UNIT 1 HEALTH AND HYGIENE

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1.0 OBJECTIVES

After going through this unit, you will be able to:

- define and distinguish between health and hygiene;
- discuss various ways and means to keep the community healthy;
- review the knowledge about menstruation and menstrual hygiene; and
- describe various habits, behaviours and practices to keep healthy.
1.1 INTRODUCTION

“The first duty of mankind is preservation of self” (Rig-Veda)

_Sharir Madyam Khalu Dharm Sadhnam_ (The body is the vehicle of fulfilling all duties) has been the central thought in the Indian tradition. Also, it has been said that a healthy mind lives in a healthy body. Thus, it is of utmost importance to keep body and mind healthy to live a happy and nurturing life. Adolescence is the period where the seeds of habits are sown and if healthy habits are nurtured, they can prevent up to 70% of diseases.

In the present unit you will be learning what is healthy habits and what are various ways to maintain health. The unit starts with definition and the difference between health and hygiene followed by various practices to maintain personal hygiene. With a brief description of menstruation and menstrual hygiene, the unit progresses with various ways to keep the community healthy laying emphasis on immunization and environmental health. At the end, various practices, habits and behaviours are discussed which can prevent illness and promote health and hygiene. Throughout the unit you will undertake various learning activities to grasp the concept, learn the process and complete your assignments.

1.2 HEALTH Vs HYGIENE

You must have heard the words health and hygiene many times. Many a times these have been used synonymously. But have you tried to learn what these words really mean! The present section will deal with what it is being healthy, various dimensions of health and the difference between health and hygiene.

1.2.1 Definition of Health

Health has been an important issue in all cultures as it has been associated with vigour, longevity and harmony. Being healthy was seen as being in harmony with self, community and gods. However, it usually was seen only as “absence of illness.” With the advent of 20th Century, not only germs but environment, individual personal factors, social relations etc. were studied and found important for health. In 1948, the World Health Organization gave a definition of health which considered not only individual but also the social aspects.

World Health Organization (WHO) defines health “a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” Let us understand what it means.

*Physical* means concerned with the body.

*Mental* means concerned with the functioning of mind and emotions.

*Social* means concerned with other members of society.

*Disease or infirmity* means sickness or ill health i.e., one or more organs of our body are not able to function in the normal way. Disease is caused by presence of harmful germs in and outside of our body or wear and tear in our body. The germs can be bacteria, viruses or certain fungi. The germs when enter our body and stay there, it is called infection. Our body has a defense mechanism to kill these germs but sometimes it is overpowered by germs and it results in disease.
The word *contamination* is sometimes used to denote the presence of germs outside-on surface of various articles, in the food, water and other eatables.

Thus, when we consider ourselves healthy, it means that our body is functioning properly, we are emotionally stable, effectively face challenges and opportunities in our life and can live harmoniously with other members of society. In other words, being healthy means that we are not healthy just because we are not ill. We should not only be free from illness but should also lead a purposeful and productive life while maintaining good relationships with people.

### 1.2.2 Definition of Hygiene

The word hygiene is derived from *Hygeia*, the Greek goddess of health in Greek mythology. She is represented as a beautiful woman holding in her hand a bowl from which a serpent is drinking. In Greek mythology the serpent testifies the art of healing and this symbol is retained even today in medical science.

Hygiene is defined as “the science of health and embraces all factors which contributes to healthful living” (Park39). In other words, when we talk about hygiene, we practically refer to all the practices, do’s and don’ts that can be practiced to remain healthy and prevent disease. In the forthcoming section we will be dealing in detail as how to keep ourselves healthy by following hygienic Practices. Thus, while health is a state of complete well being, hygiene is the art of keeping it.

**Activity 1**

“Health is a state of complete well being and hygiene is the art of keeping it.” Discuss with your peers.

### 1.2.3 Dimensions of Health

The WHO definition of health talks about three dimensions – physical, mental and social. Let us understand each of these dimensions.

a) **Physical dimension of health**

The state of physical health means that every organ of the body is functioning properly i.e., at its best and in harmony with rest of the body. The signs of physical health in an individual are :

- Good complexion
- Clean skin
- Bright eyes
- Lustrous hair
- Body clothed with firm flesh
- Not too fat
- A sweet breath
- Good appetite
- Sound sleep
- Regular activity of bowels and bladder
b) **Mental dimension of health**

A mentally healthy person is flexible and able to respond to various experiences and situations of life in a positive, constructive and purposeful manner. Mental health has been defined as “a state of balance between the individual and surrounding world, a state of harmony between oneself and others, a coexistence between the realities of the self and that of other people and that of the environment.” Psychologists attribute the following characteristics to a mentally healthy person:

- Not at war with himself
- Well adjusted (gets along well with others, accepts criticism and not easily upset)
- Searches for identity
- Strong sense of self esteem
- Knows himself (needs, problems and goals)
- Good self control
- Faces problems and tries to solve them.

c) **Social dimension of health**

Social well being means harmony and integration within the individual and between other members of the society. Social health has been defined as “the quantity and quality of an individual’s ties and the extent of involvement with the community”. In other words, social health includes the social skills one has, social functioning and the ability to see oneself as a member of the social network.

d) **Spiritual dimension of health**

Health experts often talk about spiritual health. It includes various principals, values, the purpose of life and commitment to some higher being.

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**Activity 2**

“A physically and mentally healthy person is not necessarily socially healthy.”

Discuss with your peers.

