Hygiene

Personal Hygiene and Balanced Diet

Personal Hygiene

Consumption of healthy food is not the only factor required for good health. Healthy lifestyle and good habits are equally important. Some of the healthy habits we all must follow:

- Bathing regularly to remove sweat and dirt
- Washing hands before eating
- Keeping finger nails trim and clean
- Rinsing or brushing teeth after every meal
- Washing eyes with cold, clean water
- Wearing clean undergarments
- Exercising regularly to keep the muscles and joints stronger.

Clean Environment

Apart from personal hygiene, it is very important to maintain social and community hygiene to maintain a healthy lifestyle.

A number of steps have to be taken to ensure effective social hygiene. Some of them are:

- Providing clean drinking water
- Proper waste disposal and providing proper sanitation
- Control of communicable diseases by providing vaccination, medical aid, and medicines
- Prevention of air and water pollution
- Providing health education at community level

Balanced Diet

A diet which contains all the nutrients in correct proportions is called a **balanced diet**.

Let us study the components of a balanced diet.

Do you know why all nutrients are required by our body?

Proper quality (i.e., having all the nutrients) and quantity of food is very important for proper health, growth, and functioning of our body.

Thus, a balanced diet should not have too much or too little of any nutrient. It should include all the nutrients in the required quantity.

For example, the consumption of excess fat-rich food (such as *samosa, poori, malai, peda* etc.) will not provide much energy to the body and can lead to a condition called **obesity**.

Nutrients are components of food that provide energy to the body. Five major nutrients are present in the food we eat. These include carbohydrates, proteins, fats, vitamins, and minerals.

Community Hygiene & Contamination of Water

Community Hygiene

A number of steps have to be taken to ensure effective social hygiene. Some of them are:

- Providing clean drinking water
- Proper waste disposal and providing proper sanitation
- Control of communicable diseases by providing vaccination, medical aid, and medicines
- Prevention of air and water pollution
- Providing health education at community level
- Providing family welfare education

Contamination of Water

Water is considered to be contaminated when it contains a substance, which may be hazardous to living organisms and is no longer fit for drinking.

When water contains no bacteria or other polluting chemicals, it is said to be unpolluted water.

Characteristic of safe and clean water

Water is considered to be safe only when it has the following characteristics.

- It is transparent (colourless) and odourless.
- It contains sufficient amount of dissolved oxygen.
- It is free from harmful chemicals.
- It is free from pathogens.

Sources of Water Contamination

Water gets contaminated by

- industrial wastes
- excessive use of fertilisers and pesticides
- oil discharge from ships
- radioactive wastes

Water Borne Diseases

Some of the common water borne diseases, which spread through contaminated water are:

- Cholera
- Typhoid
- Diarrhoea
- Jaundice
- Hepatitis

Diarrhoea

- It is caused by bacteria (*Escherichia coli, Shigella dysenteriae*, *Salmonella typhimurium,* etc.), protozoa (*Giardia lamblia*), and some viruses.
- It is spread by contaminated water, food, poor sanitation and personal hygiene.
- It can be prevented by ensuring proper sanitation and hygiene, avoiding eating outside, and covering food stuffs properly.
- Fruits and vegetates must be cleaned properly before consumption.

Cholera

- It is caused by the infection of intestinal tract by the bacterium *Vibrio cholerae.*
- The common symptoms include severe diarrhoea, vomiting, and very less urination.
- No passage of urine results in accumulation of urea in blood, which is highly poisonous and can result even in death.
- Infection of cholera can occur through contaminated water, by dust and flies, or even by handling the food with dirty hands.

Dysentery

- Dysentery is basically of two types: bacillary and amoebic.
- Bacillary dysentery is caused by bacterium *Shigella* and is more common among children.
- Symptoms include loose motions, mild fever and intestinal pain.
- Preventive measures include drinking safe, boiled water and keeping food safe from getting contaminated by flies.
- Amoebic dysentery is caused by protozoan *Entamoeba histolytica.*
- This protozoan enters the body through contaminated food and water. It infects the large intestine and feeds on the red blood cells present in intestinal lining of the patient.
- The disease can spread easily through contaminated food and water, containing the cysts of the causative agent.

Hepatitis

- Hepatitis refers to the condition of inflammed liver.
- It is of three types, Hepatitis A, B and C. Out of these, hepatitis A is infectious in nature and is transmitted through contaminated water. Hepatitis B and C are transmitted through blood and other body fluids.
- Common symptoms of hepatitis A include body ache, enlarged liver, yellowish eyes and deep yellow urine (due to accumulation of bile pigments).
- It can be prevented through hepatitis vaccine and proper hygiene.

