HEALTH EDUCATION

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FOR 1ST YEARS STUDENTS

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Outline

1- Health Education

Introduction

Health education is an effective tool that helps improve health of the nation. It conditions ideas that shape the everyday habits of people, to enable them develop healthy lifestyles. Future generations will also benefit from such properly cultivated life styles that are likely to promote people's health. Health education is the job of all the health care personnel. This chapter includes the definition of health education, its aims and objectives, importance and principles of health education. The approaches to health education, process of behaviour change, factors influencing health and concept of health promotion have also been covered.

1.1 Definition of Health Education

The World Health Organization defined Health Education as "comprising of consciously constructed opportunities for learning, involving some form of communication designed to improve health literacy, including improving knowledge and developing life skills which are conducive to individual and community health". **Any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes**

1.2 Aims and Objectives of Health Education

Education for health aims to motivate people to improve their living conditions. It aims to develop a sense of responsibility for health as an individual, as a member of a family and as a member of a community. Educating individuals and groups of people about health-related matters enables them to behave in a manner conducive to:

The main aims and objectives of health education are to help people to:

- Prevent diseases; by informing and educating them on the principles of healthy living and modifying their health behaviour(s).
- Maintain health; by providing knowledge and skills and, motivating them to practice desirable health practices.
- Promote health; through the adoption of a healthy lifestyle.
- Utilize health services; encourage them to use medical and health services provided for their benefit.

1.3 Importance of Health Education

The importance of our health is the importance of life itself. Without health, life is no more than a pitiful existence. So, we should study it more and learn how to be healthy and how to avoid illness. Health education is becoming increasingly important due to the following reasons:

(1) Now we say that "Your Health is in your Hands!". The government's health departments can not deliver health at the people's door steps. Health is some thing that people have to achieve themselves. The health care persons can only 'enable' them to achieve it.

(2) Disease pattern in the society is changing. Communicable diseases are being slowly replaced by non-communicable diseases. Many of these do not have a cure. They need long term management i.e. people should learn how to manage their diseases over years and years (e.g. diabetes, hypertension, coronary artery disease, etc.). That means the patients need health education.

(3) Democracy is becoming not only a political system but also a social process. Participatory decision-making is being increasingly resorted to. If the decisions are to be taken by people who take health related decisions, all the decision makers have to learn about health! People who work in local, state and national

governments, people who run hospital committees, etc. have to gain health related knowledge!

(4) De-professionalization of healthcare is being emphasized now. People may go to professionals for expert advice and service; but the basic responsibility for health lies with individuals, families and communities. If they do not want to be healthy, they may even spend money to spoil their health (e.g. spending on tobacco, alcohol, addictive drugs, high speed vehicles, etc.). How can health care persons deliver them health on a platter? They have to learn how to be healthy. That is, they need health education.

1.4 Principles of Health Education

Some of the principles of health education are listed below:

1- Perception and credibility
2- Guide people from the known to the un-known. Start by telling about something they know already. And relate the new thing that you intend to tell, to things they already know.
3- Interest; it is a psychological principle that people are unlikely to listen to those things which are not in their interest.
4- Reinforcement (repetition at intervals) leads to comprehension. Telling once is not enough. It is not easy for people to change their behavior.
5- Frightening people a little may be useful. We may have to at times frighten them about the disease producing condition! But frightening too much is also not good. We have to be truthful and realistic.
6- Learning by doing/ role models
7- Interaction
8- Good Human Relationship

9- Motivate the people – Don't just impart knowledge; appeal to their emotions! Fear appeal is one method.

10- Ensure participation of the person/community.

11- Understand that a new idea spreads in a community slowly - When we introduce a new idea into a community like to adopt the new idea.

1.5 Scope Health Education

1. Home and family health
2. School
3. Community
4. Hospital and disease prevention and control
5. Nutrition
6. Mental Health
7. Emergency and first aid
8. Human biology
9. Use of health services

1.6 Stages of Behavioral Change

1- *Stage of Awareness:* The person gets very general information about the new issue. As a result of this, he/she may develop interest in the issue.

2- *Stage of Interest:* The person seeks more information.

3- *Stage of Evaluation:* In the light of new information obtained, the person considers and evaluates its usefulness to him. This evaluation results in a decision.

4- *Stage of Trial:* The person may like to try the method. At this stage, as facilitators, we have to support the individual in implementing the decision effectively and ensure success.
5- *Stage of Adoption:* If the individual is satisfied with the outcome of the trial, he/she may adopt the material/process permanently.

1.7 Types of Appeals in Health Education

The Appeal: The way the content of the message is organized to persuade/convince people.

1. Logical/Factual Appeal: Conveying the need for action by giving facts and figures.
2. Fear Appeal: Frightening people by emphasizing the serious outcomes of not taking action.
3. Emotional Appeal: Arousing emotions, images and feelings.
4. Humor Appeal: Funnily conveying a message (e.g. cartoon).
5. Positive Appeal: Asking to do something (e.g. breastfeeding).
6. Negative Appeal: Asking not to do something (e.g. Don't spit around).

1.8 Factors that Influence Our Health

We can not achieve health just by distributing medicines or by doing surgical operations. We have to understand that health is the result of achieving an equilibrium between a number of factors. Our genes, our environment, our behavior and the health care services we avail, all have influence on the status of our health. We have to remember this while educating people.

Environment

_ Housing

__Water /sanitation

__Education

__Poverty

__Pollution

__Gender inequality

Health Care

_ Access to services

__Effectiveness of services

__Immunization

__Disease Prevention

Behavior

_ Smoking

__Exercise

__Diet

__Sexual behavior

Genes

_ Inherited health potential

1.9 Steps in Planning of Health Education Program

1. Find out the needs\the topic; prepare the contents.
2. Find background of the target group; their age, sex, knowledge, skills and education, socioeconomic condition, language they speak, beliefs, values, attitude, media habits, health problems, felt needs, their common health practices, etc.
3. Know the locally available resources; meet influential people, and community leaders.

4. Decide where the health education program should take place; it could be at a primary health center, in the hospital ward, at home, in a community center etc.
5. Decide what method to use; one-to-one, small group or large meeting, demonstration, exhibition, drama etc.
6. Decide what audio-visual aids would be needed to support the program
7. Decide how you will evaluate the outcome of the health education (short and long-term evaluation).

1.10 Role of educator:

• Talking to the people and listening to their problems

• Thinking of the behavior or action that could cause, cure, and prevent these problems.

• Finding reasons for people's behaviors

• Helping people to see the reasons for their actions and health problems.

• Encouraging people to replace their unhealthy behavior with healthy ones.

2- Communication

Communication; is an inevitable part of our social life. We need to be effective in our communication if we have to succeed in our personal, social, and professional lives. Communication is a process by which we convey our message to a person or a group of people. It can be described as a 2-way process of exchanging information, ideas, and feelings, and of shaping perceptions.