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1.2.4 **Factors Influencing Health**

Sometimes you must be thinking as how we remain healthy and why we fall ill. In fact Health is not a separate entity rather influenced by a number of
interdependent factors within and outside the body. These factors interact with each other and this interaction may be promoting health or causing disease. Some of these factors are:

a) Biological factors

The characteristics of each individual are determined by the genes he/she possesses. This also decides how the individual interact with his environment to remain healthy or become ill. Scientists have found that any diseases are also known to be controlled by genes.

b) Behavioural and socio cultural factors

You must have heard people talking about life style. It is the way we live and it includes personal habits and behaviour pattern. While taking good and healthy food, taking good sleep, exercise etc. can promote health. Smoking, drugs and alcohol make a person ill.

c) Environment

Environment has an important bearing on our health. Environmental hazards and deterioration, housing, water supply, noise, social and economic support system, affect the well being of a person.

d) Socioeconomic factors

These are economic status, education and occupation. While economic status improves the standard of living, certain diseases like heart attacks, obesity, diabetes are more common in higher socioeconomic groups. Being educated improves inculcates healthy behaviour and access to health related information. Being in the occupation of one’s choice on one hand makes one happy and healthy, and on the other, certain diseases are related to particular occupations viz, breathing illnesses in mine workers and stone cutters

e) Health services

Provision of good quality health services improves the health of society viz., giving vaccines to children, provision of safe water and easily reachable health facilities

f) Gender

Gender is the roles given by society to men and women e.g. man only can do outside work, women only should cook etc. Women have been in disadvantaged conditions due to discrimination based upon the gender. Giving them less food, not giving due attention to their illnesses as compared to men affects their health adversely.

g) Other factors

Various other factors like food and agriculture, education, social welfare, family and social support system and insurance to pay health related expenditure affect the health directly or indirectly.

Thus, we have seen that health is determined and promoted by many factors and the excess and /or inadequacy of any of them may cause illness.
Activity 3
“Organize a Focus group discussion with student on various factors affecting health.”

Check Your Progress 1
a. Define and distinguish between health and hygiene.
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b. What are various dimensions of health?
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c. Describe various factors influencing health.
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1.3 PERSONAL HYGIENE
You must be aware about many advertisements depicted on hoardings or banners from government and civic bodies regarding Do’s and Don’ts especially during the times of outbreak of diseases affecting masses viz Diarrhoea & vomiting or Eye flu etc. These Do’s and Don’ts are the hygienic practices to avoid contacting diseases and promoting health. Let us learn about some of these practices in detail.

1.3.1 Washing Hands
Hands are the most important instruments of our brain to execute its commands. In doing so, hands have to perform the function of touching various articles and things. The surface of these articles/things may have the disease causing organisms (germs) which are shifted to our hands. Thus, your hands are a common route for germs to spread. If you forget to wash your hands or don’t wash them properly, the germs will start spreading to everything you touch. This can cause harmful germs not only to cause illness to you but also spread to the people around you who may touch the surface after you.

“According to research studies the simple act of hand washing reduces the risk of getting a stomach infection by as much as 47% (Hygiene council)”. Let us learn when and how to wash our hands to remain healthy and prevent falling ill.
When to wash your hands

The hands must be washed:

a) **Before you...**
   - Prepare food
   - Eat
   - Treat a cut or wound
   - Attend to somebody who is sick
   - Change contact lenses
   - Do any kind of activity that involves putting your fingers in or near your mouth, eyes, etc.

b) **After you...**
   - Go to the toilet
   - Handle uncooked foods, especially raw meat or poultry
   - Blow your nose, cough or sneeze
   - Handle rubbish
   - Attend to somebody who is sick
   - Change a baby’s nappy
   - Play with or touch a pet

c) **Whenever...your hands look dirty!**

Here a question must be repeatedly coming to your mind, “What should be used to wash hands?” The answer is – with water (preferably running water) and soap! The soap can be a soap cake or liquid soap. The idea is to remove the dirt and germs from the hands. World Hygiene Council reported that dettol soap is tested to kill 99.9% germs on your hands. If in a situation where you need to wash your hands but water and soap are not available, hand sanitizers are an excellent alternative. These are mostly alcohol based and evaporates after few seconds of rubbing on the hands. But remember...they do not remove dirt, if your hands are dirty, they still need to be washed with soap and water!

**How to wash hands making them germ free**

The hand should be thoroughly washed with soap and running water for 15-30 seconds. The hygiene council suggests the following steps to wash hands making them germ free:

**Step 1** Rub your palms together

**Step 2** Rub your left palms over back of right hand and right palm over back of left palm

**Step 3** Rub palm to palm with fingers interlaced
Step 4 Rub backs of fingers to opposing palms with fingers interlocked.

Step 5 Rotational rubbing of right thumb clasped in left palm and vice versa.

Step 6 Rub rotationally rubbing back and forwards with clasped fingers of right hand in left palm and vice versa.

In the villages it is a common practice to wash the hands with earth after washing the toilet. It is not hygienic as it contains germs and eggs of worms which can lead to illness. Where as burnt ash is advisable for hand wash to free the hand from germs.

It is also not a good practice to dry your hand with a towel if it is used by many people, as it can contain germs. If it is a clean dry towel and used by yourself only, you can dry your hand using it. Using a disposable paper towel/napkin is the safest way to dry hand after washing. It is advisable to wash the solid soap (soap cake) before using it to wash hands as it may hold germs acquired from previous use.

Activity 4
Discuss with your peers various activities in which your hands contact disease producing germs.

1.3.2 Taking Bath Daily

Taking a bath has been recognized one of the healthy practices in all the cultures since antiquity. People used to take bath in community hamams as well as personal bathrooms.

Taking a bath daily not only removes sweat, dirt and accompanying germs from our body but it also gives a sense of freshness.

Following are the general guidelines for taking a bath:

- Take at least one bath a day
- Change the undergarments after a bath as the sweat makes them smell badly and helps the germs to grow
- Use your own towel only to wipe your body after taking the bath. Using other’s towel can lead to skin infections
- Use running water (preferably) and soap for taking the bath
- If it is not possible to take bath (as in special medical conditions when you are bedridden) use warm and clean water and a towel to wipe your body at least once a day
- Any bath soap is good for taking bath. The choice of a particular brand, color or shape and size is individual choice
- Costly, fragrant and imported soaps are no better than ordinary bath soap.
- Baby soaps (e.g. Johnson baby soap) are recommended for children as their skin is delicate and requires mild soap
- Special soaps (e.g. containing moisturizer, mild detergents) can be used on recommendation of the physician for any specific reason
● Using oil over the body after taking bath is not essential except for dry skin.

● Avoid taking bath in ponds which usually have stagnant water and are also used by animals. It can lead to infections. After religious rituals involving taking a dip in a pond and/or river which is contaminated. It is advisable to take a bath with clean water and soap s soon as you get clean water.

