UNIT-7 | Health & Hygiene

Knowledge	Understanding	Application Skills	Evaluation
The importance of personal hygiene and sanitation.	The students will understand the basics of personal hygiene.	The students will understand and practice the sanitation and hygiene.	Activities, work sheets and assignments, street plays
Dealing with fractures, wounds, cuts and bruises.	They will understand the basics of first aid and how to provide the same in any such situation.	They will apply the training in practical situations.	Activities, work sheets and assignments, street plays

Health is a positive state of well-being, where every part of the body and mind is in harmony and in proper functioning balance with every other part. In other words, when every organ of the body is functioning normally, the state of physical well-being is known as health. It has been well said that only that person can be called really healthy who has a sound mind in a sound body. Health is the characteristic of life that enables a person to live longer. According to the World Health Organisation (WHO): *"Health is the state of complete physical, mental, spiritual and social well-being and not merely absence of disease"*. If a person is disease free or in a good physical state, but under stress, tension, anger, greed etc. than that person is not considered as a healthy person. Hence, in addition to physical health, we must consider the mental and emotional health also, only than spiritual and social health can be achieved and people can progress for the well-being of the society.

Hygiene and sanitation are fields of medical science which aim to preserve and improve the health of the Individual and of the community as a whole. Its study is aimed at making the cadets aware of the many preventable health hazards and to enable them to look after themselves, their community most efficiently and develop habits of healthy living.

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Hygiene and Sanitation

Hygiene is defined as the science and art of preserving and improving health. The purpose of hygiene is to allow man to live in healthy relationship with his environment. It deals both with an individual and a community as a whole. In order to be healthy one must realize that hygiene and sanitation play a very important role. This field has nothing to do with religion or social customs, but it is based on scientific requirements. Personal hygiene involves all aspects of the health of an individual. Responsibility for the maintenance of personal health therefore lies with the individual. Every person must remain in perfect physical, mental and social health, only then can he/she serve the community and the country well.

Personal Hygiene

Maintenance of personal hygiene is very important in preventing disease. It deals with the practices that help in the maintenance and promotion of a person's health. Personal Hygiene helps in maintaining:-

(a) good and clean physique.

(b good muscle strength.

(c) clean mouth and teeth.

(d) perfect physical, mental and social health.

Main Components:

(a) **Sleep:** Sleep means the periodical rest of both body and mind and it is extremely essential for a healthy body. The amount of sleep one requires varies with the individual age. The average requirement of sleep is about 7 to 8 hours a day.

(b) **Bathing:** Keeping the skin clean and healthy is essential for good health. A bath with a mild soap with warm water in winters and cool water in summers are essential for body cleaning. While bathing, all parts of the body including folds in the skin must be cleaned well. After the bath, the body must be dried properly including the folds in the skin as wetness or dampness lead to cuts /fungal infection.

(c) **Eating and Drinking:** Properly cooked food with its full nutrient value is beneficial for health. Food should be eaten slowly and chewed well. It should not be swallowed hastily. Plenty of water should be consumed between meals and strenuous exercise should be avoided after a heavy meal.

(d) **Care and Cleanliness of Skin, Hair and Teeth:** Our skin keeps on secreting sweat and hence it is necessary to keep it clean through bathing and by removing dust and dirt. Regular changing and cleaning of clothing is essential to keep the body fit. Digestive and other disorders take place when decayed teeth and unhealthy gums bleed, causing bad breath. Teeth should be regularly brushed after the last meal at night and early in the morning. Insufficient vitamins C and D are the cause of dental decay.

(e) **Exercise**: Organized games and physical exercise are necessary for proper development of the body and mind.

Water Supply and Its Purification:

(a) **Main Sources of water supply**:

(i) **Rain water**: Most of the fresh water on earth comes from rain. However, most of this water is not fit for consumption due to impurities in the atmosphere.

(ii) **Surface water:** Surface water is found mainly in rivers and streams or lakes. This water is unfit for human consumption without treatment due to discharge of various types of waste into it.

(iii) **Underground streams:** Borewells are a good source of potable water supply. However, even these need to be protected from contamination.

(b) **Purification of Water**: Safe drinking water comes only from an authorized source. Purification provides good and safe water by eliminating the suspended matter, harmful salts in solution, bad taste or smell, undesirable color and germs. The following methods are used for water purification:-

(i) **Boiling and filtering**: Untreated or treated potable water from any unreliable source must be boiled at 100 degrees for 30 min, cooled and then filtered. Only then will it be fit for consumption.

(ii) **Clarification**: This is the removal of suspended matter through filtration by passing it though filter beds of gravel and sand or through properly sterilized filters.

(iii) **Sterilization**: This is done using chlorine gas or bleaching powder.