2.1 Effective Communication

In effective communication, the message we send reaches the receiver with very little distortion. If the message is conveyed clearly and unambiguously, then it is known as “effective communication”.

Communicating effectively is something that all of us can achieve. It requires self-confidence, good articulation, and knowledge of how communication can be made more effective. Communication is successful only if the receiver understands what the sender is trying to convey. When the message is not clearly understood, it means that there is a “barrier to communication”.

2.2 Skills for Effective Communication

Good communication can take place only if both parties feel at ease and understand one another. To communicate effectively, a person has to try to see and feel as the other person sees and feels. People may not always agree. They have to understand the other’s point of view. They have to listen to one another. The effectiveness of communication is related to: timing of the message, choice of the channel, message structure, delivery style of the message and mode of

communication. Development of the following skills helps us in communicating effectively:-

- Talking and Presenting Clearly: Ensure that people see, hear and understand the message that is shared with them. We have to talk or write in a simple and clear language that they understand. Prevent communication barriers. Make effective use of audiovisual aids.
- Listening and Paying Attention: Communication involves both giving and receiving. We should be good listeners. Body language should convey that we are indeed hearing what the other person is saying. Maintain direct eye contact, but not constantly.
- Attaining Empathy: Empathy is one of the most important life skills required for effective communication. Empathy means the ability to understand things from the other person's perspective. That is, putting one's feet in the other person's shoes. Empathy helps us to understand and accept others (they may be from a very different background than ours). This improves our interaction with people and helps in building relationships.
- Interpersonal Relationships: Capacity to develop relationship is an important life skill. We should develop the capacity to make and maintain healthy relationships. We may have to end relationships constructively, whenever needed.
- Tone of Voice - The tone should be soothing. It should not show up wild emotions.

2.3 Barriers to Communication

Many people think that communicating is easy. It is after all something we've done all our lives. There is some truth in this simplistic view. Communicating is straightforward. What makes it complex, difficult, and frustrating are the barriers

that come in the way. Barriers to effective communication can cause roadblocks in both our personal and professional lives. Barriers to effective communication are one of the problems faced in our hospitals. Usually, some amount of loss of meaning occurs while conveying messages from
a sender to a receiver.

The different types of barriers are:-

1. Physiological barriers
3. Physical barriers
4. Language barriers
5. Emotional barriers
6. Gender barriers
7. Cultural barriers
8. Lack of subject knowledge

1. Physiological barriers - One of the major barriers to any communication e.g. difficulty in hearing or in expression.
2. Physical barriers - Physical barriers include large working areas that physically separate people from other working units. Noise in the background is another barrier. The physical barriers in our workplace include marked-out territories (‘strangers are not allowed’), closed office doors, barrier screens, and separate areas for people of different status. Research shows that one of the most important factors in building cohesive teams is proximity. Nearness to others aids communication. It helps us get to know one another better.
3. Language barriers - Inability to converse in a language that is known by both the sender and receiver is the greatest barrier in our hospitals. When we use such language, it is a way of excluding others. Even if they know the language, people often use inappropriate words while conversing or writing. They think

they have written down what they wanted to say. They may not have actually written what is in their mind. This leads to misunderstanding. In an increasingly globalizing world, when we want to develop India as a center for 'Medical Tourism', the greatest compliment we can pay to another person is, to talk in their language!

4. Emotional barriers - Our emotions could be a barrier to communication. In emotional situations (when we are angry or worried about our own problems), we may not properly listen to others. And even if we listen, we may not understand the message conveyed to us. Emotions include hostility, anger, mistrust, suspicion and fear. As a result, we hold back from communicating our thoughts to others. Excessive fear of what others might think of us can reduce our effectiveness as communicators and our ability to form meaningful relationships.
5. Gender barriers - There are distinct differences in the speech pattern of a man and of a woman. In one day, a woman tends to speak two to three times more words than a man. In childhood also, girls start speaking earlier than boys. These differences between men and women are due to the fact that the wiring of a man's brain is different from that of a woman's brain.
   - When a man talks, his speech is located in the left side of the brain, but in no specific area.
   - When a woman talks, the speech is located in both the hemispheres of the brain (the left and right) and in two specific locations.
   - Men tend to talk in a linear, logical and compartmentalized way. They use features of left side of the brain, which has more of the thinking elements.
   - Women talk more freely, mixing the logic and the emotions, and using the features of both sides of the brain. Thus, a female health worker can empathize with a female patient better.

6. Cultural barriers - We may not understand enough the persons from other cultures. In such cases, it would be difficult to communicate with them effectively. Even worse, we may have a cultural bias! While working in hospitals, we should overcome our cultural biases. Also, we should develop a positive attitude towards dealing with persons from other cultures (e.g. tribals, people speaking other languages, people from foreign countries). Try to understand their language (even speaking a few words makes a lot of difference) and their mannerisms. Do not laugh at them or ridicule them. Pay extra attention and time for people from other cultures. Keep up your smile. Thus, we can acquire intercultural skills. That means we possess the ability to successfully communicate with people from other cultures. Inter-cultural skills help us in the hospitals.
7. Lack of subject knowledge - If a person who sends a message lacks subject knowledge then he may not be able to convey his message clearly. The receiver could misunderstand his message, and this could be a barrier to effective communication.

3- Prevention

3.1 Definition of prevention

Actions aimed at eradicating, eliminating or minimizing the impact of disease and disability, or if none of these are feasible, retarding the progress of the disease and disability.

3.2 Levels of prevention

1- Primordial prevention: It refers to the prevention of risk factors in population groups in which they have not yet appeared. It is the purest form of prevention and this concept is applied in the prevention of chronic diseases. E.g. Adoption of healthy lifestyles during childhood to prevent the development of risk factors like being overweight which can lead to chronic diseases such as heart disease, diabetes, stroke etc. in adulthood.

2- Primary prevention: It is an action taken before the onset of the disease. It calls for action at the pre pathogenesis phase of the disease. This is further classified as:

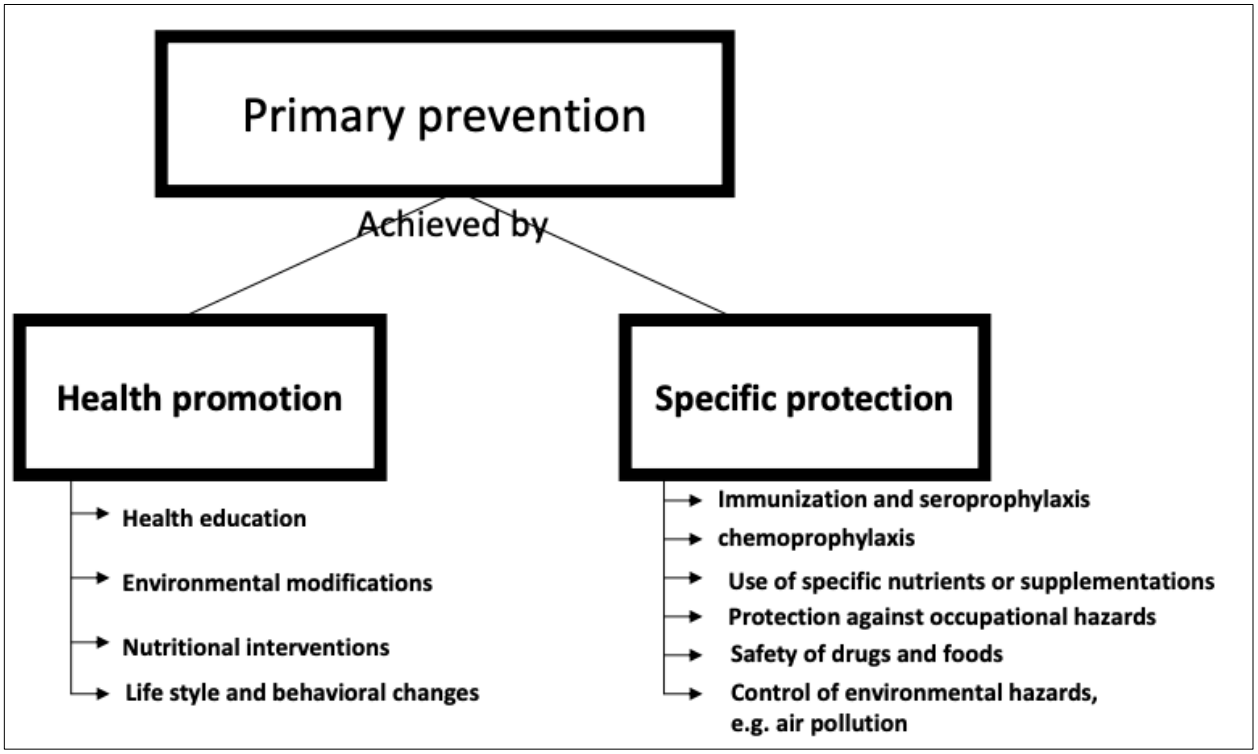
i) Health promotion: This includes general measures that promote health e.g. health education and improvement in environmental conditions. Thus it is not disease-specific; it is based on non- specific measures.

ii) Specific protection: This includes specific measures to prevent a particular disease or group of diseases e.g. administration of DPT vaccine to prevent diphtheria, pertussis (whooping cough), and tetanus.

3- Secondary prevention: It is the action taken in the early stage of the pathogenesis phase to arrest the progress of the disease and prevent complications. This is done by early diagnosis of the disease and treatment. It also helps in the prevention of transmission of the infectious agent to others in the community. It is the main intervention in disease control. E.g. a person with a cough is subjected for

sputum examination for tuberculosis and if positive, is treated with anti tuberculosis drugs.

4- Tertiary prevention: It is the action taken to reduce or limit disability and minimize suffering caused by the disease. This is done when the disease has crossed the early stage which is in the late pathogenesis phase. E.g. a child whose limb has been paralyzed by poliomyelitis can be rehabilitated by surgery and appropriate aids so that he can walk.



4- Common Health Problems

1. Obesity

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy. Body mass index (BMI) compares weight and height. It is used to define a person as overweight (pre-obese) when their BMI is between 25 kg/m2 and 30 kg/m2 and obese when it is greater than 30 kg/m2. BMI is defined as body weight in Kg divided by height in meters^2. To calculate your Body Mass Index (BMI), take your weight (in kilograms) and divide by your height (in meters) squared. BMI=Weight in Kg/ (height in meters)^2. A BMI between 19 and 25 is normal. Less than 19 is underweight. BMI between 25 and 30 is overweight. BMI greater than 30 is obese. BMI above 40 is considered moribund obesity and it means that the person is prone to various cardiovascular disorders.

BMI Categories:

- Underweight - BMI <19 Kg/m^2
- Normal weight - BMI = 19 - 25 Kg/m^2
- Overweight - BMI >25- 30 Kg/m^2
- Obesity - BMI of greater than 30 Kg/m^2

Causes of Obesity and Consequences

Obesity is most commonly caused by a combination of excessive dietary intake of calories and lack of physical activity. A limited number of cases are due to genetic susceptibility, medical problems, or psychiatric illness. Obesity leads to many diseases, particularly heart disease, diabetes, breathing difficulties during sleep, and arthritis.

Symptoms

The main feature is increased body weight, due to fat deposition. Patients with obesity can have high blood pressure, diabetes, breathing disorders, and complications.

Treatment

The primary treatment for obesity is dieting and physical exercise. If this fails, antiobesity drugs may be taken to reduce appetite or inhibit fat absorption. In severe cases, surgery (bariatric surgery) is performed to reduce the stomach volume and length of the small intestine. Such surgery leads to earlier satiation of hunger and reduced ability to absorb nutrients from food. Obesity may be prevented by intake of proper diet, regular exercise and avoiding excess carbohydrates/spicy food/ junk food.

Health Education to Prevent Obesity

- Reduce consumption of oily foods and sweets.
- Consume more fruit and vegetables.
- Increase physical exercise.
- Avoid junk foods.
- Use a bicycle as much as you can.
- Go for swimming.

2. Diabetes

Diabetes is a disease in which the body doesn't produce enough insulin or properly utilize the insulin that is available. This results in excessive sugar in the blood. Insulin is a hormone that is secreted by the pancreas. It is needed to convert sugar and starches into energy, which is needed in our body for daily activity.

Causes of Diabetes

The cause of diabetes is some defect in insulin production or its efficacy. It is usually due to genetic abnormality. Family history is present in many cases. Factors such as obesity and lack of exercise also play a role. Illness, infection, and stress can also lead to diabetes.

Symptoms of Diabetes

The most common symptoms of diabetes are the following:

_ Frequent urination

_ Excessive thirst

_ Extreme hunger

_ Unusual weight loss

_ Increased fatigue

Most of the symptoms are the body's way of trying to stabilize the blood glucose levels. The frequent urination is the body's attempt to rid the excess sugar (glucose). The extreme hunger is because the excess glucose in the body is outing in the blood stream instead of being utilized in the body's cells.

Types of Diabetes

There are two types of diabetes; type 1 and type 2.

Type 1 Diabetes is also called Insulin Dependent Diabetes. This is when the body is no longer producing insulin and artificial insulin must be administered through the form of an injection.

Type 2 Diabetes is also called Non Insulin Dependent Diabetes. This is when the body is still producing insulin, but is not enough to meet the requirements needed to keep blood sugar (glucose) levels normal. In some cases, insulin is not able to send glucose into tissues from the blood. Changing eating habits or losing body weight can be very therapeutic for returning blood glucose levels to normal.

Complications

The primary feature of this disorder is elevation in blood glucose levels (hyperglycemia).

Sustained hyperglycemia affects almost all tissues in the body. Complications of multiple organ systems can occur including the eyes, nerves, kidneys, and blood vessels. Diabetes is one of the leading causes of blindness. Other complications of diabetes are kidney failure, heart disease, stroke, skin complications, and nerve damage. Ignoring high blood sugar can be very dangerous. If not treated, high blood sugar can lead to coma and even death.