● Be cautious in taking bath in rivers. It can be dangerous because of dirty water, striking with rocks, dangerous animals like crocodiles and accidental slippage and drowning.

Activity 5
Find out various practices in different cultures associated with taking bath.

1.3.3 Oral Hygiene and Care of Teeth

Mouth is a general term covering the space containing tongue, teeth etc. But the right term is oral cavity and the mouth is the outer area covered by lips. Our oral cavity is a place where multiple functions and the process of eating are performed namely-tasting, chewing and swallowing. Oral cavity is joined above with our nose, below with the food pipe and windpipe and on each side with our ears. In addition, it contains a pair of special organs called tonsils, one on each side of back of our tongue. Tonsils help us fight the germs entering the oral cavity. With so many passages and involved with intake of food, oral cavity contains many germs and it is very important to maintain its hygiene.

Various ways to maintain oral hygiene and care of teeth are:

● Do not take very cold and very hot food and liquids. It may damage the inner sensitive lining as well as teeth.

● It is a good habit to rinse you mouth with water every time you finish eating or drinking something other than water. This helps to clean the food particles which, otherwise, may ferment and lead to infection.

● Do not put your finger in the mouth unnecessarily. This may transfer germs from outside into the mouth.

● Cleaning the tongue while brushing the teeth is essential as it removes the bad breath generated by white/yellow coating of the tongue and associated germs.

● Chewing tobacco /Gutka and smoking in long run leads to cancer of the mouth.

● Contact your doctor when:
  a) Your mouth smells badly, there may be infection in the tonsils or teeth
  b) There is pain in the throat
  c) There is difficulty in swallowing
  d) There is toothache (pain in the tooth)
  e) There is swelling inside the mouth or around the jaws.
f) There is bleeding inside the mouth

g) There is an open wound in the mouth or on and around the area of lips and nose

h) Any tooth/ teeth are heat/ cold sensitive

i) Swollen/painful/white or bleeding tonsils

**Oral hygiene and care of teeth**

Our teeth not only give us aesthetic beauty and maintain the shape of our mouth, but also helps in digestion of food by chewing it and mixing with saliva. Cleaning the teeth is essential for keeping them healthy. The following guidelines are recommended to keep your gums and teeth healthy:

- Brush your teeth twice a day after meals with a soft brush and tooth paste. Brushing in the night is particularly needed as it is proved to reduce dental decay and cavities

- Brushing should be done at least for 3-4 minutes

- Use a soft brush to avoid damage to gums

- The teeth should be cleaned from all sides. You should learn correct technique of brushing from your dentist to avoid deposition of plaque/tartar on your teeth. The food decay and plaque irritates the gums, cause infection and the gums can start bleeding.

- Any tooth paste is good and to choose a particular color or brand is an individual choice

- Some tooth paste are good for heat and cold sensitive teeth. These can be advised by the dentist

- Use a diamond shaped brush as it is suitable to the space between cheek and gums. Small size brush is needed for children

- When tooth brush/toothpaste is not available, *Neem/Keeker/Babool datun* can be used but proper use is important to avoid damage to the gums

- Always use the tooth powder from a standard company and never use cheap, granular powder as it can harm your teeth and gums.

- Never use any tobacco based toothpaste/toothpowder

- If you have a painful tooth, contact the dentist immediately. It may be due to infection which can be treated and you can save your tooth from extraction

- Broken and damaged tooth can be replaced with artificial tooth. Take the advice of your dentist for it.

- Never use alpins/tooth picks to remove food particles from your teeth. It can damage the teeth. Instead, use tooth brush or dental floss

- Never open bottles, hairpins and break walnuts/chestnuts using your teeth. The upper covering of your teeth can be damaged making it heat or cold sensitive. Even your teeth can break!!
- Dental flossing is recommended once a day. It is using a special thread (dental floss) to remove the food particles in between the teeth.
- Never apply any chemicals (e.g. baking soda & lemon etc) to your teeth to bring shining. The teeth can be damaged.
- Nail biting is a bad habit as it leads to infection in the oral cavity and damages the gums.
- Smoking, alcohol and chewing tobacco, supari and spices stain the teeth, pollute the environment, cause bad breath. They also causes cancer of the oral cavity in long run.
- Chewing gums help only in massaging the gums and not cleaning the teeth. The teeth need to be cleaned by toothbrush and paste only!
- You must have a dental check up at least six monthly. The dentist can clean the dirt/tartar on your teeth by the process of scaling and also find out any decay of the tooth.
- Mouthwash are medicated solutions which can be used for foul smell (bad breath) and improving oral hygiene but temporarily. The dentist should be consulted to find out the cause and treat the bad breath.
- Artificial teeth/ teeth set (dentures) are an important and essential option for the people who have lost/ damaged their teeth. However, dentists should be consulted for it. It should be well fitting as the loose denture can damage the inner lining of mouth. They need to be cleaned regularly by brushing.
- The alignment/shape of the teeth can be corrected by applying metal strings called braces. This is helpful aesthetically but the braces should be cleaned regularly after every meal to prevent tooth decay by food particles.

**Activity 6**

“Prepare a list of do’s and don’ts to keep your oral cavity and tooth healthy.”

### 1.3.4 Care of Hair and Nails

Hair and nails are the parts of human body which played an important role in prehistoric times when our ancestors were living in jungles without clothes and killing animals for their food. Hair provided them warmth and nails were used like weapons. Now a days, they have only aesthetic value and for this they need to be regularly trimmed and cleaned. Following points are worth considering for care of hair and nails:

**Hair:**

- Wash your hair with soap and water at the time of taking bath to clean the dirt. In adolescents it is more required because the sweat glands are more active and thus, hair attract more dirt.
- There should be regular cutting/trimming of hair.
- The hair in the armpits and genital region should be removed regularly as they cause bad smell due to sweat and can have infections.
Hair shampoos and conditioners are not of much help and use to healthy hair. It is a major money making business and hence too much advertised. Some medicated shampoos are helpful in medical conditions for which medical advice should be taken. **Dandruff** is one of such conditions which is caused by a fungus. It leads to itching, flakes and hairfall but is treatable.

- Hair fall and whitening is common in males after middle age but a skin specialist should be consulted for any untoward hair fall, itching and whitening of hair.