(iv) **Pinking:** During cholera epidemic, potassium permanganate is mostly used for pinking of wells.

(v) **Precipitation**: Adding alum or some similar chemical to water which makes all impurities accumulate at the bottom and leaves pure water. The purified water is then passed through a filter.

Food Hygiene: Food is a potential source of infection and is liable to contamination by microorganisms at any point during its journey from the producer to the consumer. Prevention of contamination of food has to be observed from production to handling, distribution and serving.

Important components of food hygiene:

(a) Milk Hygiene: Milk is an efficient vehicle for many disease organisms. Contamination of milk may be due to infected animal, human handler or environmental factors.

Precautions:

(i) The animal and its surroundings should be healthy and clean. The animal should be properly washed before milking.

(ii) The milk handler should be free from any communicable disease.

(iii) Milk vessels should be totally clean, sanitized and kept covered.

(iv) Water supply must be safe.

(v) Pasteurization is the heating of milk to such temperature and for such periods of time, as are required to destroy any pathogens without destruction of nutritive value. It does not alter taste.

(b) Meat Hygiene: The word 'meat' includes various tissues of animal origin. The diseases which may be transmitted through meat are tapeworm infestation and bacterial infections like anthrax, tuberculosis or food poisoning. The **a**nimal intended for slaughter, must be subjected to proper ante mortem and post mortem inspection. Good meat should neither be pale pink nor deep purple nor should it be slimy. Good meat should be elastic to touch and should have an agreeable colour.

(c) **Fish Hygiene:** Fish for human consumption should be fresh. In fresh fish, the gills are bright red and the eyes are clear and prominent. Consumption of contaminated fish may cause poisoning.

(d) **Egg Hygiene:** Though the majority of freshly laid eggs are sterile inside, the eggshell may become contaminated by fecal matter from the hen. The egg must be properly washed before cooking.

(e) **Fruits and Vegetables Hygiene:** Fruits and vegetables are an important cause for the spread of pathogenic organisms, protozoan and helminths. Fruits and vegetables to be consumed raw must be washed well.

(f) **Hygiene of Eating Places:**

(i) Eating places should not be located near filthy places, open drains, animal sheds, manure /soakage pits and other such places.

(ii) Floors should be easy to clean, and should be preferably tiled.

(iii) Rooms for storage of food should be well ventilated, insect and rat-proof, with adequate lighting.

(iv) Perishable and non-perishable items should be stored separately.

(v) Furniture should be easy to clean.

(vi) Refuse should be collected in covered bins and removed regularly.

(vii) Water supply should be independent, adequate and safe.

(viii) Proper place for cleaning of utensils should be provided.

(g) **Hygiene of Food Handlers:**

(i) Complete medical examination of food handlers to be done at the time of employment.

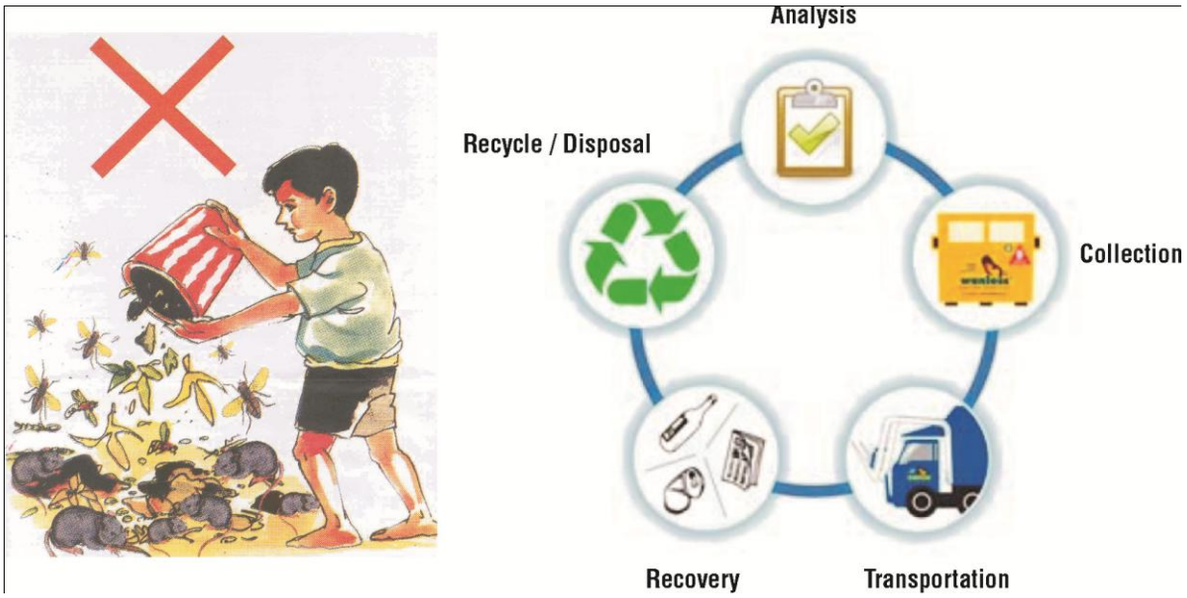
(ii) Regular health check-ups should be done.