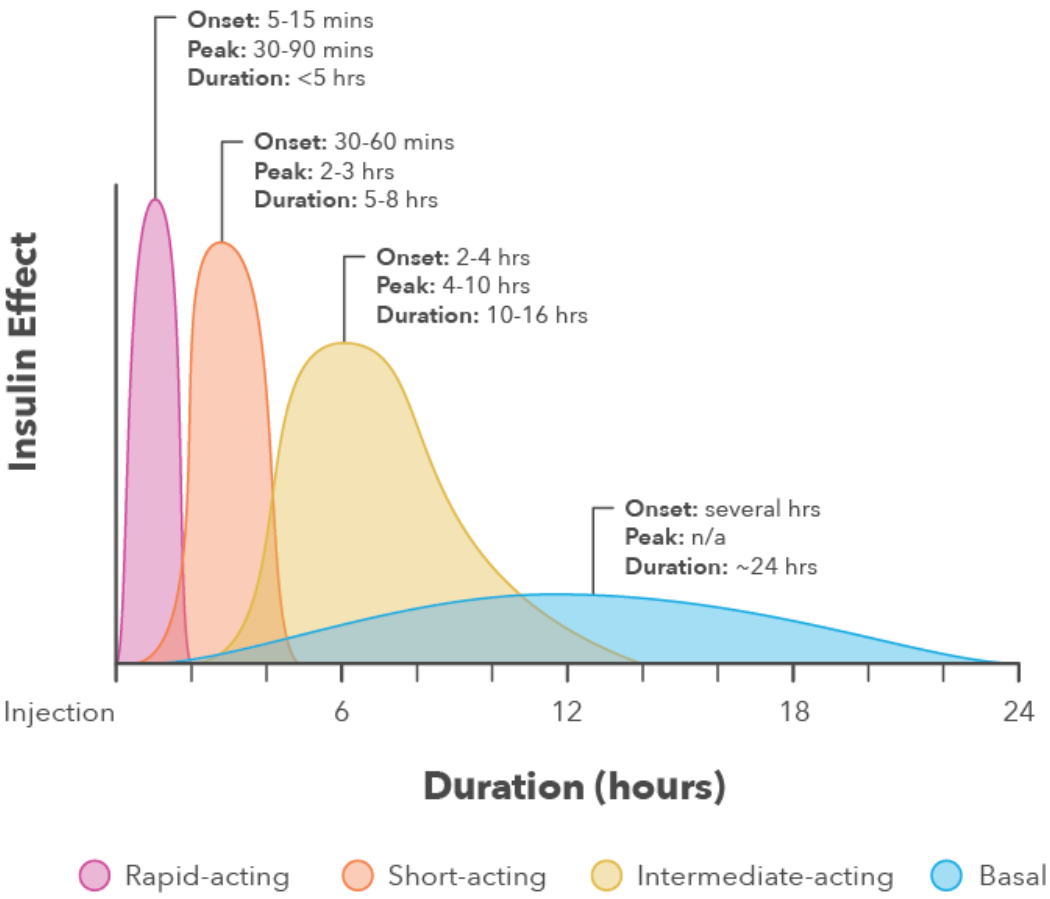
Diabetes Mellitus Management

Primary treatment goals for diabetes patients include the achieving of blood glucose levels that are close to normal. This can be achieved by regular exercise, diet control, giving insulin injections or drugs, which increase the efficacy of insulin that is produced in the body.

The treatment of low blood sugar consists of administering a quickly absorbed glucose source. These include glucose containing drinks, such as orange juice, soft drinks (not sugar-free), or glucose tablets in doses of 15-20 grams at a time (for example, the equivalent of half a glass
of juice). If the individual becomes unconscious, glucagon can be given by intramuscular injection. To treat diabetic retinopathy, a laser is used
to destroy and prevent the recurrence of the development of small aneurysms and brittle blood vessels. Approximately 50% of patients
with diabetes will develop some degree of diabetic retinopathy after 10 years of diabetes, and 80% of diabetics have retinopathy after 15 years of the disease. Poor control of blood sugar and blood pressure further aggravates eye disease in diabetes.

	Hypoglycemia	Hyperglycemia
Signs and symptoms	▪ Nervousness, pallor, tremors. ▪ Palpitation, numbness, sweating, hunger, weakness, dizziness, irritability, dilated pupils, loss of coordination, seizures, and coma.	▪ Polyuria, polydipsia. ▪ Nausea, vomiting, abdominal pain and increased pulse and low blood pressure. ▪ Dehydration and oliguria. ▪ Acetone odor in mouth, ketone-body in urine. ▪ Coma and death.

Insulin Activity Chart



Note: The chart shown above is intended to serve as a general guideline for when your insulin will start working, but when you should take it depends on various factors related to your individual health. Always be sure to follow your healthcare professional's recommendations, which are based on your individual needs.

RAPID	Humalog or Lispro	< 15 min	60-90 min	3-5 hrs	• Inject 10-15 min before mealtime • Typically used in conjunction with longer-acting insulin.
	Novolog or Aspart	< 15 min	60-120 min	3-5 hrs	
	Apidra or Glulisine	< 15 min	60-90 min	1-2.5 hrs	
SHORT	Regular (R) Humulin, Actrapid or Novolin	30-60 min	2-5 hrs	6-8 hrs	• Inject at least 20-30 minutes before mealtime
	Velosulin	30-60 min	2-3 hrs	2-3 hrs	
INTERMEDIATE	NPH (N)	1-2 hrs	4-12 hrs	18-24 hrs	• Commonly used twice daily • Often combined with rapid- or short-acting insulin
	Lente (L)	1-2.5 hrs	3-10 hrs	18-24 hrs	
LONG	Ultralente (U)	30 min- 3 hrs	10-20 hrs	20-36 hrs	• Covers insulin needs for 24 hrs • If needed, often combined with rapid- or short-acting insulin
	Lantus or Glargine	1-1.5 hrs	No Peak	20-24 hrs	
	Levemir or Detemir	1-2 hrs	6-8 hrs	Up to 24 hrs	
PRE-MIXED	Humulin 70/30	30 min	2-4 hrs	14-24 hrs	• Combination of intermediate- and short-acting insulin • Commonly used twice daily before mealtime
	Novolin 70/30	30 min	2-12 hrs	Up to 24 hrs	
	Novolog 70/30	10-20 min	1-4 hrs	Up to 24 hrs	
	Humulin 50/50	30 min	2-5 hrs	18-24 hrs	
	Humalog 75/25	15 min	30 min-2.5 hrs	16-20 hrs	

Advice to Diabetic Patient

• Avoid use of sugar.

• Take timely medicine/insulin, as advised.

• Do not miss meals.

• Take small frequent meals.

• Take preventive steps to avoid complications.

• Watch for complications.
• Regular check-up.
• Exercise.

