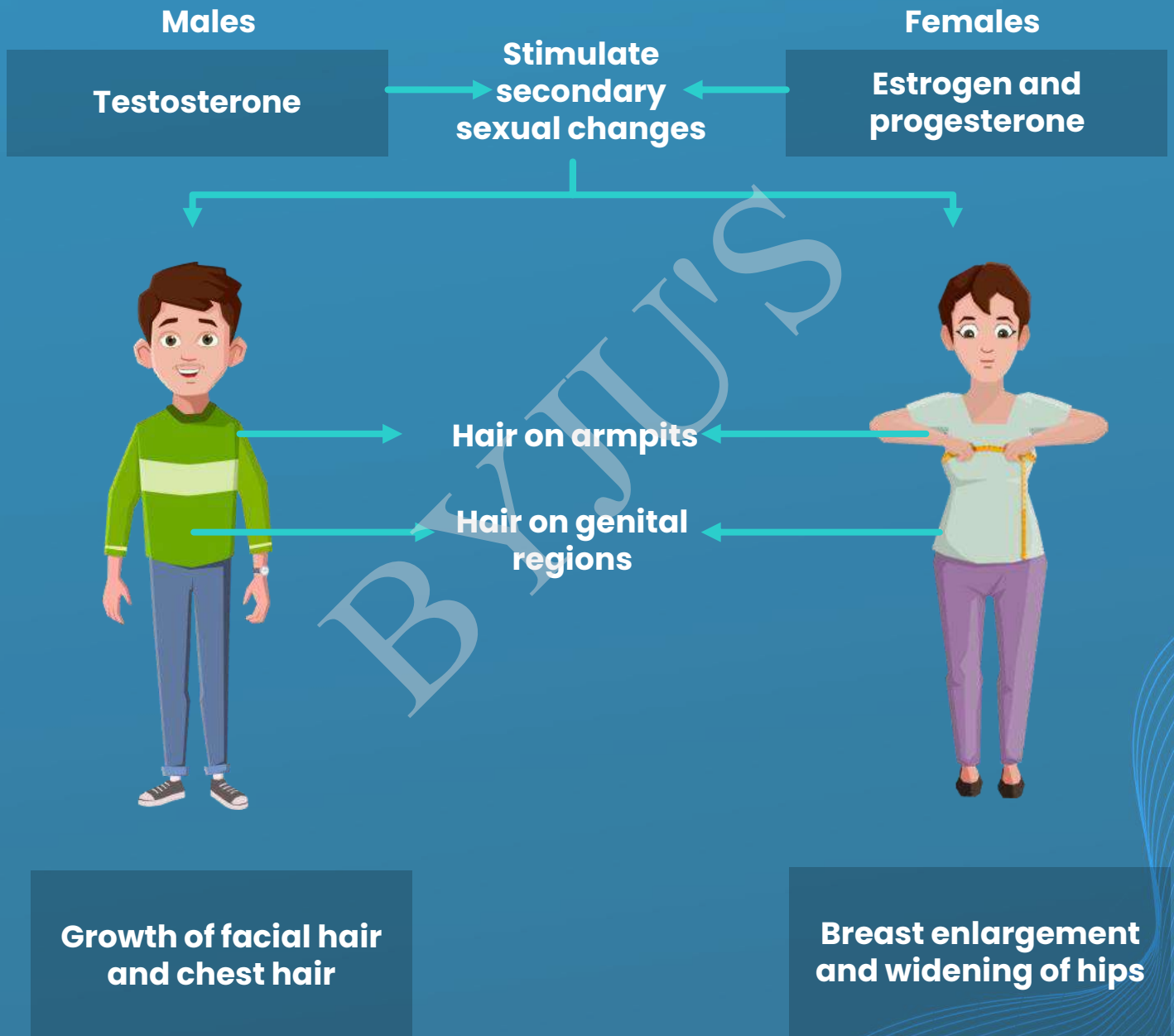


- Ovary produces ovum
- Secretes progesterone and estrogen



## 3.3 Secondary Sexual changes

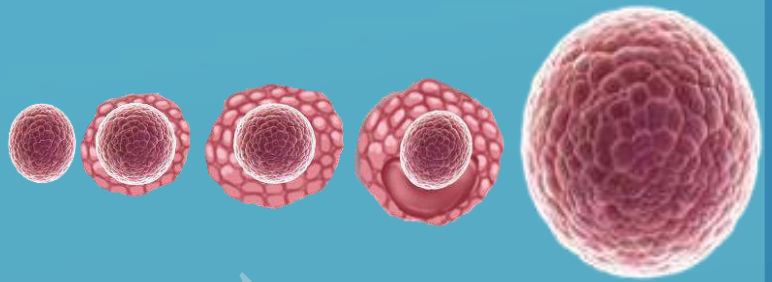
### 3.3.3 Development of secondary sexual characters



## 4. Reproductive