- Poor hygiene and sharing clothes and combs may lead to hair infections like dandruff and lice and hence, should be avoided.

**Nails**

Keeping big nails is a fashion in some ladies and men too. However, they may be harmful as:

- They can injure other persons, particularly small babies.

- The eggs of the worms are transferred to nails while washing toilet and it spreads worm infection to whole of the family through preparing and serving the food.

- Disease producing germs can be transferred through dirt collected in the nails.

Thus, nails should be cut and brushed regularly.

### 1.3.5 Genital Hygiene

Genital area is generally kept neglected as it is considered as taboo to talk about genital organs and their functions. However, keeping genital organs healthy is very important as these organs perform not only the function of reproduction but also sexual fulfillment. Let us learn how to keep the genital area and organs healthy.

**Genital area**

This is the area comprising external genital organs and the area around them. Genital area is covered by hair. As the genital area is most of the time covered by undergarments, the moisture due to sweat and water, if not wiped after taking bath, can cause infection by fungus. It is characterized by itching, white colour granules and later on blackening of the skin. Thus, it is important to remove the hair regularly as well as keep the genital area dry. You should take the advice of the doctor to treat any infection in this area. If any cream is advised to apply for fungal infection, you should continue to use it at least for 28 days, as this is the period when old skin is replaced by new one.

**Genital organs**

Genital organs are also called **reproductive organs** and **sexual organs** because they perform two important functions namely: Reproduction and Sexual enjoyment.

Some times the system as a whole is called as **reproductive tract**. Lack of hygiene of genital organs leads to **reproductive tract infections** or **RTIs**. They can cause burning urination, urge to pass urine many times, foul smelling discharge, itching, wounds etc. In many cases there can be no symptoms also.
In males the genital organs are:

**External organs**
- Penis – a cylindrical structure covered by loose skin (Prepuce) which can be pulled over it
- Testes – two round structures in a loose bag of skin. They produce the sperms needed for reproduction.

**Internal organs:**
- Urethra – a tube inside the penis used to pass urine and semen
- Spermatic cord – a tube between testes & seminal vesicle. It is used to carry sperms from testes to seminal vesicle –
- Seminal vesicle – a reservoir of semen containing sperms and watery fluid
- Other organs e.g. epididymus, prostate gland etc.

In females the genital organs are:

**External organs**
- Vagina – A tubular expandable structure. It is covered by two vertical muscular folds. It is also called as Birth Canal as babies come out of it during Labour.
- Clitoris – It is a small muscular structure on the upper part of vagina. It is responsible for pleasure during sex.
- Urethra – a small opening used to pass urine.

**Internal organs**
- Cervix – The upper portion of vagina which connects it to womb or uterus
- Womb(Uterus) – here the baby stays before birth
- Fallopian tubes – two tubes opening on each side of uterus. Here the sperm meets egg to produce the baby.
- Ovaries- two sacs one on each side of fallopian tubes. They produce eggs which, when they meet with the sperm, produce baby.

In males the genital organ penis also perform the function of passage of urine as the organ for passage of urine (Urethra) passes through and opens at the external end of the penis. But in females the organ for urethra has a separate opening. You can read more about the structure and functions of genital organs in the unit “Structure of male and female reproductive organs” (for further details refer Theory course – I Block – 3 unit – 1 and 2).

**Maintaining genital hygiene**

You can keep the genital organs healthy by following simple practices like:
- The hair over the genital organs should be removed regularly to prevent infection as discussed in the previous section.
The genital organs should be cleaned with mild soap (e.g., bath soap) and water daily to avoid infection.

Males can do it by retracting the prepuce (the loose fold of skin on the tip of the penis) and remove the white substance using soap and water.

Females should sit in squatting position while taking bath and clean the vagina by parting the folds with thumb and finger and wash with soap and water.

- In females vagina and anus are nearby and the disease producing germs can easily enter vagina. After toilet females should wash the anus from upside down ( opposite of the usual practice from down to upside) to prevent passage of harmful germs from anus to vagina

- Slight discharge from genital organs is common both in males and females and one need not worry about it unless it is more in quantity, foul smelling or accompanied by itching, redness etc. Similarly, nocturnal emission of semen (night fall) is a normal phenomenon in adolescent boys. The genital organs and undergarments should be properly cleaned as soon as it is noticed.

- Females need to take special care in genital hygiene during the period of menstruation as there are more chances of infection due to passage of blood. We will be talking more about it in the next section.

**Activity 7**

“Prepare a quiz on genital Hygiene”

### 1.3.6 Rest and Sleep

Human body acts like a complex machine. The machine becomes hot or has wear and tear if used continuously and has to be stopped to get cool or get repaired. Similarly, our body requires rest not only to systematize its resources but also to maintain its equilibrium so as to function properly. Sleep is nature’s mechanism to provide strength to our body to face the day to day challenges. Let us learn how we should take rest and sleep to maintain our body healthy and take the best out of it.

a) **Sleep**

Normally we all require around eight hours sound sleep to keep fresh. This duration is more in younger children and less in elderly. Pregnant ladies require 2-3 hours additional sleep for the proper growth of baby.

Sleep has been divided into deep sleep and superficial sleep. It is the deep sleep which is more important. In it the eyes makes rapid movements and you get dreams. If you are woken up in deep sleep, you feel irritated. If you do not get enough deep sleep for longer times, it gets accumulated and you remain exhausted most of the time.

For getting a sound sleep:

- It is better to sleep early and wake up early. However, it depends upon one’s routine and sleep habits
- It is better to take a span of long sleep rather than interrupted intervals of short sleep
• Put on loose and comfortable dress while going to bed.

• A comfortable bed to sleep is considered good which is not too hard and not too soft.

• There should be no disturbance (like sound and too much light) while sleeping.

• A melodic soft music and minimal light induces good sleep but it is a personal choice.

• A diet rich in carbohydrates is good for sound sleep. That is why traditionally, milk is taken before sleep.

• It is a good habit to take a bath before going to sleep. If not possible, one should wash the face, hands and feet. It not only relaxes you but also prevents transfer of dirt and germs on to bed.