(iii) Food handlers should be regularly educated on health and hygiene aspects.

(iv) They should be constantly reminded about hand washing, trimming of nails, covering of hair, wearing of overalls and covering mouth while coughing and sneezing while cooking.

Sanitation

Sanitation means keeping the living area and its surroundings neat and clean. This involves removal of waste and refuse.



Waste or Refuse

(a) Human excreta - faeces and urine.

(b) Stable litter - horses and cow dung.

(c) Dry refuse and garbage - household, municipality, industrial and agricultural.

(d) Liquid wastes: household spillage, municipal and industrial effluents.

(e) Trade waste.

(f) Carcasses and offal of slaughtered animals.

Sources:

(a) **Street Refuse:** Refuse that is collected by street cleaning service or scavenging is called street refuse e.g., leaves, straw, paper etc.

(b) **Market Refuse:** Refuse that is collected from markets is called market refuse. E.g., spoiled vegetable and animal matter.

(c) **Stable Litter:** It contains mainly animal dropping and left over animal feed.

(d) **Industrial Refuse:** Industrial refuse comprises of a wide variety of waste.

(e) **Domestic Refuse:** Domestic refuse consists of ash, rubbish and garbage.

Collection and Removal:

(a) **Household Refuse:** Covered galvanized irons bins are placed on brick / cement platforms at convenient distances from the house. These should be used for dumping house hold refuse. This refuse is then collected in covered wheel barrows or municipal vans to prevent blowing out by wind.

(b) **Special Refuse:** From stables and cowsheds. It is collected in carts and taken to the disposal ground at frequent intervals.

(c) **Street Refuse:** Covered dustbins should be placed at suitable intervals along the street and all the sweeping should be dumped in it. It is then collected early in the morning in covered vans.

Disposal of Waste Products or Refuse:

(a) **Filling**: In this method, the refuse is generally utilized in filling up pits, unsanitary tanks or in reclaiming low land. The area selected should be at least 100-150 feet away from any habitation. No refuse should be left uncovered for more than 72 hrs.

(b) **Controlled Tipping:** Controlled tipping or sanitary landfill is the most satisfactory method of refuse disposal where suitable land is available. Chemical, bacteriological and physical charges occur in buried refuse.

(c) **Incineration:** Hospital refuse, which is particularly dangerous, is best disposed of by incineration.

(d) **Composting**: A method of combined disposal of refuse and night soil or sludge.

(e) **Manure Pits:** The garbage, cattle dung, straw and leaves are dumped into the manure pits and covered with earth, after each day's dumping.

(f) **Burial**: This method is suitable for small camps. A trench 1-5m wide and 2m deep is excavated. When the level in the trench is 40 cm from ground level, the trench is filled with earth and compacted and a new trench is dug out. The contents may be taken out after 4-6 months and used in the fields.

(g) **Sorting**: This method consists of sorting refuse in three separate parts for easy disposal:-

(i) **Breeze**: Cinders and pieces of coal are used for making bricks.

(ii) **Soft Core**: Animal and vegetable organic matter, is used as manure.

(iii) **Hard Core**: Broken bottles and crockery is used for metaling of roads.

Disposal of Human Waste: Proper disposal of human waste/ excreta are very essential for the prevention of various communicable diseases and also to prevent pollution / contamination of soil, water or food (through flies). Various methods are available for disposal of human waste / excreta as per the type of area i.e., area with a proper sewage system (sewered areas) and areas without proper sewage system (unsewered areas).

(a) **Sewered Areas:** The latrines used in such areas are mainly the Flush Latrines. It implies that ample supply of water is available to flush the night soil. It is simple and hygienic.

(b) **Unsewered Areas:** There are various types of latrine for such areas:-

(i) **Domestic Latrines**: These are those latrines which are used in houses in areas not having a sewage system. These are of following types:-

(a) Bore hole latrine: The latrine consists of a circular hole 30-40 cm in diameter dug vertically in the ground to a depth of 4 to 8 mtr. In loose sandy soil, the hole is lined with bamboo matting or earthenware lining.

(b) Dug well latrine: A circular pit about 75 cm in diameter and 3 to 5 cm deep is dug into the ground for the reception of the night soil . In sandy soil, the depth of the pit may be reduced to 1.5 to 2 mtrs.

(c) Water seal latrine: The water seal performs two important functions e.g. it prevents access to flies and it prevents escape of foul odour. Out of many designs of water seal latrines, the RCA type is widely adopted.