Phase in Females

### 4.1 Ovulation

- Release of an egg from the ovary
- One ovum develops alternately in each ovary



### 4.2 Fertilisation

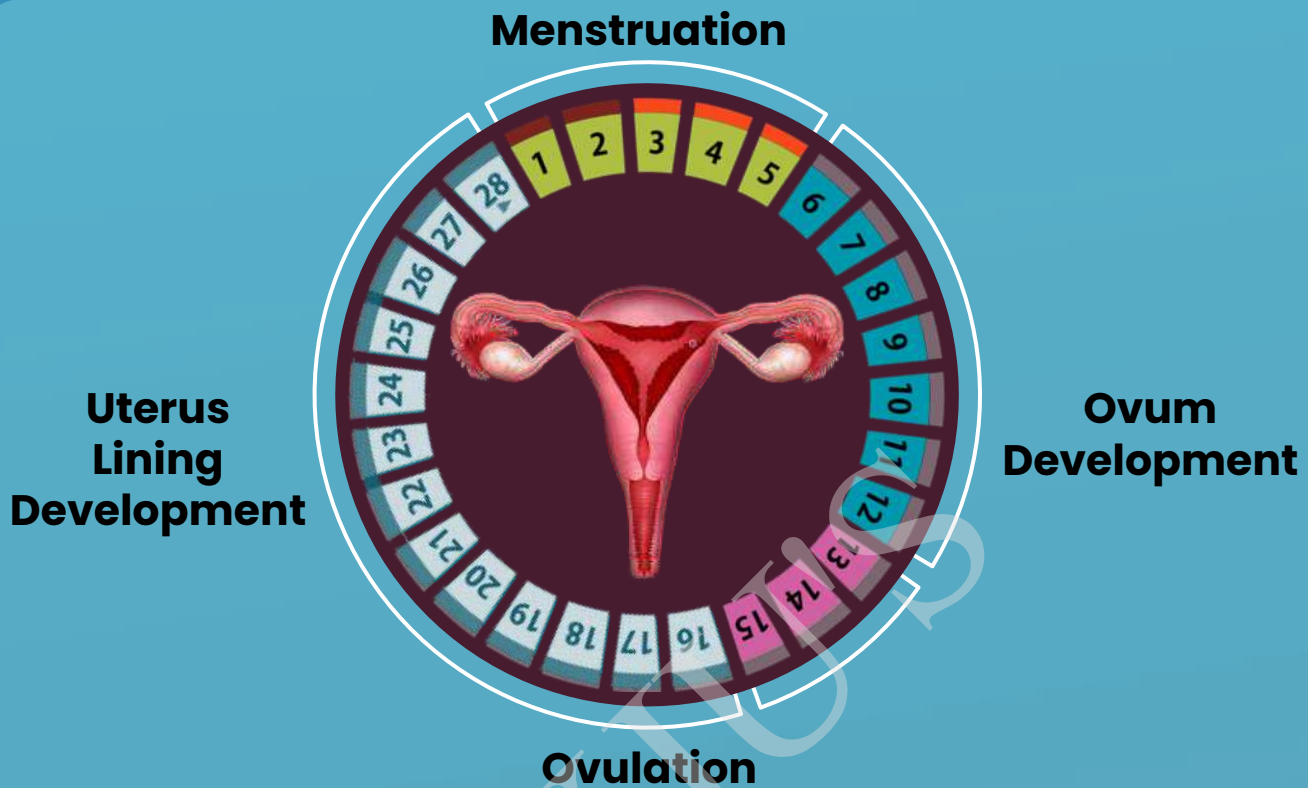
- Fusion of male sperm and female egg
- Leads to zygote formation



