

TENDER HEART HIGH SCHOOL

CLASS - 8

DATE

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SUBJECT - BIOLOGY

TEACHER Nidhi Rana

CHAPTER 15 Hygiene - A Key to Healthy Life

Health is a state of complete physical, mental, social and emotional well being and not merely absence of disease.

Hygiene is the science and practice of maintaining good health.

Personal Hygiene is taking care of one's own body

Social Hygiene is taking care of surroundings.

Major aspects of personal hygiene

1. Cleanliness Personal cleanliness involves care of skin, hands, hair, teeth, eyes, ear, nose etc.
 - Washing hands with soap after using toilets
 - Regularly taking bath, everyday. Keeps skin clean and germ free, opens sweat pores and removes odour
 - Undergarments and handkerchiefs must be changed and washed daily.
 - Hair should be washed regularly along with regular combing.
 - Teeth to be cleaned at least twice a day to prevent dental caries and bleeding gums
 - Breathe by nose. It has hair inside which filters the air before it reaches the lungs.
 - Eyes must be cleaned and washed with clear water 2-3 times everyday. Eyes get affected with Trachoma and conjunctivitis commonly that spread through contaminated hands and towels. Never share your personal articles like towel with anyone.
 - Ears should be kept clean, ear wax should be cleaned regularly.

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2. Physical exercise Regular exercise improves blood circulation, muscles remain active and well-toned
3. Rest and sleep One feels fresh and full of vigour after undergoing adequate sleep

4. Healthy habits

- i. Going to bed at fixed time and getting up early.
- ii. Taking food at regular hours and regular bowel movements
- iii. Smoking, drinking alcohol and consumption of drugs is harmful

Living rooms should be well ventilated for fresh air and sunlight

Social Hygiene and Sanitation

1. Public places - cinema halls, offices etc should be kept clean
2. Provision of clean drinking water
3. Proper disposal of sewage and proper sanitation
4. Prevention of air and water pollution
5. Providing green air spaces to check pollution and make fresh air available.
6. Prevention and control of communicable diseases by controlling the vectors

Vector - is any agent that acts as an intermediate carrier of a pathogen. For example housefly carries the germs (pathogen) from dirty places and transfer them to food articles when it sits on food.

Pathogen Germs or microbes that cause us diseases.

Let's discuss about a few vectors

- i. Housefly - are very common carriers and occur in abundance in places which lack sanitation. They carry germs of diseases from dirty places to food/drinks of healthy person and

thus spread diseases. Diseases like Cholera, typhoid, dysentery etc. are spread through houseflies.

Manner in which housefly spreads diseases -

- i) Housefly has hairy body and legs which pick up filth containing germs. A resting housefly keeps rubbing its legs against themselves and over the body, thus dropping particles of filth on food and other articles.
- ii) Housefly moistens the foodstuff by pouring out its saliva on it or when it regurgitates food which it has swallowed from dirty places.
- iii) It deposits its excreta (while it feeds) on the food.
- iii) Housefly directly transfers the infection. Eg. it may carry germs of trachoma from eyes of patient to healthy person.

Control of Housefly

- i) Elimination of breeding places - Garbage should be discharged properly. Before discharge waste should be kept in closed bins. While disposing of the refuse is covered by a layer of earth, enough heat is produced in it by decomposition which kills maggot (larva) of fly.
- ii) Insecticides (DDT) should be sprayed.
- iii) Food must be kept covered. Proper sanitation should be maintained.

2. Mosquitoes.

- 1) Anopheles mosquito (vector) causes malaria by transferring the pathogen Plasmodium from patient to healthy person.
- 2) Culex mosquito spreads elephantiasis (filariasis) caused by a nematode worm Wuchereria.
- 3) Aedes mosquito spreads yellow fever and dengue caused by respective viruses.

The pathogens spread when the mosquitoes bite to suck blood. If the person is infected, the germs

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enter the mosquito with the blood. When such a mosquito bites a healthy person the germs are introduced into his body through saliva. Saliva of mosquito on skin prevents clotting of blood to facilitate suction.

Control of Mosquitoes

- 1) Spraying insecticides (DDT) to kill mosquitoes
- 2) Elimination of breeding places, small ponds and puddles to be filled up with mud.
- 3) Spraying of kerosene on water to form a thin film and block O_2 this kills larva and pupae
- 4) Biological control by introducing Gambusia fish in ponds that eats mosquito larvae.

3 Cockroaches

These are abundant in places with darkness, warmth dampness especially in kitchens, storehouses, manholes etc.

Control of cockroaches.

- i) Spraying of DDT, insecticides
- ii) Maintaining cleanliness

4. Rats

Rats cause considerable damage to grains and spread diseases like plague and typhus fever. Bacteria causing plague are transmitted by rat flea (vector) which lives as parasite on rats. Also, rats directly spread different diseases by contaminating food with germs they pick from dirty places.

Control of Rats

- i) Chemicals (Raticides) should be used to kill rats
- ii) Food should be covered, grains should be stored properly (rat proof bins)
- iii) Rats may be trapped and disposed off.

Water borne diseases

Contamination means unwanted entry of disease causing germs into drinking water / edible foods.

Contamination of potable (drinking) water by -

- i) Improper disposal of sewage into water bodies.
- ii) People defecating / urinating in water bodies
- iii) Animal waste / washings from dairies, poultrys
- iv) Industrial / agricultural wastes

Harmful effects of contamination of water - [a few]

- i) Mercury from industrial waste may affect nervous system
- ii) Tannery waste from leather industry may cause anthrax
- iii) Pesticides may cause hormonal imbalance or cancers
- iv) Fluorides in water may cause tooth disorders, bone disorders or even neuro-muscular disorders.

Common water borne diseases -

1. Cholera

Causal organism Vibrio cholera

Symptoms - diarrhoea, vomiting and dehydration
No urination due to shortage of water in the body,
urea accumulates in blood, which may cause death.

Transmission - Infection occurs through contaminated food and water and also by dust and flies.

2. Dysentery

Two forms of dysentery are -

ii) Bacillary dysentery -

Causal organism Bacterium Shigella

Symptoms - Diarrhoea, intestinal pain and mild fever

Prevention / Treatment - i) Using antibiotics, drinking safe boiled water, eating covered food.

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Amoebic dysentery

Causal organism Entamoeba histolytica

Symptoms and Transmission -

It enters body through contaminated food and water.

It lives in large intestine where it feeds by engulfing RBCs of patient's intestine. When fully mature, it forms cysts which pass out through faeces. On reaching a new host through contaminated food & water, they split off to infect a new individual.

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Hepatitis. Three types - A, B, C.

Hepatitis refers to liver, meaning inflammation of liver. Hepatitis A (infectious) transmits through contaminated water. Hepatitis B and C are passed through blood and other body fluids.

Symptoms - Body ache, Eyes yellowish, deep yellow urine (due to bile pigments) Enlarged liver.

Prevention - Hepatitis vaccine, proper hygiene, Avoid taking fat rich substances.

Home Assignment

Q1. Draw the diagram of Entamoeba histolytica (Fig 15.1 in text book) in your notebook.

Q2. Answer the following "Review Question" (given on Page 155 of your text book) in the notebook.

B. Very short Answer type

Q No. 4, 5 and 6

C. Long Answer type

Q No. 3.