3. Asthma

Asthma is the leading cause of chronic illness in children. It is a chronic disease that causes the airways (the tubes that carry air in and out of lungs) to become sore and swollen [inflammation of airways]. The airways become narrower by increased production of mucus, mucosal swelling and muscle contraction. When asthma symptoms become worse
than usual, it is called an asthma attack. Children have smaller airways than adults, which makes asthma especially serious for
them. In between the attacks of breathlessness, children can be normal.

Causes of Asthma Attacks

Many things can cause asthma. These include :
- Allergens - mold, pollen, animals
- Irritants - cigarette smoke, air pollution
- Weather - cold air, changes in weather/temperature
- Infections - flu, common cold.

How Asthma is Manifested?

_ Frequent coughing spells, which may occur during play or at night
_ Rapid breathing and difficulty in breathing
_ Complaint of chest tightness or chest “hurting”

_ Whistling sound (wheezing) when breathing in or breathing out.

Tests

Asthma is usually diagnosed by history and clinical examination. Pulmonary function tests (PFT) also called Lung Function Tests (LFT) measure the amount of air in the lungs and how fast it can be exhaled. The results of PFT/ LFT can help the doctor determine how severe the asthma is. Other tests include allergy skin testing, blood tests and X-rays.

Conditions that Worsen Asthma

• Cigarette smoking
• Allergens - dust, pollens
• Air pollution
• Certain medicines e.g. Aspirin

Treatment

Asthma is treated with two kinds of medicines: quick-relief medicines to stop asthma symptoms and long-term control medicines to prevent symptoms. Asthma medications are given as inhalers or through nebulizer (also known as a breathing machine). A nebulizer delivers asthma medications, usually bronchodilators, by changing them from a liquid to a mist. A child gets the medicine by breathing it in through a facemask. Precautions may be necessary to avoid inhalation of cold air. A heavy scarf, worn loosely over the nose and mouth, will help avoid cold air-induced asthma.

Advice to Patients of Asthma

• Adopt a healthy life style.

• Prevent exposure to severe cold weather.

• Use steam inhalation.

• Take adequate rest; avoid strenuous work.

• Take treatment as advised.

• Use oxygen when necessary.

• Stop smoking.

• Protect yourself from allergens; (like pollens, animals).

• Prevent infections like _ u, common cold.

• Avoid exposure to smoke and dust.

• Take well balanced diet.

• Regular exercise.

• Avoid obesity.

4. Hypertension

Hypertension is the term used to describe high blood pressure. Blood pressure readings are measured in millimeters of mercury (mm Hg). It is usually given as two numbers. For example, 120 over 80 (written as 120/80 mm Hg). Blood pressure measurements are the result of the force of the blood pumped by the heart and the size and condition of the arteries.

In hypertension, either or both of these numbers may be too high. The top number is the systolic pressure, the pressure created when one's heart pumps blood. It is considered high if it is consistently over 140 mm Hg. The bottom number is the

diastolic pressure, the pressure inside blood vessels when the heart receives blood, before pumping out. It is considered high if it is consistently over 90 mm Hg. So if the systolic BP > 140 mm Hg or diastolic BP > 90 mm Hg, it is hypertension.

Causes of Hypertension

Kidney diseases or diseases of blood vessels can cause hypertension. Abnormal production of certain hormones, like adrenaline, and steroid hormones can produce hypertension. In most people, no cause is identified, in which case, it is called essential hypertension.

High blood pressure can affect all types of people. The person has a higher risk of high blood pressure if there is a family history of the disease. Smoking, obesity, and diabetes are all risk factors for hypertension.

Symptoms of Hypertension

- Most of the time, there are no symptoms. Chest pain, palpitations, nose bleed, decreased vision and headache may occur. Dangerously high blood pressure (called malignant hypertension) manifests as severe headache and altered sensorium.

Tests

- Blood pressure is measured by an instrument, called sphygmomanometer.
- ECG and X-ray chest are done to assess heart enlargement.
- Other tests may be done to look for changes in kidney, eyes or other organs due to hypertension.

Treatment

- The goal of treatment is to reduce blood pressure so that the patient has a lower risk of complications.
- Diuretics, which increase urine output, along with increased sodium
- excretion will be useful.
- Regular exercise, decreased intake of salt, relaxation techniques (like meditation), and reduction of body weight (if the person is obese) are useful in reducing high blood pressure.

Prevention

- Adults over the age of 18 should have their blood pressure checked periodically.
- Lifestyle changes may help control the blood pressure. Lose weight if overweight.
- Excess body weight adds to the strain on the heart. In some cases, weight loss may be the only treatment needed.
- Exercise regularly. Eat a diet rich in fruits and vegetables. Reduce fried
- and highly oily foods. Avoid chewing tobacco. Tobacco increases BP and spoils arteries.
- Avoid alcohol. If diabetic, keep the blood sugar under control.

Complications of Uncontrolled Hypertension

• Heart disease

• Kidney damage

• Vision loss

• Paralysis

• Heart attack
• Death

5. Arthritis

Arthritis is a group of conditions involving damage to the joints of the body. In arthritis, the joints become inflamed. Arthritis is a term that actually describes over 100 different types of conditions. They affect the joints, tendons, ligaments, muscles, and cartilage. Some of these conditions can also affect the important organs of the body (heart is affected in rheumatic arthritis).

Types of Arthritis

Arthritis is one of the most common chronic conditions in the world. Some of the most common types of arthritis are:

• Osteoarthritis - This occurs when the joints break down due to wear and tear. It occurs more in older people.
• Rheumatoid Arthritis - This is an autoimmune disease (the body attacks its own joints) causing pain, swelling and some disabling effects. This can affect the whole body and may cause damage to the eyes, heart and/or lungs.
• Gout - This often produces a sudden and severe attack of joint pain and swelling. This type of arthritis is caused by excess uric acid in the blood. It often begins in the joint of the big toe, but can occur in any joint.
• Ankylosing Spondylitis - This is arthritis of the spine that causes swelling, pain, stiffness and other complications.

Symptoms of Arthritis

Swelling and pain in joints, limitation of the movement of the joints, stiffness, redness, tenderness and warmth over the joint are some of the common symptoms of arthritis. In rheumatic arthritis, fatigue, weight loss and other general symptoms can be present. Kidney problems can be found in rheumatoid arthritis.

Causes/Risk Factors

The causes and risks depend on the type of arthritis.

Injury and age put a person more at risk for osteoarthritis.

Heredity is also a major risk factor.

Diseases like rheumatoid arthritis can affect children as well as adults.

Osteoarthritis is more likely to affect an older person.

Tests/Diagnosis

A detailed medical history and examination of the joints help in the diagnosis for cause of arthritis. X-rays can show joint damage from osteoarthritis and chronic gout. The blood, urine and other tests can be used if arthritis affects the body systems. A rheumatologist is the specialist who is most qualified to diagnose type of arthritis and related disorders.