- In females, the reproductive phase of life begins at puberty from 10 to 12 years of age.
- It generally lasts till the age of approximately 45 to 50 years.

## 4. Reproductive Phase in Females

### 4.3 Menstruation



- Discharge of blood, mucus and unfertilised egg from the vagina is known as menstruation.
- A menstrual cycle lasts on an average is 28 days long.
- The phases of menstrual cycle are:
  - Menstruation – Days 1 to 5
  - Ovum development: Days 6 to 12
  - Ovulation: Days 13 to 15
  - Uterus lining development: Days 16 to 28

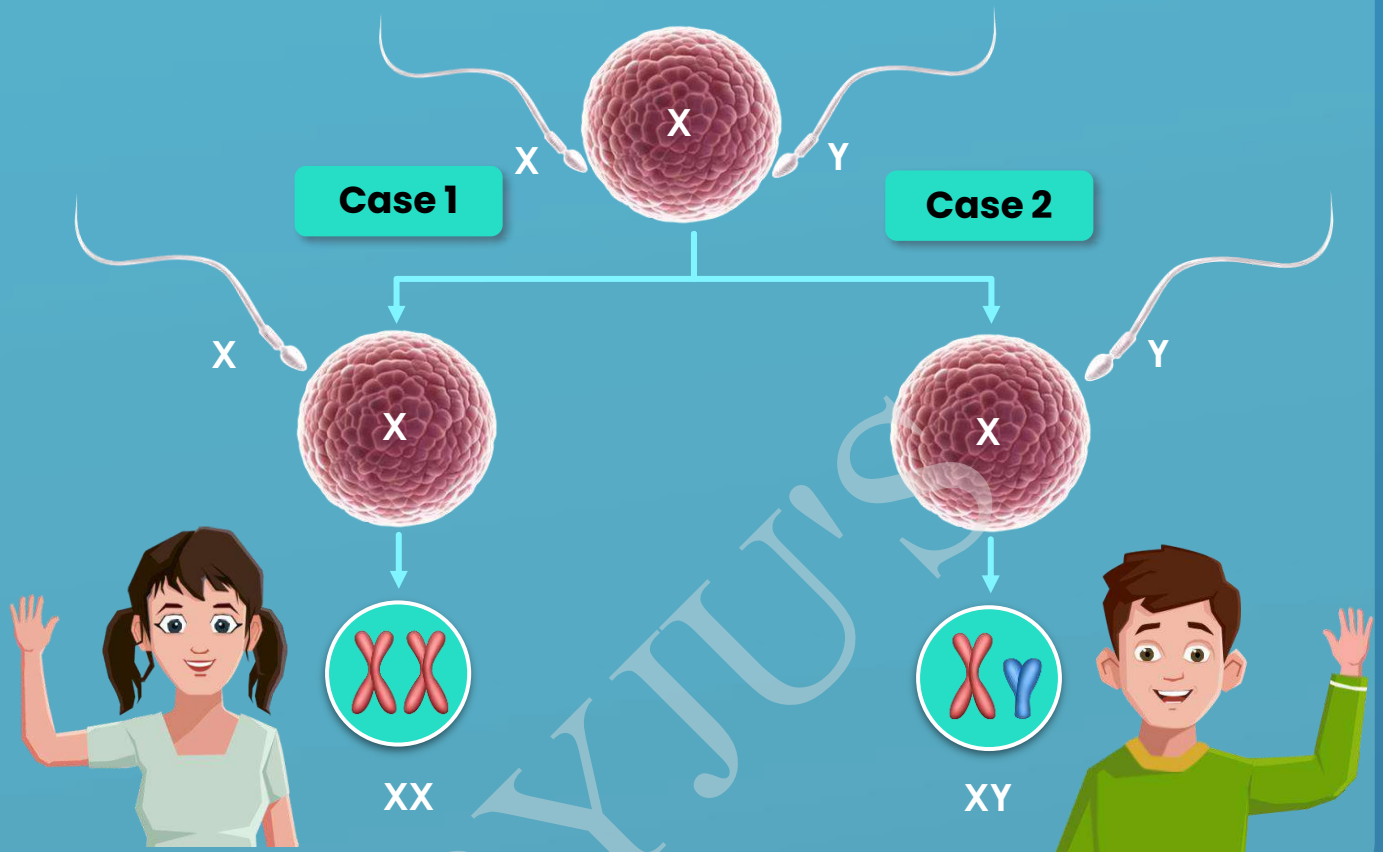


- **Menarche** is the beginning of the first cycle of menstruation.
- **Menopause** is the complete stoppage of menstruation.



## 5. Sex Determination

### 5.1 Boy or Girl?



- Nucleus contains chromosomes which are thread-like structures that carry the genetic information.
- Humans have 23 pairs of chromosomes, i.e 46 chromosomes in total.
- Of the 23 pairs of chromosomes, one pair of chromosomes are known as sex chromosomes.
- An ovum has 22 + X chromosomes, while a sperm has 22 + X or Y chromosomes.