• Taking dinner at least 3-4 hours before going to bed prevents indigestion and interruption during the sleep. It is good if the dinner is followed by a small walk.

• It is normal to feel sleepy after taking meal especially in the noon. If time and space permits, there is no harm taking a short sleep.

b) Rest

Apart from normal sleep, we require short spans of rest depending upon the hard work (mental and physical) we do. The requirement of rest depends upon:

• Type of work. You feel more tired while doing a monotonous and boring work.

• Posture: Defective posture makes you tired early. It is especially important for the students who study while lying down.

• Distractions (e.g. noise) while working.

• Stamina of the person (especially in physical work).

Taking rest does not necessarily means that you should lie down and sleep! The idea is relaxation and rejuvenation. You can do it by:

• Listening to music

• Stretching

• Walking/roaming around

• Having a chitchat/cracking jokes with friends face to face or telephonically

• Playing a game

• Having a sip of drink of your choice

• Concentrating on your breathing

• Doing something you feel relaxing. Gurudev Rabindranath Tagore used to draw pictures when tired while writing poetry or composing music! Now a days even those pictures are worth million rupees a piece.
Working for long hours on computers

Adolescents are usually keep on working for long hours on computers. It causes tiredness not only of hands but also of eyes. It is recommended that:

- Your arm and elbow should be at the same level to prevent pain in the wrist
- Your eyes and monitor should be at the same level
- The computer screen should have a device (screen guard) to protect your eyes from excess radiation
- You should not work with too bright and too colorful screen
- You should not work for long hours with computers. After every 20 minutes you should walk away and then resume your work
- Blink your eyes frequently to lubricate them
- If you should work for long hours with computers, use lubricant eye drops (e.g. artificial tears).

Activity 8

Conduct a debate with students on “Early to bed and early to rise, makes a man healthy, wealthy and wise.”

Check Your Progress 2

a) Describe various steps for washing hands.

b) “It can be harmful to take a bath in rivers and ponds.” Discuss

c. When should you go to a doctor for keeping your oral cavity healthy?

d. Why it is important to cut and brush nails regularly?
1.3.7 Menstrual Hygiene

Menstruation is an important function of female reproductive organs which determines the fertility or the ability to produce babies in a woman. The details about menstruation and menstrual Hygiene please refer course - 1, block -3, unit - 2

1.4 KEEPING THE COMMUNITY HEALTHY

When we look around us, there are many factors which affect our health. If our surroundings are clean, the water supply is good there are chances that maintaining good personal hygiene and the chances of getting ill will reduce. We will fall ill less frequently. Similarly, if the people around us are ill, there are chances that we may also fall ill as some diseases may be transmitted from one person to another through our environment. We are essentially social animals and we can not ignore these factors.

With the scientific progress we now know that we can prevent many illnesses by improving the living conditions of our community and injecting certain drugs (vaccines) in our body at appropriate interval to build the power to fight disease producing germs. You may recollect one such large scale effort in the country called “Pulse polio immunization”

So far you have learnt about certain practices to keep you healthy personally. In the present section, you will come to know about various things to keep the community healthy.

1.4.1 Immunization : An Introduction

You must have heard about the terms “immunization” and “vaccine” at one or the other time. You may not be knowing what these terms mean and what their importance is. Let us understand them. Our body has an inbuilt mechanism to fight the disease producing agents and protect it. This power is called “immunity.” Our immunity is due to special guards who protect the fort of our body. They are found in our blood and known as lymphocytes or white blood cells (WBC).

When a foreign agent which is not a part of our system enters our body, it is recognized as enemy by WBCs and its identity is locked in the memory. When it again enters our body, the memory is read and the enemy is destroyed. These special guards or WBCs are of two types - T Cells and B Cells. The T Cells directly attack the disease producing agent and kill it. The B Cells form specialized weapon known as “antibodies” which are specific to the particular disease producing agent (also known as “antigen”) and makes it weak and thus unable to cause the disease.
We acquire immunity by three ways:

a) Infection (entry and multiplication in our body) by a disease producing germs
b) Transfer of antibodies from mother to baby through breast milk
c) Injecting a disease producing agent ("antigen") or vaccine

The third way mentioned above is called as "vaccination" or "immunization." A vaccine provides specific protection against a given disease. It stimulates the WBCs to produce weapons like antibody against a particular disease producing germ to destroy it. Vaccine contain either the live disease producing germ from which the weapon (or disease producing ability) has been taken away or a killed disease producing germ or a part of it. The idea of immunization is to identify it and develop its memory by WBCs in our body. Vaccine may be given orally (e.g. Polio vaccine) or through injections e.g. Measles vaccine. Some vaccines are given only once (e.g. BCG vaccine) and others may have to be repeated many a times (e.g. DPT vaccine) for desirable effect.

Immunization, was discovered in 1798 by Edward Jenner. Since then it is an effective way to protect the community from many diseases and has saved millions of lives across the globe.

**Activity 9**

Find out the names of various vaccines and the diseases prevented by them.

### 1.4.2 National Immunization Schedule

Immunization as a mean to protect the health of all children of the world and was launched officially by WHO in May 1974 to protect against six vaccine preventable diseases:

- **Tuberculosis** (Prevented by BCG Vaccine)
- **Diphtheria**
- **Whooping cough (Pertussis)**
- **Tetanus**
  
  (Diphtheria, Pertussis and Tetanus are prevented by combined DPT Vaccine and single TT Vaccine for Tetanus)
- **Measles** (Prevented by Measles vaccine)
- **Polio** (Prevented by Oral Polio Vaccine or OPV)

The programme was named by WHO as Expanded Programme of Immunization (EPI). In 1985 UNICEF named it Universal Child Immunization. India launched Universal Immunization Programme (UIP) on November 1985 to protect all the children from six vaccine preventable diseases by first birthday. Accordingly, the National Immunization Schedule has been prepared which also provides immunization to the children above 9 months as well as pregnant women.
## National Immunization schedule