Treatment

Treatment depends on the type of arthritis. Physical therapy can be used to treat some forms of arthritis. The most common treatments include splinting the joint for support, anti-inflammatory drugs to lessen swelling, drugs to suppress the body's immune response (e.g. cortico-steroids), paraffin wax dips, cold packs and surgery.

Osteoarthritis may need hip and knee joint replacement surgery. Rheumatoid arthritis can be best treated by immune-suppressants that stop the body's attack on the joint fluid.

6. Cancer

Cancer is a term used for diseases in which abnormal cells divide without control. Such cells are capable of invading other tissues. Cancer cells can spread to other parts of the body, through the blood circulation and lymph circulation.
The leading sites of cancer among men are the cancer of the oral cavity, lungs, esophagus and stomach. Leading sites among women are the cervix of the uterus, breast and oral cavity. Oral and lung cancers in males; and cervical and breast cancers in females account for more than 50% of all cancer deaths in India.

Types of Cancer

Cancer is not just one disease but many diseases. There are more than 100 different typesof cancer. Most cancers are named after the organ or type of cell in which they start. For example, cancer that begins in the colon is called colon cancer; cancer that begins in basal cells of the skin is called basal cell carcinoma.
Cancer types can be grouped into broader categories.
The main categories of cancer include:
• Carcinoma - cancer that begins in the skin or in tissues that line or cover internal organs.
• Sarcoma - cancer that begins in bone, cartilage, fat, muscle, blood vessels, or other connective or supportive tissue.
• Leukemia - cancer that starts in blood-forming tissue such as the bone marrow and causes large numbers of abnormal blood cells to be produced which enter the

blood.

• Lymphoma and myeloma - cancers that begin in the cells of the immune system.

• Central nervous system cancers - cancers that begin in the tissues of the brain and spinal cord.

Origins of Cancer

All cancers begin in cells, the body's basic unit of life. To understand cancer, it's helpful to know what happens when normal cells become cancer cells. The body is made up of many types of cells. These cells grow and divide in a controlled way to produce more cells, as they are needed to keep the body healthy. When cells become old or damaged, they die and are replaced with new cells. However, sometimes this orderly process goes wrong. The genetic material (DNA) of a cell can become damaged or changed, producing mutations that affect normal cell growth and division. When this happens, cells do not die when they should and new cells form when the body does not need them. The extra cells may form a mass of tissue, called a tumor. Some cancers do not form tumors. For example, leukemia is a cancer of the bone marrow and blood.

Types of Tumor

Not all tumors are cancerous; tumors can be benign or malignant.

• Benign tumors aren't cancerous. They can often be removed, and, in most cases, they do not come back. Cells in benign tumors do not spread to other parts of the body.

• Malignant tumors are cancerous. Cells in these tumors can invade nearby tissues and spread to other parts of the body. The spread of cancer from one part of the body to another is called metastasis.

Risk Factors for Cancer

• Unhealthy lifestyle

• Smoking

• Chewing of tobacco

• Alcohol

• Poor personal hygiene

• Air pollution

Danger Signs for Early Detection of Cancer

• Lump or hard area in breast

• Persistent cough or hoarseness of voice

• Bleeding from any of the orifices

• Unexplained weight loss

• Swelling or sore that does not heal

• Any wound that does not heal

• Change in bowel habits

• Change in wart or mole

Important Measures for Preventing Cancers

• Avoid smoking.

• Avoid chewing of tobacco.

• Prevent ulcers and infections in the mouth.

• Maintain oral hygiene.

• Periodic screening, check up.

• Eat healthy diet.

• Avoid alcohol.

• Practice healthy lifestyle.

• Regular exercise.

Treatment

• Radiotherapy

• Surgery

• Chemotherapy

7. Epilepsy

Epilepsy is de_ ned as recurrent episodes of abnormally increased electrical activity of the brain, which manifests as transient episodes of seizures (brief episodes of altered consciousness). It is a very common neurological disorder. About 50 million people worldwide are suffering from it. It can manifest as recurrent, abnormal, jerky movements of body, which usually last for a few minutes. Some patients lose consciousness during these episodes. Each episode is called ‘seizure’. Occurrence of two or more seizures is termed as epilepsy. With proper medications, one can successfully control it in most of the cases.

Epilepsy is of different types. Not every type lasts life-long. Some types are contend only to some stages of childhood. The classification of epilepsy is done on the basis of their cause, observable manifestations of seizures, location in the brain where the seizures originate, identifiable medical syndromes and the triggers that result in the seizure.

Epilepsy Symptoms

The most common symptom of epilepsy is recurrent seizures. There are many types of seizures, but most broadly classified are:-

• Generalized tonic-clonic seizures (GTCS) (or grand mal), where a person loses consciousness, falls down, stiffens body and starts jerking uncontrollably.
• Generalized absence seizures (petit mal), where there is a brief loss of consciousness for a few seconds, but the person does not fall down. This type of seizures occurs in children.
• Simple partial seizure, the person is fully aware and experiences abnormal twitching movements in body parts (like head, legs, arms, hands, eyes etc.). Might experience odd smells, sounds or tastes.

Causes of Epilepsy

The cause of epilepsy is usually not clear in a person. It is observed that, at times, epilepsy runs in the family. Epilepsy is not a mental illness, it's a neurological disorder.

Epilepsy may develop after damage or injury to the brain,. Such damage may be caused by decreased blood or oxygen supply during birth or stroke, head injury, infection or brain tumor.

Lead poisoning and substance abuse too can lead to epilepsy. At times, maternal injury, infection or systematic illness affects the developing brain of the fetus during the pregnancy and might lead to epilepsy.

A seizure can also be caused by any of the provocants leading to the abnormal neurological activity. These provocants can be like hot water on head, hyperventilation, photosensitive epilepsy), and sleep deprivation.

Epilepsy Management

One can perform an electro- encephalogram (EEG), brain MRI or CT scan, so as to check for epilepsy or to defined the cause of epilepsy.

Medications can be taken to reduce the attacks. Various drugs like carbamazepine, phenobarbital, phenytoin, sodium valproate can be taken in order to control the recurrence of epileptic seizures. Avoiding the triggers will help further in keeping a check on the seizures.

In case of severe cases of epilepsy, brain surgery can be performed.

Epilepsy is not a contagious disease. Most people lead a normal life. They can marry and can have normal children.

During the attack:

- It is harmful to forcefully open mouth to keep something. Keeping keys in hand or making a person to smell shoes are useless in control of seizures.
- It is essential to avoid injury during convulsion.
- Turning the patient to one side in supine posture helps in preventing blocking of airway with throat secretions. It also helps in preventing vomit or secretions from entering into the lungs.

5- Personal Hygiene

Introduction

Healthy habits play an important part in preservation of health. These habits have to be developed and practiced in our day to day life. Maintaining personal hygiene, taking sufficient rest and about eight hours sleep, having nourishing food, regular physical exercise and fresh air are some healthy habits that everyone should practice. Healthy habits help in building physical, mental and social health. This chapter deals with the essentials of personal hygiene and good grooming, hand washing and its importance, methods of hand washing, pitfalls in hand washing and prevention of food poisoning through proper personal hygiene.