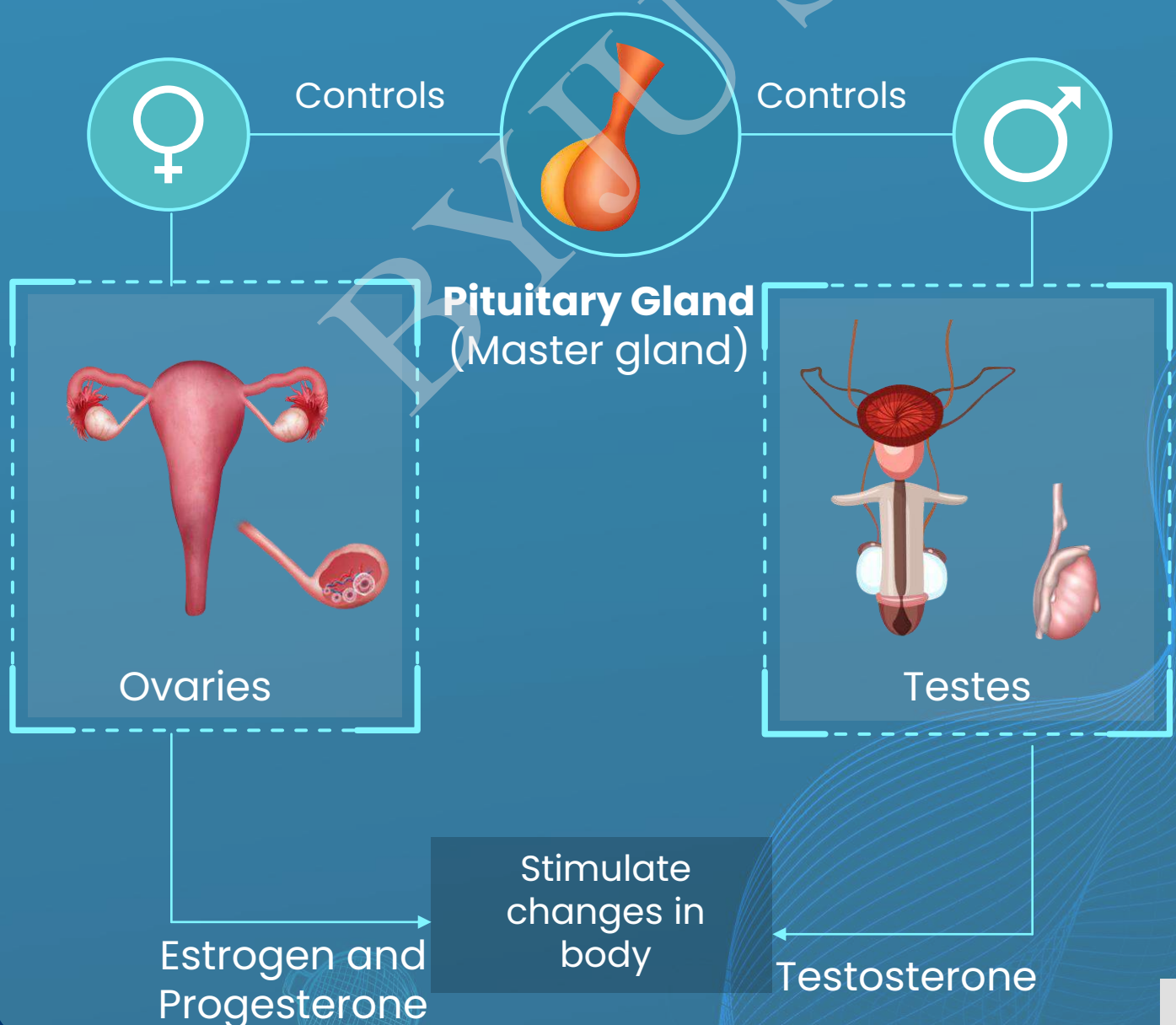


## 6. Glands and Hormones

### 6.1 Definition

- Glands are groups of specialised cells that release certain substances.
- Hormones are the chemicals that are responsible for certain changes in the body.
- These hormones are produced in the gland and are then released into the bloodstream whereby the circulatory system carries it to the target site.

### 6.2 Hormones released during puberty



## 7. Endocrine Glands

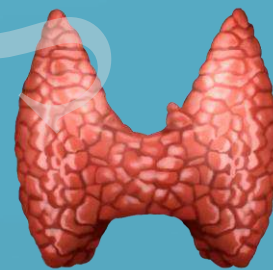
### Pituitary Gland

- The pituitary secretes many hormones that stimulates other endocrine glands to release its secretion.



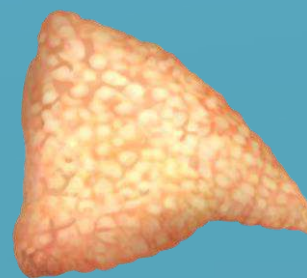
### Thyroid Gland

- Thyroid gland is a butterfly shaped gland located in the throat region.
- Secretes thyroxine hormone.



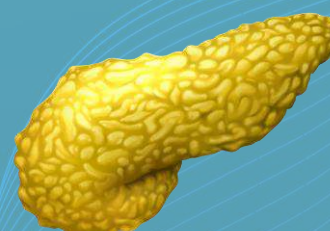
### Adrenal Gland

- The adrenal gland is located on top of kidneys.
- Secretes adrenaline hormone when pituitary gland sends signal to it.



