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STUDY NOTES

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CLASS- VIII (All Section)

DATE: 15-07-2020

## Science

### **CHAPTER: 9 Puberty and Adolescence**

#### **Today's Topic: Voice Change**

#### **Voice change:**

A clearly visible change, especially in boys, at puberty is noticed in the pitch of the voice. Before the onset of puberty, the **larynx** or the voice box of boys and girls is small. At puberty, the larynx begins to grow and boys develop larger voice boxes and longer vocal cords. As a result, the voice of boys becomes deeper because the length of the vocal cords determines the **pitch** of the voice. When the larynx grows larger in boys, it sticks out at the front of the throat and is commonly referred to as **Adam's apple**.

Generally, girls have a high pitched voice and less enlarged larynx. Compared to the near doubling of the size of the larynx in boys, the size of the larynx in girls grows only by one-third. Hence, the pitch of girls' voice does not change much.

#### **Increased sweat and oil secretion:**

Sweat glands are found under the skin of all mammal species and help to regulate the body temperature. Sebaceous glands are microscopic glands in the skin that secrete an oily material called sebum to lubricate the skin and hair of mammals. Sebum protects and waterproofs hair and skin and keeps

them from becoming dry, brittle and cracked due to dehydration. It can also inhibit the growth of some microbes on the skin.

During puberty, there is an increase in the secretions from the sweat and sebaceous glands. This may lead to the pores of the skin getting clogged and may result in the appearance of acne and pimples.

### **Development of reproductive organs:**

At puberty, both boys and girls undergo maturation of the reproductive organs, which are also known as the sex organs. This makes them capable of reproduction. The male sex organs-the testes and the penis-develop completely and sperm production by the testes begins. In girls, the ovaries enlarge and eggs begin to mature and are released into the oviduct.

### **Reaching mental, intellectual and emotional maturity:**

Since puberty brings major physical changes in adolescents, it is often accompanied by emotional stress and a change in their way of thinking. Adolescence is also the time when the brain has the greatest capacity for learning. Adolescents are more independent and self-conscious than before. Conversely, since an adolescent is exposed to new social situations, patterns of behaviour and social expectations, it brings a sense of insecurity and may lead to depression. Adolescents often show an impulsive urge to take immaturity action which may lead to risk-taking behaviour. In reality, the insecure or impulsive behaviour is unnecessary since the changes they see and feel are part of the natural process of growing up.

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