Personal Hygiene

The word ‘hygiene’ has been derived from the Greek word Hygeia - the Goddess of health in Greek mythology. Hygiene is defined as “the science of health which embraces all factors contributing to healthful living”. Hygiene can be classified into personal, social and community hygiene.

Personal hygiene is an aspect of hygiene which tells us how an individual preserves, improves and maintains the health of his own mind and body. In fact, it is the first step to good grooming and good health. Personal hygiene leads us towards sanitation as ascientific prescription i.e. it leads us to keeping our body clean, keeping our clothes clean and keeping our streets, villages, towns and cities clean. Thus it is a holistic approach to improve the health of a society.

Personal hygiene is related to keeping our body clean from head to toe. Every external part of the body demands a basic amount of attention on a regular basis.

Maintaining good personal hygiene is important as it helps to:

• prevent transmission of diseases like diarrhea, skin diseases, eye diseases etc.
• prevent hospital infections.
• create good image/public relations.
• enhance feeling of self-worth.
• improve aesthetic sense.
• prevent unpleasant body odor.

Health Problems that can be prevented by Good Personal Hygiene

1. Skin and hair conditions: Head lice and body lice, scabies, ringworm infection, pyoderma and furuncles, perspiration and body odor, dandruff, cracks and callosities.
2. Oral conditions: Dental caries, peri-odontitis (pyorrhoea), stained teeth, oral cancer, bad breath etc.
3. Eye conditions: Eye infections such as trachoma, viral conjunctivitis, etc.
4. ENT (ear, nose and throat) conditions: Ear wax, infections of nose and throat.
5. Genito-urinary conditions: Reproductive tract infections, urinary tract infections, sexually transmitted infections (STIs), cervical cancer etc.
6. Conditions related to digestive system: Diarrhoea, amoebic dysentery, typhoid, infective hepatitis, food poisoning and worm infestations.
7. Other conditions: Athletes Foot (a fungal infection of the skin), paronychia (infection of the edges of the nails).

Now you understand how many health problems and aesthetic problems can be prevented by good personal hygiene! If health care persons get these problems, they can spread infections to the patients in the hospital. So, all health care persons should take personal hygiene seriously!

Aspects of Personal Hygiene and Good Grooming

There is a proverb, 'Cleanliness is next to Godliness'. Cleanliness is desirable from both hygienic as well as aesthetic standpoint. Here are some important aspects of personal hygiene and some good grooming routines:

1) Care of Skin

• Take bath daily with cold/warm water and a mild soap. Use bath sponge for scrubbing.

• Those who are involved in active sports or work out to a sweat would do well to take a bath after the activity.

• Use back brush and heel scrubber. Avoid the use of abrasive material.

• Genitals and anus need to be cleaned well because the natural secretions of these areas in unhygienic conditions can cause irritation and infection. Dry with a clean towel.

• Avoid sharing soaps and towels.

• Change into clean underwear after bath. Other clothes that are worn should also be clean.

• Dry clothing and bedding in direct sunlight.

• Have good rest and sleep, nourishing food, regular physical exercise and fresh air, to keep the skin glowing.

2) Care of Teeth

• Rinse the mouth before brushing to remove plaque and loosen debris from the tooth surface.

• Brush teeth at least twice a day (preferably after every meal).

• While brushing, make sure to get rid of the food particles stuck in between the teeth.

• Brush teeth correctly – Hold the toothbrush at 45º angle against the gum line and move the brush back and forth, with short gentle strokes for 2-3 minutes.

• Use soft brush with rounded bristles. Rinse it well and leave to dry after use.

• There are no perfect toothpastes/powders. Use one without harsh abrasives or strong antiseptics/ chemicals.

Brush gently in all directions for at least 2 minutes each time. Over-brushing erodes the teeth. Under-brushing makes teeth and gums vulnerable to diseases. This fi gure shows children learning in their school about how to brush their teeth properly.

• Change the toothbrush after every 3 months.

• Rinse mouth well after every meal to remove food particles.

• Limit sugary snacks (especially sticky ones).

• Get enough calcium; drink milk.

• Eat healthy and balanced diet.

• Avoid smoking.

• Regular dental check up.

• Avoid chewing ‘paan’ (‘betel cud’ containing areca nut, catechu, slaked lime, condiments and some other materials. It may contain even tobacco!). It can be harmful to both teeth and gums.

It can lead to attrition of teeth and decay of gums. It can also increase the chances of getting oral cancer. Also it can stain the teeth, especially if they are broken/abraded/eroded; or if the roots are exposed due to receding gums (teeth become dirty brown or black).

• Do not chew tobacco. It leads to cancer of the oral cavity. So, avoid chewing tobacco in any form (‘Zarda’, ‘Khaini’ or tobacco-tooth paste). Oral cancer is the most prevalent cancer in our country.

Cleaning of Tongue

• Use a tongue cleaner or toothbrush to clean the tongue.

3) Care of Eyes

• Wash the eyes with clean water, then rinse for 6-8 times a day.

• Dry them with soft clean cloth or towel.

• Avoid rubbing the eyes with soiled fi ngers.

• Do not put kajal or any other make up material into eyes.

• If there is any problem in the eyes, consult eye doctor.

Prevent tainting of your teeth by avoiding tobacco.

• Study in proper light coming from behind. Make sure that the print of the book is fairly bold to prevent undue strain.

• Avoid watching TV for long hours or from very close distance.

• Do not work on computer for hours constantly.

• Use sun glasses in bright sunlight, to prevent / delay development of cataract.

• Get regular eye check up done to detect any abnormalities such as near and far sightedness.

• Eat food rich in Vitamin A e.g. carrot, papaya, mango, guava.

4) Care of Ear

• Never put anything into the ear.

• Clean the outer ear gently with a clean wet cloth.

• If there is water in the ear, turn the head first to one side, then to the other side until the water is drained out on its own.

• Never use sharp edged objects to clean the wax from the ear.

• Always use ear buds to clean the ear.

5) Care of Hands

• Keep hands scrupulously clean at all times.

• Always wash hands with soap and water before and after meals, and after using the toilet.

• Dry the hands with a soft clean towel after wash.

• Prevent cuts and abrasions on hands.

• Keep nails short and clean.

• Nail polish users should see that it does not chip off into the food.

• Do not keep the nails painted continuously as it causes the keratin, of which nails are made, to split.

• Manicure can be done once in three weeks. This requires soaking hands in warm water for ten minutes, massaging of hands, thorough cleaning and shaping of nails. Choose manicure kit with care as in some kits, the instruments are crudely made which will do more harm than good.

6) Care of Nose

• Avoid putting _ nger/any object into the nose.

• Use soft cloth or tissue paper to clean the nostrils.

• Blow the nose on handkerchief or tissue paper.

7) Care of Hair

• Comb the hair daily with a soft bristled brush or a wide toothed comb.
Prevent dust by covering the head.