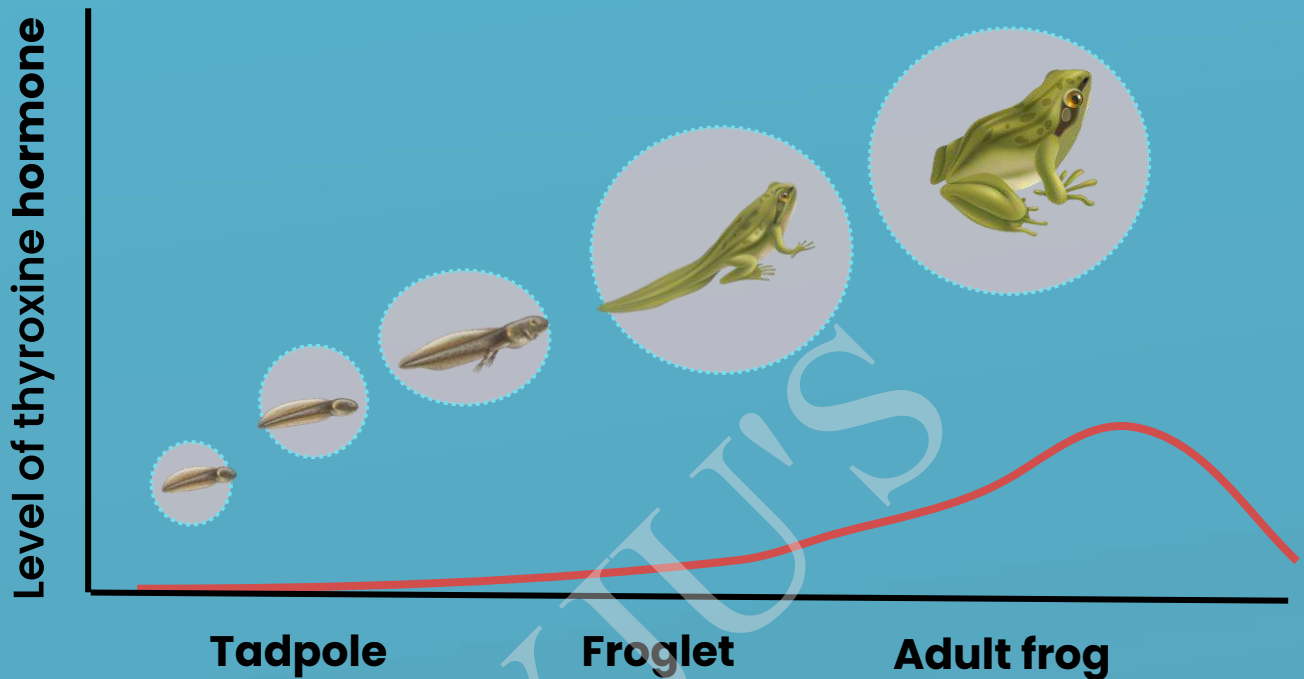
### Pancreas

- Regulates blood sugar level in the body.
- Insulin helps the cells to take up glucose from the blood, this decreases blood glucose level



## 8. Metamorphosis

### 8.1 Role of Hormones in Metamorphosis



- Transformation of a larva into an adult frog through a series of continuous changes is called metamorphosis.
- In frogs, this transformation is controlled by thyroxine which is released from thyroid gland.
- In the case of tadpoles, the thyroxine level is lowest while it is highest when the froglet becomes an adult frog.