(ii) **Camp Latrines:**

Types

(a) Deep trench latrines: A pit three feet wide, at least eight feet deep and of a length suitable to the requirement is constructed and wooden seats placed over it with proper partitions and curtains. Soil may necessitate reverting of sides with sand bags, bamboos or wire netting. On vacation of camp, these are filled with soil to assist in disintegration and prevent breeding of flies.

(b) Shallow trench latrines: For camps of less than a week's duration, a row of trenches in parallel is dug, each trench being 3 feet long, 1 foot wide and 2 feet deep. Each trench should be 2 feet apart. The ratio is 5 trenches for the first hundred users and three for each subsequent hundred. After defecation, the excreta is covered with loose earth with a shovel or a scoop. These trenches are filled up after 24 hours and new trenches are dug.

(c) Urinals: The most common urinal used for camps is the funnel urinals which are constructed over a simple soakage pit.

(iii) **Soakage Pits:** These are essential for the disposal of liquid refuse like greasy water from kitchen and waste water from bathrooms. A pit of 4 feet by 4 feet and 5 feet to 6 feet deep is dug. It is filled with small stones and broken bricks. The top is covered with oiled sacking and earth or sand is put 6 inches above. In the centre, a perforated empty tin of kerosene oil is kept. This tin is filled with layers of gravel or sand and gravel. In this pit the strainer is removed daily and replaced with fresh one.

(iv) **Disposal of Garbage**: Disposal of solid refuse like kitchen garbage, bones etc. is done by burial or burning. The household refuse should be deposited in a covered bin placed outside. Improvised kerosene/oil tins are not advisable. Further disposal should be done under municipal arrangements.

v) **Disposal of Sewage:** Proper disposal and treatment of sewage has assumed great importance today. The disposal of sewage involves treatment and disposal as under:-

(a) **Treatment**: Treatment of sewage is brought about by the action of anaerobic and aerobic bacteria. The different steps involved in this process are:-

(i) Screening.

(ii) Chambering.

(iii) Primary sedimentation.

(iv) Trickling filter.

(v) Activated sludge process.

(vi) Sludge digestion.

(vii) Disposal of effluent.

(b) **Disposal**: The sewage is collected by the water carriage system and where no treatment facility is available can be disposed of by:

(i) **Sea out fall:** The sewage is drained into the sea. This is applicable mostly for coastal cities / towns.

(ii) **River out fall**: The sewage is drained into the river. This is applicable mostly for cities / towns situated along the rivers or connected by drains.

(iii) **Land treatment**: Here the sewage is allowed to drain out on the earmarked land / pits. This is mostly applicable to small villages.

(iv) **Oxidation pond:** A pond that contains partially treated waste water which is then left to allow the growth of algae and bacteria, which decompose the rest of the waste.

First Aid in Common Medical Emergencies

There will be number of occasions on which we may be faced with a situation where, we may be required to provide First Aid to the injured, because of an accident or due to any calamity. Therefore it is very important for all cadets to have knowledge of providing basic first aid in common medical emergencies.

Basic First-Aid Treatment

Injuries to Internal Organs: These injuries cannot be seen but can only be suspected, where

bleeding instead of coming to the surface occurs into the cavity of chest or abdomen wherein, important organs like heart, lungs, liver or spleen might get ruptured. The following symptoms are observed in case of internal injuries:-

(a) Cold clammy skin.

(b) Weak and rapid pulse.

(c) Shallow sighing and breathing.

(d) Face pinched and pale.

(e) Eyes deeply sunken with dark rings around them.

(f) Patient is usually restless and anxious and may lose consciousness.

Treatment

(a) Keep the patient warm and lying down with feet raised up and head kept low.

(b) Apply cold application on the suspected injured region.

(c) Cheer up the patient.

(d) Arrange medical attention as soon as possible.

Burns and Scalds: Burns may be caused by heat either, dry by contact with fire or flame, or wet, as caused by moist heat such as hot water, hot fluids and steam, which is called scalding. Chemical burns may be caused by strong acids or alkalis.

Treatment

(a) If the burn is chemical, let water from a pipe or hose flow freely on the burn so that the chemical flows off.

(b) Protect the burnt area by applying a bandage or cover exposed part with a clean towel or cloth.

(c) Give complete rest and plenty of fluids to the patient.

(d) Re-assure the patient.

(e) Give him/her morphia, if required.

(f) Evacuate patient to the nearest hospital or dispensary.

Snake, Scorpion and Dog Bite

Snake Bite: In snake bite, the poison is injected by the snake through a pair of hollow and deeply grooved biting fangs. The majority of bites occur on parts of limbs which are exposed like hands, feet and lower legs.