• Wash the hair minimum twice a week with good shampoo or soap.

• Use clean comb/hairbrush.

• Apply adequate oil and massage gently at least once a week to prevent dandruff.

• Avoid unnecessary use of hair colour and dyes as they can cause scalp allergies, allergic colds and throat conditions.

• Prevent pediculosis (lice infestation), infection by maintaining hair hygiene.

8) Care of Feet

• Wash feet daily; when having a bath, give them a good scrub with a sponge, pumice stone or foot scrubber which is not made of abrasive material.

• After bath, dry the area between the toes.

• Keep toenails clipped.

• Protect feet by wearing shoes or chappals.

• Do not use shoes for hours constantly, slip

them off now and then, to air the socks a bit and make them less smelly.

• Wear cotton socks; wear a clean pair of socks everyday.

• People who have sweaty feet should powder their feet before wearing socks.

• Avoid wearing the same pair of shoes every day; keep at least one more pair and use it alternatively.

• Give importance to comfortable wearing, in the choice of footwear.

• For those who go barefoot indoors, door mats must be cleaned or changed frequently.

• Extra foot care is required for diabetics.

• Apply oil or petroleum jelly to feet in the winter season to keep them soft and supple.

• Pedicure can be done once in three weeks.

Hand Washing and its Importance

Proper hand washing is an essential procedure in a hospital or any healthcare institution. It is one of the most basic ways of preventing nosocomial (hospital acquired) infections. It is also the single cost effective measure which protects healthcare providers. Frequent and thorough washing of hands reduces the number of micro-organisms (germs) present and discourages the multiplication of those which still remain on the hands. Hand washing is the act of cleansing the hands with lathery soap/detergent and water for removing dirt and micro-organisms from hands. It is of two types– routine hand washing and clinical hand washing (before carrying out any procedure for a patient). Minimum time required for routine hand washing is 10-15 seconds. Before any clinical procedure, at

least two minutes hand wash is recommended. As a universal precaution, gloves are used in hospitals before carrying out any procedure, or before handling blood or specimens. The purpose of hand washing is to cleanse the hands of pathogens (including protozoa, bacteria or viruses) and chemicals which can cause personal harm or disease. Hand washing is vitally important especially for people who handle food or work in the health field.

Appropriate hand washing:

• Prevents transmission of faeco-oral diseases like dysentery, cholera,
• Prevents nosocomial infections,
• Prevents infection of surgical wounds in surgical wards,
• Prevents cross infection from one patient to another, and
• Makes the person feel good and clean.

Hand washing is important before and after attending to a sick person. In our daily lives, there are five critical times at which we should wash our hands with soap, if we have to prevent fecal-oral transmission:

• After using toilet,
• Before eating food,
• Before feeding child,
• Before cooking food; or handling raw meat, fish, or poultry, and
• After cleaning child/changing nappies.

Methods of Hand Washing

Hand Washing with Soap and Water

This method is used when hands have visible dirt, and whenever the person comes in contact with a patient. It is a simple step-by-step process:

• Wet hands under running water and apply soap.
• Rub hands together vigorously for at least 15 seconds.

• Cover all surfaces of the hands and fingers. Use circular movements to clean the palms, back of hands and wrists. Interface the _fingers and thumbs and move them back and forth during hand washing.
• Rinse hands under running water.
• Dry the hands thoroughly with a disposable/clean towel.
• Use towel to turn off the faucet (tap) or elbow taps if available.
• Trim nails regularly with nail cutter.

Surgical Scrub

This is done before surgery or procedures which need sterile technique. Here are the steps of surgical scrub:
• Clean under nails;
• Wet hands up to elbow;
• Use antiseptic and rub all surfaces for 2-6 minutes;
• Rinse with running water;
• Dry with sterile towel.

Prevention of Food Poisoning through Proper Personal Hygiene

Food poisoning is an inflammation/acute infection of gastro-intestinal tract caused by ingestion of contaminated food or drink. Humans are the prime source of food poisoning bacteria/viruses. They form a vehicle for the transmission of infections. Food poisoning may be:
1. Bacterial - Caused by consumption of food contaminated by bacteria like Salmonella typhimurium, Staphylococcal aureus, Escherichia coli.
2. Non bacterial – Caused by chemicals e.g. fertilizers, pesticides.
The signs and symptoms of food poisoning include nausea, vomiting, diarrhoea, abdominal pain, headache, fever, and prostration (inability to sit). Apart from these

individual symptoms, there is:

< History of ingestion of a common food,

< Many persons falling ill at the same time, and

< Majority of cases having similar signs and symptoms.

Personal hygiene practices for preventing food poisoning are given here:

• Always wash hands with soap and water before cooking, before eating food or after visit to toilet.

• Maintain a high standard of personal hygiene. Take bath daily. Wear clean clothes.

• Keep nails clean and short.

• Make sure that the hair is clean, tidy and covered.

• People having diseases such as infected wounds, diarrhoea, dysentery, throat infection, etc. should avoid handling food.

• Ready-to-eat food should not be handled with bare hands.

• People who prepare food should have nothing on them that can fall into the food (buttons, hair clips etc.).

• Avoid scratching, or touching the face, nose, mouth or any other body ori_ ces while handling food.

• Avoid coughing or sneezing around food. Cover the mouth and nose with clean handkerchief while coughing or sneezing.

• Get vaccinated against typhoid and cholera.

• Wash hands with soap before and after handling any food, and after using toilet, changing diapers, or after coming into contact with animals.

• Practice clean habits and good personal hygiene.

• Wash the cereals and pulses properly under clean running water.

• Always wash the fruits and vegetables thoroughly under running water before cutting.

• Use safe water for food preparation and for drinking.
• Select food stuffs carefully.
• Store food appropriately in refrigerator or hot case.
• Use boiled milk.
• Food should be served hot. Food with unusual smell should not be consumed.
• Avoid foods and beverages from street vendors.
• Do not eat stale, rotten food, overripe fruits, raw and unwashed fruits / vegetables and, food exposed to dust or flies.
• Raw fruits and vegetables after cutting should be consumed immediately to avoid infection.
• Avoid fl avored ices as these may have been prepared with contaminated water.
• Keep the surroundings clean so that _ ies cannot breed.
• Have adequate space, light, ventilation and washing facilities in the kitchen.
• Maintain cleanliness of work surfaces, utensils and equipments.
• Make sure that the food premises are kept free from rats, _ ies, dirt etc. Food should
not be exposed to dust, _ ies or rats. keep food covered.
• Use a covered dust bin for disposal of garbage and waste food.
• Sanitary disposal of excreta; avoid open _ eld defecation.
• Have regular immunization against typhoid and cholera.

Cooking of Food

• Food should be cooked well.
• Cooked food should be kept covered.
• The water used for soaking cereals or pulses should not be discarded; it should be used for cooking as it contains vitamins and minerals.
• Steaming/pressure cooking of food should be preferred.

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