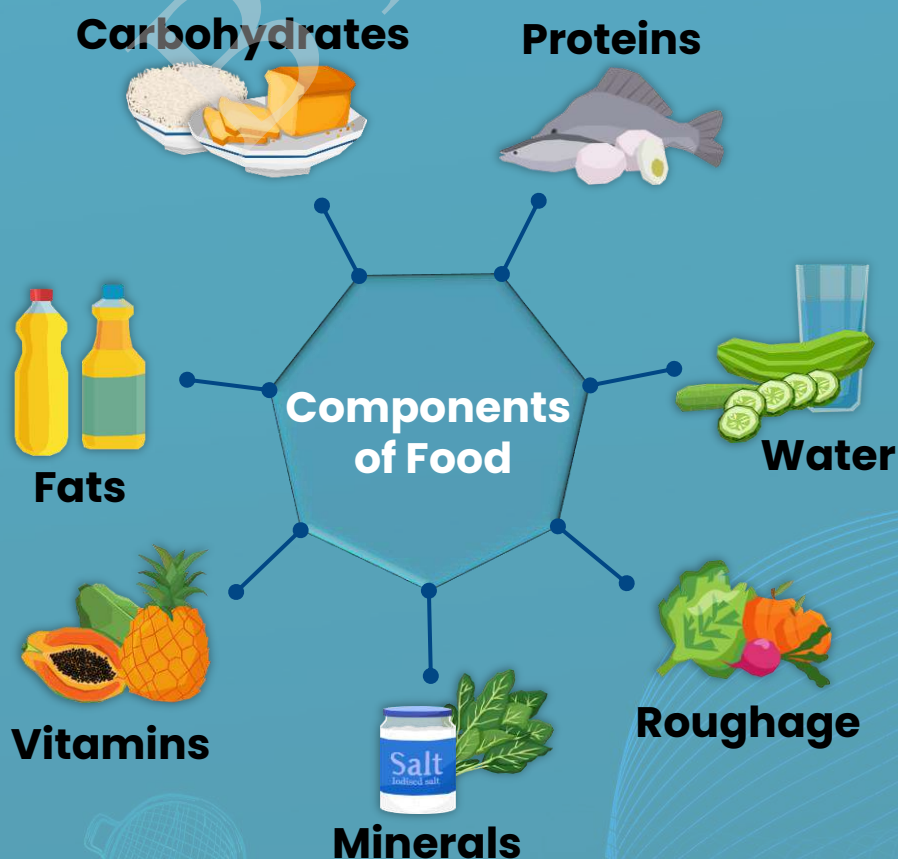
## 9. Reproductive Health

### 9.1 Introduction to Health

- The physical and mental well being of an individual is regarded as an individual's health.
- To keep the body healthy, every human being, at any age, needs to have a balanced diet. The person must also observe personal hygiene and undertake adequate physical exercise.

### 9.2 Balanced diet

- A balanced diet means that the meals include proteins, carbohydrates, fats and vitamins in requisite proportions.
- Adolescents need right proportion of nutrients for proper growth and development.





## 9. Reproductive Health

### 9.3 Personal Hygiene

- Every teenage should maintain cleanliness.
- If cleanliness is not maintained there are chances of catching bacterial infection.



**Brush teeth**



**Wash hands**



**Regular shower**



**Wear clean clothes**



**Change sanitary pad**

### 9.4 Physical exercise

- Walking and playing in fresh air keeps the body fit and healthy. All young boys and girls should take walks, exercise and play outdoor games.



**Exercise regularly**



**Good sleep**



**Positive mindset**

## 9. Reproductive Health

### 9.5 Drug awareness

- Drugs are addictive. If you take them once, you feel like taking them again and again.
- They harm the body in the long run. They ruin health and happiness.



**Say no to drugs**



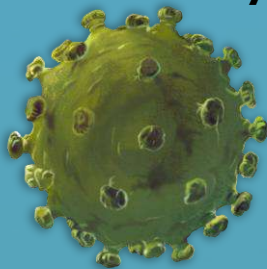
**Say no to cigarette**



**Say no to alcohol**

### 9.6 AIDS

**Pathogen- Human Immunodeficiency Virus**



**Organ affected- Immune system**



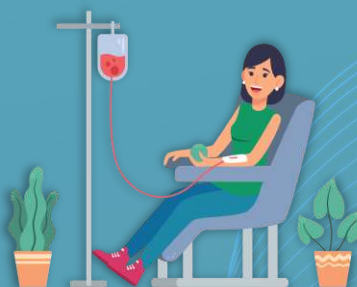
**Modes Of Transmission**



**Sexual Contact**



**Pregnancy**



**Blood Transfusion**



**Sharing of needles**