Treatment: All cases of snake bite should be treated as being bitten by poisonous snakes. The first aid treatment will be as follows:-

(a) Make the victim lie down comfortably.

(b) Give convincing reassurance against fear of death.

(c) Apply a light constricting tourniquet with hand kerchief, bandage or shoe lace above the knee for a bite on the leg and above elbow for a bite on the arm. So that the poison does not flow to all parts of the body.

(d) Wash with soap and water. Use water freely.

(e) Incise into the skin 2"X ½" across the fang mark with a blade.

(f) Suck the blood either with mouth or with a suction pump. Be careful that there is no cut or ulcer in the mouth.

(g) Evacuate the patient quickly to the nearest dispensary or hospital.

(h) If breathing fails, start artificial respiration.

Scorpion Bite: To be treated like snake bite.

Treatment: If blood has been drawn, the wound should be cleaned well with antiseptic lotion.

Rabid Dog Bite: Rabies is a very dangerous disease transmitted by a rabid dog. The disease is preventable by giving anti-rabies vaccine.

Treatment

(a) Immediately wash the bite area with lots of water and soap.

(b) The wound should be cleaned with available antiseptic.

(c) The patient should be sent to hospital for an anti-rabies injection course.

(d) Dog and the patient should be kept under observation for at least 10 days.

Foreign Bodies in Eye, Ear and Nose

Foreign body in the eye: Particles of coal or dust may lodge on the eye-ball or inside the eye lid causing discomfort and damage to the tender structure.

First Aid Treatment

(a) Direct the patient not to rub the eyes.

(b) Wash the eye with water repeatedly for a minute or two.

(c) Search for the foreign body by lifting the upper eyelid and parting the lower eyelid down. The patient should face the light. If the foreign body is seen, it can be wiped off with the moistened corner of hand kerchief, cloth or cotton swab.

(d) If foreign body is fixed to the eye-ball, patient should be sent to the hospital with a light eye bandage.

Foreign Body in the ear: This is common with children. They often put beads, peas, nuts and other objects into the ear or an insect may get into the ear.

Treatment: Do not try to remove the foreign body with the help of a pin or forceps as this may push the foreign body further in, causing damage to the ear drum. The patient should be sent to the hospital.

Foreign Body in the nose: This is a common occurrence among children. They might put peas, beads etc. in the nostril.

Treatment:

(a) Blowing the nose and sneezing may expel the foreign body.

(b) Make the casualty breathe through the mouth.

(c) Do not try to remove the foreign body.

(d) Send the patient to the nearest hospital.

Asphyxia

The tissue and organs of the body are supplied with oxygen through respiration, essential for the functioning of body. Respiration consists of inspiration, expiration and a pause. During inspiration air is drawn inside causing the lungs to expand. During expiration the lungs contract and air is pushed out. The respiratory system consists of the air passage known as respiratory tract and lungs. The actions of muscles concerned with respiration are controlled and regulated by the respiratory centre of the brain.

Causes: Anything which interferes with respiration producing irregularities in breathing, produces a condition known as Asphyxia. The main causes of Asphyxia are:-

(a) Drowning due to water entering the air passage.

(b) Hanging and strangulation due to obstruction to the entry of air.

(c) Suffocation due to deprived of oxygen.

(i) Due to obstruction to the entry of air through the air passage.

(ii) Foreign body obstruction in the air passage.

(iii) Inhalation of poisonous gases e.g., carbon monoxide.

(d) Over dosage of drugs such as sleeping pills, morphine, pethedine etc.

(e) Electric shock.

(f) Diseases e.g., tetanus, epilepsy, rabies etc.

Signs and Symptoms

(a) Dizziness and weakness.

(b) Shortness of breath.

(c) Rapid pulse rate.

(d) Partial loss of consciousness.

(e) Swelling of the veins of the neck.

(f) Face, lips, nails, fingers and toes turn blue.

General Rules Treatment

(a) Remove the cause if possible or the casualty from the cause.

(b) Ensure free passage for air.

(c) Lay the individual on his/her back. Press the head back-wards supporting the neck on your palm. Lift the tongue clear of the airway. Give mouth to mouth respiration/ breathing.

First Aid for Special Cases

Drowning

(a) Wet clothes should be loosened.

(b) Mouth, throat and nostril should be cleaned of mucus and any foreign body.

(c) Patient should be made to lie down over his/her stomach, face down, head turned to one side, arms stretched beyond the head, tongue pulled out.

(d) Artificial respiration should be given till he/she starts breathing.

(e) Cover the patient with a blanket.

Strangulation or hanging

(a) Cut the constriction.

(b) Clear the air passage.

(c) Start artificial respiration.

(d) Give inhalation if possible.

(e) Make the patient warm and comfortable.