Some Vectors and Their Control

We all are aware of the huge population of microorganisms that surrounds us. Most of the microorganisms have diverse environmental as well as economical benefits. However, some of these are also known to cause serious diseases in the plant and animal world and thus pose great threat to the mankind.

Most of the diseases caused by microorganisms, or germs (as we call them in common language), are communicable, that means, they can get transferred from one individual to the other by the means of some agent. These agents that help in transfer of germs include air, water, soil, food, or even any insect or animal. The insects or animals that act as intermediate carriers of disease causing pathogens are known as **vectors**. Some commonly found vectors around us include:

- houseflies
- mosquitoes

- cockroaches, and
- rats

Let us study more about each of them.

Housefly

In nature, houseflies play a major role of cleaning and consuming the left-over food, and thus act as natural scavengers. However they are also one of the most common carriers of disease-causing pathogens and thus are one of the most serious threats to the social health. They are known to carry diseases such as dysentery, cholera, typhoid, etc.

A housefly can either directly transmit a disease-causing pathogen from an infected person to a healthy person, or can contaminate the food we eat through various ways:

- Its **hairy body and legs** can easily pick the germs from dirty places. While resting on our food, a fly can drop these germs by rubbing its legs against themselves or over its body.

- While feeding, flies pour their **saliva** over the food to moisten it. This way the germs in its saliva can enter the food.

- They can also contaminate the human food by **excreting** on it.

Control Measures

(1) Houseflies breed on animal excreta and organic wastes. So all the household refuses and animal wastes should be properly disposed off to control their breeding.

(2) Insecticides can be sprayed at households, offices and other public places to get rid of flies.

(3) Food must be kept covered and well protected.

(4) Avoid the flies to sit on the body.

Mosquitoes

Mosquitoes are well known to transmit some of the most dangerous and fatal diseases. Different species of mosquitoes are known to transfer pathogens of different diseases.

Mosquito Species	**Pathogens Carried by Them**	**Diseases Caused**
Anopheles	*Plasmodium* (a protozoan)	Malaria
Culex	*Wuchereria* (a nematode worm)	Elephantiasis
Aedes	Dengue fever virus	Dengue

Do you know?
The diseases are caused by female mosquitoes only. In fact, male mosquitoes do not bite humans at all! They feed on the plant cell sap, and thus pose no threat to humans.

The disease causing germs are transferred from one individual to other through bites of female mosquitoes.

- The female mosquitoes feast on human blood to derive nutrition for themselves as well as for their eggs.
- When a mosquito bites a human, it first injects its saliva into the skin. Its saliva contains some anti-coagulating proteins that prevents blood clotting and helps the mosquito to suck the blood effortlessly.
- When a mosquito bites a diseased person, it receives the germs of the particular disease.
- These germs grow and multiply within its body.
- Next time, when it bites a healthy person, these disease-causing germs can enter his body through the saliva of the mosquito.

Control Measures
(1) Mosquitoes breed on standing, stagnant waters. So, water should not be allowed to stand at any public area for long time.

(2) All the possible dwelling places of adult mosquitoes should be regularly sprayed with insecticides.

(3) Larvae present in the stagnant waters can be killed by pouring kerosene oil over the surface of water. Oil makes a thin layer over the water surface and thus devoids the growing larvae and pupae from oxygen. Hence, they ultimately die.

(4) Certain fishes, such as *Gambusia*, that feed on the mosquito larvae, should be introduced in the ponds and lakes.

Do you know?
There was a time when use of DDT, an insecticide, was extensively popular worldwide to control the mosquito population. However, at present times it is banned in most of the countries because of its serious health and environmental threats.

DDT is a moderately toxic chemical, low exposure to which may result in nausea, diarrhoea, irritation of eyes, nose or throat. It has shown to have chronic effects on nervous system, liver, and immune system as well. Apart from this, it is insoluble in water and is very persistent in nature.

This results in its bioaccumulation in aquatic animals, making it a serious environmental pollutant. It is also found to be responsible for thinning of eggshells in various birds, thus

leading to decrease in their population.

Cockroaches

- Cockroach is a common pest found at kitchens, cupboards and other household places.
- They are known to eat and spoil food, paper and clothes.
- They live and breed in the dark, damp and filthy places, such as manholes and sewers, and thus carry disease-causing germs on their bodies.
- They contaminate the human food while feeding on it.
- They are known to be the carriers of diseases such as cholera, diarrhoea, typhoid, and even polio.
- They can be controlled by maintaining proper hygiene in and around the houses and by spraying insecticides.

Rats

- Rats are the serious domestic pests. They eat the grains and other food materials, spoil the books and clothes, etc.
- Besides, they are the well known carriers of germs of certain diseases.
- They carry a parasitic insect, known as **rat-flea**, on their skin. This insect is known to cause plague.
- The rats should be either trapped and disposed off far away from the human population, or should be killed through raticides.