

CHAPTER 10

Reaching The Age of Adolescence

Reproductive phase of life in humans:

Adolescents become capable of reproduction when their testes and ovaries begin to produce gametes. In females, the reproductive phase of life begins at puberty 10- 12 years of age and generally lasts until the age of approximately 45 – 50 years.

The ova begin to mature with the onset of puberty. One ovum matures and is released by one of the ovaries once in about 28 to 30 days. During this period, the wall of the uterus becomes thick to receive the egg, in case it is fertilized and begins to develop. This results in pregnancy. If fertilization does not occur, the released egg and the thickened lining of the uterus along with its blood vessels are shed off. This causes bleeding in women, which is called menstruation.

Menstruation occurs once in about 28 to 30 days. The first menstrual flow begins at puberty and is termed ‘Menarche’. At 45 to 50 years of age, the menstrual cycle stops. Stoppage of menstruation termed “Menopause”. Hormones control menstrual cycle.

How is the sex of the baby determined?

- Instruction for determining the sex of baby lies within the fertilized egg or zygote.
- It is present in the thread like structure called chromosomes.
- All human beings have 23 pairs of chromosomes in nuclei of their cells. Two chromosomes among these are named as sex chromosomes.
- ‘X’ and ‘Y’ in males, ‘X’ and ‘X’ in females.
- Whether a baby is going to be a girl or a boy, depends on sperm, which fertilizes an ovum.
- When a sperm containing ‘X’ chromosome fertilizes the egg, the zygote would have two ‘X’ chromosomes and develop into a “Female child”.
- If the sperm contributes a ‘Y’ chromosome to the egg (Ovum) at fertilization, the zygote would develop into a “Male child”.

Hormones other than sex hormones:

The hormones secreted by the pituitary stimulate testes and ovaries to produce their hormones. You have already learnt that the pituitary gland is an endocrine gland. It is attached to the brain. Apart from the pituitary, the testes and the ovaries, there are other endocrine glands in the body such as thyroid, pancreas and adrenals. Thyroid gland was not producing the hormone ‘Thyroxine’ a disease called ‘Goitre’.

Pancreas was not producing the hormone ‘Insulin’ in sufficient quantities a disease called ‘Diabetes’. The adrenal glands secrete hormones, which maintain the correct salt balance in the blood.

Adrenals also produce the hormone adrenalin. It helps the body to adjust to stress. Thyroid and adrenals secrete their hormones when they received orders from the pituitary through its hormones. Pituitary also secretes growth hormone, which is necessary for the normal growth of a person.