Choking: Bend the casualty's head and shoulders forward, to dislodge the obstructions. In case of small child hold him/her upside down and thump his back hard between the shoulder blades or induce vomiting by passing two fingers to the back of the throat.

Suffocation by poisonous gas: Protect yourself and remove the casualty from the gas as early as possible.

Electric shock

(a) Switch off or break the current, if possible.

(b) Remove the casualty from contact with the current, if possible. Stand on insulating material such as rubber soled shoes or boots or piles of newspaper.

(c) Give artificial respiration.

(d) Treat for shock and burns.

Insensibility or Unconsciousness

Insensibility or unconsciousness is caused due to interruption of the action of the brain, through some interference with the functions of the central nervous system.

Stages of Unconsciousness:

(a)	1st Stage	Delirium: When the restlessness of body and mind are present.
(b)	2nd Stage	Patient responds to loud commands, gives maximum response to minimum stimulus.
(c)	3rd Stage	Semi-coma- Patient responds to painful stimuli only (minimum response to maximum stimulus).
(d)	4th Stage	When the patient makes no response to any stimulus.

Causes

(a) Head injury.

(b) Haemorrhage from brain.

(c) Heart failure.

(d) Diabetic coma, hepatic coma, uremic coma.

(e) Excessive narcotics e.g., sleeping pills, morphine etc.

(f) Intracranial or brain infections like meningitis, encephalitis etc.

(g) Physical agents such as heat strokes, electric shock etc.

(h) Epilepsy.

(i) Hysteria.

Treatment in Casualties of Unconsciousness

(a) Make the patient lie down with head turned to one side. Pull out tongue.

(b) Loosen the clothing, ensure fresh air.

(c) If breathing has stopped or is irregular, start artificial respiration.

(d) Keep the air passage clear.

(e) Nothing should be given by mouth. Remove false teeth, if any.

Artificial Respiration

If there is any irregularity in breathing or a cardiac arrest, artificial respiration is given.

If it is given correctly and in time, the patient's life can be saved.

Types

(a) Holger-Nielson Method: Keep the casualty in prone position.

(i) **Movement 1:** Go down on the left opposite side of the casualty's head, placing the right foot on the ground. Place the casualty's arm carefully above his/her head and keep them there during the turn. Grasp his/her right upper arm and turn his face to one side. The mouth and nose must be unobstructed. The operator should be 6"to 12"from the top of his/her head. Place the hands on casualties back with the heel of the hand on the lower part of the shoulder blade, the thumb on spine and fingers pointing to casualty's feet. Keeping the arms straight rock gently forward until the arms are almost vertical, depending on the build of the casualty using no special force. The movement takes 2 seconds counting one, two. This pressure causes expiration.

(ii) **Movement 2:** The operator now rocks back, counting 3 for one second and slides his/her hand and grips the upper arms near the elbow. He/She raises

and pulls on the arms for 2 seconds counting 4, 5. He/She should take care not to raise the chest from the ground. This movement causes inspiration. Counting 6 the operator lowers the casualty's arm. The movements should be rhythmic in character and continued until breathing recommences. When the casualty begins to show signs of breathing the operator should continue with movement 2 only. For children, the pressure on the shoulder blade should be considerably reduced or applied with fingers. The ratio should be 12 times in a minute.

(b) Schaefer' s Method

(i) **Position of the Casualty:** Lay the casualty in prone position with hand one over other under his head, the head turned to one side, mouth and nose unobstructed.

(ii) **Position of the Operator:** Face the casualty's head; kneel on both knees at the side of casualty just below his hip joint. Sit back on your heels, place your hands on the loins of the casualty, one on each side of back bone with wrists almost touching, and thumbs as far forward as possible without strain, and fingers together.

(iii) **Movement 1:** Without bending your elbows swing slowly forward by unbending the knees until the thighs are in almost upright position, allowing the weight from your body to be communicated to the casualty's loins. This causes abdominal organ compression against the ground and up against the diaphragm. Air is forced out of the lungs, thus expiration takes places.

(iv) **Movement 2:** Swing back slowly on to your heels, thus relaxing the pressure. This causes the abdominal organs to fall back and the diaphragm to come down thus inducing inspiration. These 2 movements must be carried out smoothly and rhythmically and should take 5 seconds (i.e. 12 times per minutes). Artificial respiration must be continued until natural breathing is restored, or unless a doctor decides that further efforts will be of no use.

(c) Mouth to Mouth Respiration:

(i) Casualty should be in supine position.

(ii) Clean the mouth and throat to maintain clear air passage.

(iii) Extend the neck to straighten the air passage.

(iv) Cover the patient's mouth with clean gauze and blow directly and slowly into it. (10 – 12 times per minute).

