

# 14

## A Healthy and Long Life

### Lesson Plan

#### Contents

- ▶ Staying healthy: Curing and preventing disease.
- ▶ Medical Instruments: Clinical Thermometer, Stethoscope, Microscope, new machines.
- ▶ Surgery
- ▶ Medicine
- ▶ Preventing Diseases: Vaccination, Pasteurisation, etc.
- ▶ Basic Health Care

#### Objectives

- ▶ Learning how to live a healthy life.
- ▶ Understanding illnesses – their cure and prevention.
- ▶ Finding out about illnesses by using medical instruments such as clinical thermometer, stethoscope and microscope. And knowing about new, sophisticated instruments that help to detect disease correctly.
- ▶ Understanding what surgery is – why it is needed: removal of a diseased part, transplantation.
- ▶ Learning what medicine is: used for curing illnesses; the use of anaesthesia in surgery; dealing with bacteria that cause diseases; antibiotics.
- ▶ Understanding how to prevent diseases: the efforts made by medical scientists in this field – vaccination introduced by Dr Edward Jenner; pasteurisation introduced by Louis Pasteur.
- ▶ How to remain healthy – tips on regular health care for individuals.

#### Teacher's Aids

- ▶ Some of the instruments like thermometer, stethoscope and microscope.
- ▶ A visit to a hospital to see the other equipment used.
- ▶ Use the internet to show the different aspects of health.

- ▶ Draw attention to advertisements on TV, etc., regarding health.

### /// **Tips for Teacher**

- ▶ Focus not on the scary part of diseases, but on prevention and a healthy lifestyle.
- ▶ Draw attention to advertisements on TV, etc., regarding health.
- ▶ Suggest options: how to de-stress; learning dancing, aerobics, martial arts, yoga, bicycling, etc.; cultivating other interests like music, reading, writing, adventure sports, etc.

### /// **Gear Up and Background**

- ▶ We can choose to be healthy if we wish. We can choose a healthy lifestyle or an unhealthy one.
- ▶ Ask students to choose one of the two options shown: yoga/fitness/healthy lifestyle or junk food/bad physique/unhealthy lifestyle.
- ▶ Read the lesson aloud and explain and discuss as you read.
- ▶ There may be students with concerns about their own or their family's health. Carefully explain things such as congenital illnesses, etc., with great sensitivity.

### /// **Medical Instruments**

- ▶ Identifying and diagnosing diseases – why this is important.
- ▶ Instruments are used for diagnosis – some like the thermometer [normal and digital] can be used at home; stethoscope, etc., can be used by doctors and carried around; some are to be used in laboratories and hospitals.

### /// **Thermometer**

- ▶ Thermometer: measures temperature. Developed by G.D. Fahrenheit in AD1715.
- ▶ Body temperature: normal is 98.4° F or 38° C. F = Fahrenheit; C= Celsius
- ▶ If temperature is more than normal, the body has fever.
- ▶ Thermometers can be the usual ones with mercury or digital.

### /// **Stethoscope**

- ▶ Stethoscope: checks function of heart and lungs. Invented and developed by Rene Laennec, a French doctor, in 1816.
- ▶ Interesting story: how Laennec got the idea by watching kids whisper through a hollow log of wood; tried hearing through rolled newspaper and heard patient's heart-beat – developed the stethoscope.

### /// **Microscope**

- ▶ Microscope: makes small things look big.
- ▶ Probably developed by Zacharias Janssen, owner of an optician's shop in Holland.

- ▶ Interesting story: how he saw a fly enlarged through two lenses – developed ‘fleglass’.
- ▶ Galileo: Italian scientist, improved it and called it a ‘microscope’. Since then, improved by many scientists.
- ▶ Helps fight disease by enabling scientists and doctors to view the germs that cause disease, by examining blood, urine, stools, sputum, etc.

### /// **New Machines**

- ▶ Machines developed for study of various body parts.
- ▶ X-ray, ultra-sound, CT scan, MRI, etc. – diagnosis of major illnesses, in which the function of organs like the brain, heart, liver, kidneys, lungs, bones, etc., are studied.
- ▶ Laser beams also used in surgery.

### /// **Surgery**

- ▶ Surgery involves cutting through the skin and other parts to cure disease or injury.
- ▶ Surgeon – one who does surgery.
- ▶ Father of surgery: Sushruta, about 2500 years ago.
- ▶ A variety of instruments and medicines used to perform surgical operations.
- ▶ Transplantation: can replace a diseased organ with a healthy one – talk about organ donation.

### /// **Medicine**

- ▶ Doctors not only diagnose, but try to cure diseases using medicines.
- ▶ Many medicines for various illnesses.
- ▶ Anaesthesia – used to make a patient unaware of pain during surgery. Either by making the part operated on numb or by making the patient unconscious. Chloroform introduced by James Simpson to make patients unconscious.
- ▶ Bacteria causes many diseases like cholera, tuberculosis, plague, malaria and many infections.
- ▶ To prevent growth and spread of bacteria – penicillin is used. Discovered by Alexander Fleming. It is called an antibiotic.

### /// **Preventing Diseases**

- ▶ Preventing illnesses a very important thing. Two discoveries mentioned -
- ▶ Vaccination: smallpox deadly in the 18th century – Dr Edward Jenner discovered and developed a vaccine for preventing smallpox.
- ▶ Interesting story: how Edward Jenner learnt from a chat with a milk-maid that she couldn't catch smallpox because she had already had cowpox that she caught from cattle!
- ▶ Experimented by injecting germ of cowpox into a boy; then injected the germ of smallpox eight weeks later into him. The body did not show any signs of smallpox.

- ▶ Now vaccines available for – tuberculosis, typhoid, diphtheria, whooping cough, tetanus, cholera, polio, and many other diseases.
- ▶ Pasteurisation: process of killing germs in water or milk by boiling it at high temperatures – discovered by Louis Pasteur.

### /// **Basic Health Care**

- ▶ Not only doctors, we ourselves can prevent disease by using some precautions.
- ▶ washing hands well before and after meals
- ▶ drinking fresh, clean water
- ▶ eating a nutritious, balanced diet
- ▶ keeping food covered
- ▶ exercise or doing yoga regularly to strengthen the body
- ▶ not walking barefoot
- ▶ keeping the environment clean and pollution-free
- ▶ consulting a doctor if we feel sick.