<table>
<thead>
<tr>
<th>For infants (0-1 year)*</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>At birth</td>
<td>BCG</td>
</tr>
<tr>
<td></td>
<td>OPV(Zero dose)</td>
</tr>
<tr>
<td>6 weeks</td>
<td>BCG ( if not given at birth)</td>
</tr>
<tr>
<td></td>
<td>DPT-1</td>
</tr>
<tr>
<td></td>
<td>OPV-1</td>
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<tr>
<td>10 weeks</td>
<td>DPT-2</td>
</tr>
<tr>
<td></td>
<td>OPV-2</td>
</tr>
<tr>
<td>14 weeks</td>
<td>DPT-3</td>
</tr>
<tr>
<td></td>
<td>OPV-3</td>
</tr>
<tr>
<td>9 months</td>
<td>Measles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For children**</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>16 -24 months</td>
<td>DPT-Booster dose</td>
</tr>
<tr>
<td></td>
<td>OPV- Booster dose</td>
</tr>
<tr>
<td>5-6 years</td>
<td>DPT-Booster dose ( Two doses should be given 1 month apart if not given earlier)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For adolescents</th>
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<tbody>
<tr>
<td>10 years</td>
<td>TT-Booster dose ( Two doses should be given 1 month apart if DPT, or TT not given earlier)</td>
</tr>
<tr>
<td>16 years</td>
<td>TT-Booster dose ( Two doses should be given 1 month apart if DPT, or TT not given earlier)</td>
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<table>
<thead>
<tr>
<th>For pregnant women</th>
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<tbody>
<tr>
<td>Early in Pregnancy</td>
<td>TT-1</td>
</tr>
<tr>
<td>1 month after the 1st dose of TT</td>
<td>TT-2 (Not required if the pregnancy is within three years of last pregnancy and 2 doses of TT have been given)</td>
</tr>
</tbody>
</table>

# Interval between two doses should not be less than a month
Immunization is safe in minor cough, cold and fever
* In some states Hepatitis B vaccine is also given along with DPT & OPV
** In some states MMR (Measles, Mumps & Rubella) vaccine is also given at 15-18 months

The vaccines in National immunization schedule are provided free of cost in all Govt owned health centres and hospitals. However, apart National immunization schedule, vaccines are also available for many other illnesses but they are costly and can be had on the advice of physicians.

Depending upon the health situations, sometimes special immunization programmes/campaigns are also run by Govt. to protect community (e.g. Pulse polio immunization Programmed). The vaccines given in these programmes/campaigns are given in addition to National immunization schedule and should be had by all as per the guidelines issued.
Activity 10
Enlist the vaccines given to adolescents.

1.4.3 Environment and Environmental Hygiene

You must have come across the word ‘environment’ in different contexts e.g. environmental pollution, unhealthy environmental or maintaining a disciplined environment etc. But have you ever thought what it consists of and why it is important to study about it! Let us learn about environment and how to make it healthy.

Environment and its importance

The term environment comprises various factors and things which surround us- be it living or non living.

They can be broadly classified as:

a) Physical things

These are water, air, waste, soil etc.

b) Biological things

These are plant and animal life

c) Psychosocial factors

Psychosocial factors comprise Habits, customs, culture, occupation, religion etc. All the above factors interact with each other and create our environment. In the present section, we will be restricting ourselves to physical factors only as dealing with biological and social environment is beyond the scope of the present unit.

Environmental hygiene

Environmental hygiene has often been referred to as “environmental sanitation.” The word sanitation literally means,” the science of safeguarding health”. In the past the word ‘ sanitation’ in the context of environment was referred to safe disposal of human faces only but WHO has given a comprehensive definition of Environmental sanitation as “ the control of all those factors in man’s physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival.” Nowadays the word environmental sanitation is rarely used and is being replaced with a broader term called “environmental health.” It comprises all the ways and means to create and maintain such conditions which promote health and prevent diseases. Public health specialists have found the following major ways are of major importance for environmental health:

a) Safe drinking water

Safe drinking water means the water free from disease producing germs and other pollutants which can cause harm to our body e.g., chemicals.

b) Safe disposal of human excreta (faeces)

Human excreta (faeces) not only pollutes the environment by bad smell but also contain many germs which infect the soil and water and produce diseases in humans as well as water.
c) Safe disposal of waste

The changing life style and increasing use of plastic products produces a lot of waste. This waste is sometimes burnt or thrown openly. It pollutes the environment, chokes the drains and cause many health hazards e.g. breathing disorders.

d) Clean housing

House not only provides us shelter but also protects us from effects of weather and animals. If it is not kept clean or is overcrowded, it leads to illness.

You will learn more about them in the next section.

**Activity 11**

Look around your home and work place and enlist various factors which make our environment unhealthy.

1.4.4 Keeping Environment Healthy

It can rightly be said that our health largely depends on the environment we live in. Our living conditions based upon adequate and safe water, air, food and presence of various disease producing germs and our constant interaction with them, all contribute to our health or diseases. The better are our habits and our ‘standard of living’ (i.e. various environmental factors like food, clothing, water, housing and cleanliness etc) the more we are healthy. Thus, it is important to keep our environment healthy.

To make our environment healthy, suitable measures need to be taken to secure safe water, safe disposal of waste and human faeces and clean housing. Let us learn various ways to keep our environment healthy.

a) Safe drinking water

In the villages the main source of water are wells. In some parts of the country tanks, ponds, natural springs and rivers are also major sources though the safety to the water is not checked. In urban areas water is purified and supplied by civic bodies. Sometimes it may become contaminated due to broken pipes, leakage and mixing with waste and human faeces due to the water pipes going along with drains carrying waste including human faeces.

**To keep the drinking water safe:**

- There should be no open air defecation
- When possible, drink only the water supplied by civic bodies. If it is drawn from hand pumps, is not clear or smells, it should be chlorinated by crushing one chlorine tablet, mixing it in 20 litres of water and keeping covered for half an hour before consumption. Alternatively, it can be boiled at least for 20 minutes and cooled before consumption.
- Washing, bathing etc. should not be done near the source of water.
- Waste should not be thrown near well, spring, river and ponds
- The parapet of wells should be made higher and it should be covered to avoid contamination of water
Health Issues of Adolescents

- The wells should be chlorinated regularly
- If the water smells, impurities are visible or the color is not good, it should be left for sometimes for impurities to settle down and use the decanted water (after throwing away the settled down impurities).
- In urban areas water can be purified and made safe at homes by installing machines like Aqua guard or Reverse Osmosis (RO) system etc. but they are costly. However, boiled water (for 20 minutes) is equally safe.