Treatment and Care of Wounds

In our daily life, we do suffer from various types of wounds. Proper treatment and care of wounds is extremely important for a healthy life, especially in children because, if some wounds are not treated properly, they may cause serious diseases like gangrene or tetanus.

Definition: Wounds can be defined as a brake in continuity of the skin or muscles membrane. It is caused by violence.

Classification: Wounds can be classified as:

(a) **Inside Wound:** It is wound caused by a sharp instrument like knife, razor and so on. Its edges are clean.

(b) **Lacerated Wound:** It is caused by blunt instrument. The edges are torn or uneven.

(c) **Punctured Wound:** It is a deep, narrow wound caused by a pointed instrument like knife, bayonet. The wound is small on the surface but may be very deep causing injuries to internal organs.

(d) **Contusion:** A contusion is an injury or a bruise in which some of the tissues or a part is irregularly torn or ruptured but, the skin may not be broken. It is caused by a blow of a blunt instrument.

Treatment for Wounds

(a) Place the patient in a comfortable position.

(b) Stop the bleeding, if any.

(c) Remove any foreign body, if it is easily visible and can be easily removed.

(d) Prevent the entry of germs by applying sterilized dressing like first field or shell dressing.

(e) Rest to the injured part with a sling.

(f) Immobilize the part, if wound is large or complicated by fracture.

(g) Treat the patient for shock.

(h) Send the patient to the nearest hospital.

Dressing

A wound is to be cleaned with antiseptic lotion and covered with cotton or gauze piece with medication, before applying the bandage.

Aim: The aim of dressing a wound is:

(a) To protect the wound from infection.

(b) To reduce swelling and early healing. (c) To support the effected part.

(d) To enable the individual to carry out his/her day to day routine. (e) To stop the bleeding.

Articles for Dressing of Wounds:

(a) Antiseptic (A/S) lotion.

(b) Cotton / gauze piece.

(c) A pair of Scissors.

(d) Bandages of different size and band aid plaster. (e) A/S ointment or powder.

Procedure: The following procedure is to be adopted while dressing of wounds:-

(a) Reassure the patient and place him/her in comfortable position.

(b) Stop the bleeding, remove foreign body and clean the wound with A/S lotion and cotton.

(c) Apply A/S ointment or powder and cover it with gauze. Select a suitable bandage, start bandaging clock wise from outer aspect to inner aspect by covering 1/3 of previous lining.

(d) Make the knot away from the wound.

(e) Bandaging should not be either too tight or loose.

SUMMARY

Hygiene and sanitation are two sides of the same coin, which must be ensured together for best results. There are simple steps which, if taken regularly and correctly, can be beneficial to both individuals and community as investing of time and effort in them can lead to saving of lives.

***Components of Personal Hygiene**:*

- *Sleep*
- *Bathing*
- *Eating and drinking*
- *Care and cleanliness of skin, hair and teeth*
- *Exercise*

Water Supply and Its Purification:

(a) Main sources of water supply:

- *Rain water*
- *Surface water*
- *Underground streams*

(b) Purification of Water

- *Boiling and filtering water*
- *Clarification*
- *Sterilization*
- *Pinking*
- *Precipitation*

First aid is a very simple and effective method which, a trained NCC cadet, can save precious lives under various life threatening situations. The crucial aspects are promptness and correctness in administering first aid. A NCC cadet who reaches the victim must first quickly investigate the cause and type of injury before attempting to administer first aid.

