

Chapter – 10

Reaching the age of Adolescence

- Humans become capable of reproduction after puberty sets in. Between the ages of 11 years and 19 years children are called adolescents.
- The onset of puberty brings about growth of the reproductive organs. Hairs grow at various places on the body. Breasts develop in girls and facial hair (moustache and beard) appear in boys. Voice of boys become hoarse as voice box enlarges during adolescence.
- Children gain height during adolescence.
- **Puberty:** It is the time when sex organs begin to work. It brings about growth in reproductive organs and changes in the body. Puberty starts at the beginning of adolescence. The onset of puberty starts much earlier in girls, between 8 and 13 years of age, whereas it starts between 10 and 14 years of age in boys and lasts upto 2 to 4 years.
- **Changes during Puberty:**
 - (i) **Increase in Height:** The bones of the legs and arms elongate and the individual becomes tall and lanky.
 - (ii) **Changes in Body Shape:** In boys, the body becomes more muscular, the shoulder becomes wider. In girls, the body shows curves in certain parts and the region below the waist become wider and broader.
 - (iii) **Change in Voice:** In boys, the voice becomes hoarse and heavy due to the extra growth of larynx (voice box). In girls, the voice becomes high pitched and shriller.
 - (iv) **Sweat and sebaceous glands:** They become more active and secrete more sweat and oil. Pimples or acne appear due to increased action of sebaceous glands or oil glands.
 - (v) Emotional aspects develop.
 - (vi) Mental and intellectual development is at its peak.
 - (vii) The sex organs grow and become functionally active. The testes start producing male gametes, called sperms. The ovaries grow and release one mature ovum in a

periodic cycle of 28 days.

- The onset of puberty and maturity of reproductive parts are controlled by hormones.
- **Hormones** are secretions of **endocrine glands** which pour them directly into the blood stream.
- Pituitary gland secretes hormones which include growth hormone and hormones that make other glands such as the testes, ovaries, thyroids and adrenals, secrete hormones. Pancreas secretes insulin, thyroid produces thyroxin and adrenals produce adrenalin.
- Testosterone is the male hormone and estrogens, the female hormone. The uterine wall in females prepares itself to receive the developing fertilised egg. In case there is no fertilisation, the thickened lining of the uterine wall breaks down and goes out of the body along with blood. This is called menstruation.
- Sperm and Ovum fuses together to form a zygote. Sex chromosomes in sperms determine the baby's gender. Humans have 23 pairs of chromosomes in each cell. A pair of chromosome forms the sex chromosomes. Males carry XY and females carry XX chromosomes. If a sperm carrying X fertilises the ovum with X chromosome, then the resulting baby is a girl. If a sperm carrying Y chromosome fertilises the ovum with X chromosome, then the resulting baby is a boy. Hence, males are responsible for the gender of the newly formed babies.
- **Reproductive Health:**
- It is important to eat balanced food and maintain personal hygiene during adolescence.
- Cleaning of private parts is important to prevent possible infections.
- The activity of sweat glands increases in puberty and releases bad odour from the body. Thus frequent bathing is necessary.
- Physical exercise keeps the body fit and healthy as it releases lot of sweat.
- Peer pressure is best addressed by self-confidence and a healthy lifestyle.