Always report the leakage of water/broken pipelines to civic bodies so as to enable them take immediate action to prevent wastage of water and contamination.

b) Safe disposal of human excreta (faeces)

Most of the people in rural India use open field for defecation. They find it convenient and culturally acceptable. The general understanding is that latrines are for city dwellers as there are no open field there! Faeces contain diseases producing germs and eggs of worms. Open air defecation attracts flies which spread the germs and cause diseases. Faeces come in contact with humans, animals and birds and can also infect water resources.

If people do not have access to latrines, then burying faeces in the ground is a simple step that will improve hygiene. It will reduce people’s and animals’ risk of contact with faeces. Constructing and using latrines is a really important way of reducing the risk of spreading microbes and worms among our family and neighbours. They also improve household well-being and safety, especially for women and children.

c) Safe disposal of waste

All households produce some waste. This may include food waste, paper, plastics, tins, batteries and broken tools and equipment. Dispose all this waste at the designated sites by civic bodies. However, where such system is not there (like in village), one can adopt various other methods. Paper can be recycled or used for lighting fires. Old cans or cut-up plastic bottles can be used for growing tree seedlings. Vegetable waste can be placed in compost heaps or pits to produce good compost (manure) for use in home gardens. Some rubbish can be burned but avoid burning plastics, aerosols or batteries. They can release poisonous chemicals and aerosols can explode.

d) Clean housing

The house should be:

- Well ventilated
- Well lighted
- Protected from mosquitoes and insects by using nets on windows and doors
- Having a latrine to avoid open air urination and defecation.

Many households have animals living either in or around the home. These may include dogs, cats, chickens, ducks, sheep, goats and cows etc. Sometimes they spend the night in a room next to the sleeping areas. They are part of everyday
life. However, all animals and birds carry germs and worms. After handling animals and birds, it is very important to wash hands before handling food or water. Keeping animals out of our homes will help protect young children from diarrhoea and worms.

Although in cities we have concrete houses but in rural areas most of the houses are made of earth and plant products. Our ages old practices of removing shoes before entering kitchen and/or home, regularly wiping floors, cleaning and whitewashing homes on Deepawali festival etc. still exist to be the low cost and effective ways for clean housing.

**Activity 12**

Find out various agencies which are responsible for environmental health in your locality and their contact details.

<table>
<thead>
<tr>
<th>Check Your Progress 3</th>
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<tbody>
<tr>
<td>a) How does our body acquires immunity?</td>
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<tr>
<td>b) Which are the vaccine preventable diseases from which the Adolescents should be protected by immunization?</td>
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<tr>
<td>c) Which three things / factors make up our environment?</td>
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<td>..................................................................................................................</td>
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<tr>
<td>d) How we can secure environmental health?</td>
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**1.5 HEALTHY HABITS**

Habits are behaviours which are repeated over a period of time and difficult to change. Let us learn about some habits following which you can remain healthy:
Health Issues of Adolescents

- Taking bath daily – prevents bad odor due to sweat and infections
- Wearing washed clothes daily
- Brushing teeth in the morning and evening after meals
- Trimming the nails once a week and getting the hair cut monthly
- Washing hands before and after meals
- Eating regular meals and avoiding munching in between the meals helps to check obesity
- Eating all types of food helps to get all the nutrients, avoids the deficiency diseases like malnutrition (less weight for age) and anaemia (less haemoglobin in the blood)
- Eating freshly prepared food - avoids food borne diseases like vomiting, diarrhoea etc.
- Consuming fruits and vegetables provides vitamins, minerals and antioxidants which are not only required for repair of damages in the body during diseases but also prevents many diseases and also some of the cancers
- Avoid taking fast foods too frequently- you get more calories and salt leading to obesity and increased blood pressure
- Always wearing Chappals /shoes not only protects the feet from injury but also helps to avoid worm infection
- Maintaining good posture- prevents backaches
- Walking is a good exercise to tone up the muscles, lose excess weight and keep the heart healthy
- Using staircase and avoiding elevators and lifts helps to keep the body weight in check
- Sleeping and waking up early keeps you fresh and avoids tiredness
- Contacting doctor at the earliest if you feel ill
- Practicing yoga and meditation keeps the mind relaxed, prevents and checks diseases and maintains the balance in life

Activity 13
Find out various healthy habits and practices prevalent in your family and those of your peers.

Check Your Progress 4

a. What are various healthy food habits?

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1.6 ROLE OF TEACHER

The famous Indian saint Kabir has compared the teacher to a potter. The potter shapes the earthenware by beating from outside while supporting from inside. Similarly, the teacher also shapes the destiny of his/her pupils by shaping good habits and checking/correcting the bad ones. After his peers, teacher is the sole source of inspiration for the student outside the home. He acts not only as a guide and mentor but also a friend. During the tender age of adolescence, curiosity led experimentation are common. It is now that the habits of chewing paan, khaini, gutka, drinking alcohol and using drugs take their roots. Lack of abstract thinking and peer led decision making make the adolescents all the more vulnerable.

Teachers can be a great help by developing life skills to enable the adolescents face the opportunities and challenges of life effectively. They can be the role models for adolescents for whom hero worship is quite common. In modern times where nuclear families, lack of time in parenthood, cut throat competition and self-centeredness prevails, teachers can be the torchbearers. They can inculcate the team spirit, promote good citizenship and catalyze the process of community service. There are umpteen numbers of successful examples of student led community health awareness and cleanliness campaigns be it under the banner of Scouts & Guides or NSS. In all these, teachers have played the lead role. Thus, teachers cannot only develop good habits in the adolescents as individuals but they can also make them the ambassadors of community health and sanitation.

Check Your Progress 5

a. What are various roles a teacher plays in promoting health and hygiene in adolescents?

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1.7 LET US SUM UP

In this unit you have learnt that health is a state of complete well being and hygiene is the science to keep healthy. Health is a multidimensional process and depends upon many personal and environmental factors. Further, you have learnt that personal hygiene comprises various ways, means, behaviours and habits to keep our body healthy from head to toe. The habits and behaviours acquired in adolescence are responsible up to 70% of preventable diseases and death in adult life. Knowledge and practice of genital hygiene not only protects from reproductive tract infections(RTIs) and sexually transmitted infections but also keeps us healthy to produce children and enjoy sexually. Menstruation is an important process in the life of women. However, the ignorance, myths and misconceptions can lead to poor about menstrual hygiene. The unit has also emphasised that health largely depends upon our habits and behaviours. Certain behaviours like unsafe sex has not only bad consequences for personal life but also the society. Immunization is an effective means to protect the community from
Health Issues of Adolescents

various deadly and crippling diseases. Teachers can play an important role to inculcating healthy habits and promoting hygiene in personal and community life.

### 1.8 KEY WORDS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity</td>
</tr>
<tr>
<td>Disease/infirmity</td>
<td>Sickness or ill health i.e. one or more organs of our body are not able to function in the normal way</td>
</tr>
<tr>
<td>Infection</td>
<td>Entry, staying and growth of germs in our body</td>
</tr>
<tr>
<td>Hygiene</td>
<td>The science of health which embraces all factors which contributes to healthful living</td>
</tr>
<tr>
<td>RTI</td>
<td>Reproductive tract infections</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually transmitted infections</td>
</tr>
<tr>
<td>HIV</td>
<td>Human immune deficiency virus</td>
</tr>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>Menarche</td>
<td>Onset of Menstruation</td>
</tr>
<tr>
<td>Menopause</td>
<td>Cessation of Menstruation</td>
</tr>
<tr>
<td>Missed period</td>
<td>When there is no menstruation for a cycle</td>
</tr>
<tr>
<td>Safe period</td>
<td>Days 1-7 and days 20-30 days during a menstruation period when the chances of getting pregnant are least</td>
</tr>
<tr>
<td>Immunity</td>
<td>Our body’s ability to fight the disease producing agent(s)</td>
</tr>
<tr>
<td>Immunization</td>
<td>Injecting a disease producing agent (“antigen”) or vaccine to produce immunity</td>
</tr>
<tr>
<td>Sanitation</td>
<td>The science of safeguarding health</td>
</tr>
<tr>
<td>Environmental Sanitation</td>
<td>The control of all those factors in man’s physical environment which exercise or may exercise a deleterious effect on his physical development, health and survival.</td>
</tr>
</tbody>
</table>

### 1.9 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress 1

a) According to World Health Organization (WHO) “health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”
Hygiene is defined as “the science of health and embraces all factors which contributes to healthful living”

Thus, health emphasizes on the total state of well being while hygiene refers to all the practices, do’s and don’ts that can be practiced to remain healthy and prevent disease

b) Various dimensions of health are:
   i) Physical dimension
   ii) Mental dimension
   iii) Social dimension
   iv) Spiritual dimension

c) Various factors influencing health are:
   i) Biological factors
   ii) Behavioural and socio cultural factors
   iii) Environment
   iv) Socioeconomic factors
   v) Health services
   vi) Gender- the roles given by society to men and women
   vii) Other factors - food and agriculture, education, social welfare, family and social support system and insurance to pay health related expenditure.

Check Your Progress 2

a) The steps for washing hands are:
   
   **Step 1**- Rub your palms together

   **Step 2**- Rub your right palm over back of left hand and left palm over back of right hand

   **Step 3**- Rub palm to palm with fingers interlaced

   **Step 4**- Rub backs of fingers to opposing palms with fingers interlocked.

   **Step 5**- Rotational rubbing of right thumb clasped in left palm and vice versa.

   **Step 6**- Rub rotationally rubbing back and forwards with clasped fingers of right hand in left palm and vice versa.

b) It can be harmful to take a bath in rivers and ponds because of
   i) Infections by dirty water
   ii) Dangerous animals like crocodiles and snakes etc.
   iii) Hidden rocks can cause injury while swimming
Health Issues of Adolescents

c) For keeping your oral cavity healthy you should contact your doctor when:

Your mouth smells badly, there may be infection in the tonsils or teeth
There is pain in the throat
There is difficulty in swallowing
There is toothache (pain in the tooth)
There is swelling inside the mouth or around the jaws
There is bleeding inside the mouth
There is an open wound in the mouth or on and around the area of lips and nose
Any tooth/ teeth are heat/ cold sensitive
Swollen/painful/white or bleeding tonsils.

d) It is important to cut and brush nails regularly because

i) They can cause injury
ii) They can spread worm infection
iii) Disease producing germs can be transferred through dirt collected in the nails.

e) The consequences of having unsafe sex are:

a) Unwanted pregnancy
b) Sexually transmitted infections and HIV/AIDS
c) Emotional and psychological disturbances
d) Social disapproval and stigma

Check Your Progress 3

a) Our body acquire immunity by three ways:

i) Infection (entry and multiplication in our body) by a disease producing germ
ii) Transfer of antibodies from mother to baby through breast milk
iii) Injecting a disease producing agent (“antigen”) or vaccine

b) The Adolescent can protected from the following vaccine preventable diseases:

i) Diphtheria
ii) Whooping cough (Peruses)
iii) Tetanus
c) The three things / factors which make up our environment are:
   i) Physical factors
   ii) Biological factors
   iii) Psychosocial factors

d) We can secure environmental health by –
   i) Safe drinking water
   ii) Safe disposal of human excreta (faeces)
   iii) Safe disposal of waste
   iv) Clean housing

Check Your Progress 4

a) Following are some of the healthy habits regarding food:
   - Washing hands before and after meals
   - Eating regular meals and avoiding munching in between the meals
   - Consuming fruits and vegetables
   - Avoiding food faddism and eating all types of food
   - Eating freshly prepared food
   - Avoid taking fast foods too frequently

Check Your Progress 5

a) To promote health and hygiene in adolescents a teacher plays various roles such as:
   - As Guide
   - A Mentor
   - A Friend
   - A Helper
   - A motivator
   - A leader and community organizer and
   - Acting as a role model.
1.10 REFERENCES

- Park’s Textbook of Preventive and Social Medicine (year), K. Park, 18th Edition, India.
- Good Hygiene in Practice, Hygiene Council.