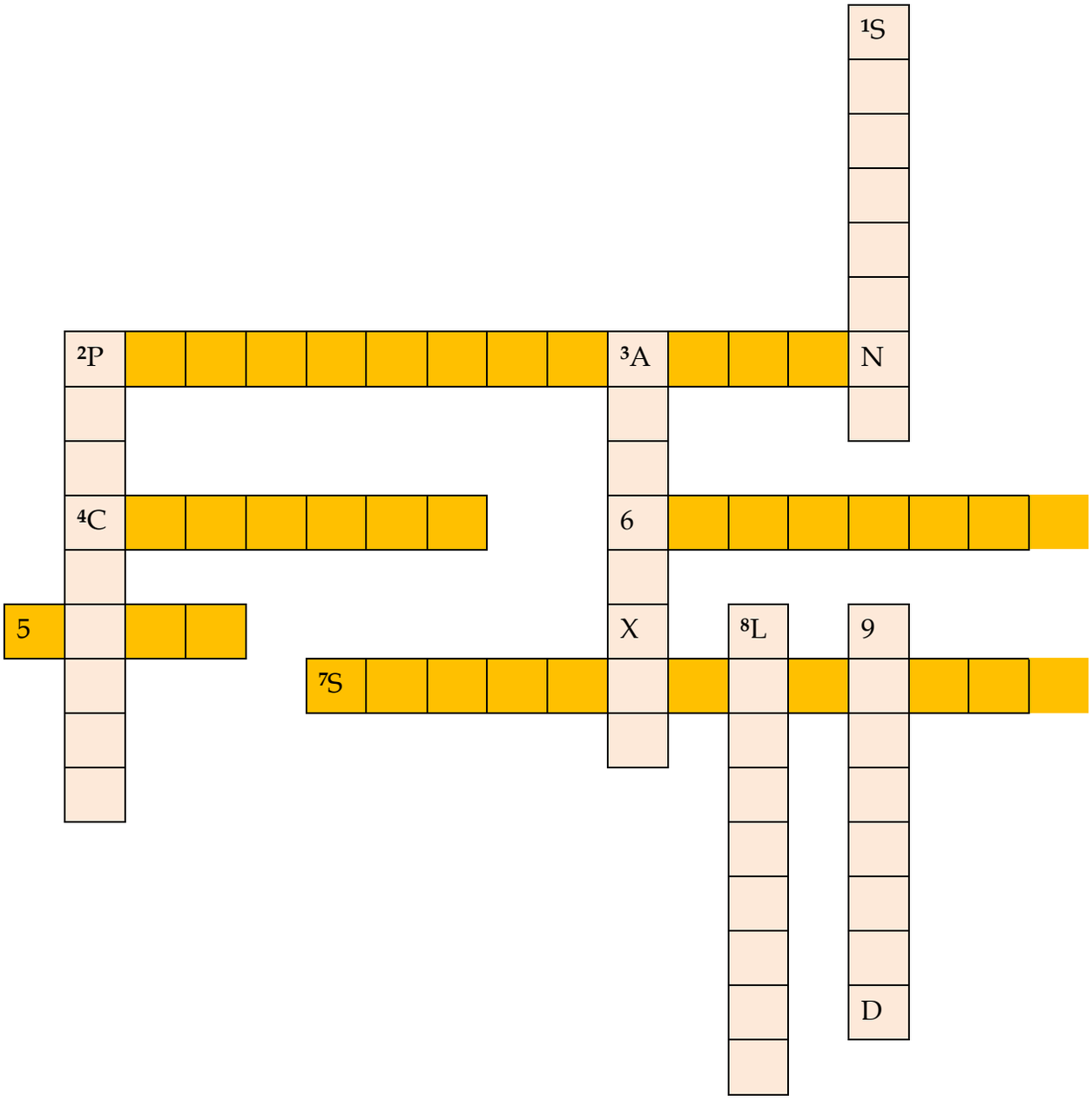
Wounds are a common feature among humans who are outdoor oriented. If cared properly during early stage the wounds heal quickly. Resultantly the wounded person suffers less and is available to the society as a healthy and fit person to resume work. NCC cadets by virtue of their routine are prone to injuries and hence must possess this basic knowledge to help fellow cadets or friends in school or at home.

Classification of Wounds

- *Inside wound*
- *Lacerated wound*
- *Puncture wound*
- *Contusion*

CROSSWORD PUZZLE – 7

Solve the crossword with the given clues:



Across:

2. The heating of milk to such temperature and for such periods of time, as required to destroy any pathogens without destruction of nutritive value.
4. Have severe difficulty in breathing because of a constricted or obstructed throat or a lack of air.

5. An injury caused by exposure to heat or flame
6. Synonym of cleanliness, sanitation, personal hygiene
7. A process that eliminates transmissible agents (such as fungi, bacteria, viruses etc.) present on a surface

Down:

1. Caused by moist heat such as hot water, hot fluids and steam
2. A deep narrow wound caused by a pointed instrument like knife, bayonet.
3. Anything which interferes with respiration producing irregularities in breathing, produces a condition known as
8. Wound caused by a blunt instrument
9. Help given to a sick or injured person until full medical treatment is available

Comprehension Questions

Q.1. Answer the following in about 15 words:

(i) What is personal and food hygiene necessary?

(ii) What is the aim of study of personal and food hygiene?

(iii) What is personal hygiene?

(iv) What do you understand by 'purification' of water?

(v) How does contamination of milk take place?

(vi) What diseases are transmitted through meat?

(vii) What is 'pasteurization'?

(viii) Why is it very important for all cadets to have knowledge of providing basic first aid in common medical emergencies?

(ix) Which internal organs would get ruptured by injuries?

(x) What is 'rabies'?

(xi) When is 'artificial respiration' given?

(xii) Why is proper treatment and care of wounds extremely important?

(xiii) What is a 'wound'?

(xiv) What articles are required for dressing of wounds?

(xv) What is the aim of dressing a wound?

Q.2. Answer the following in about 50 words

(i) Why is the maintenance of personal hygiene important?

(ii) Why is food a potential source of infection?

(iii) What should be done to obtain clean and safe milk?

(iv) What do you understand by fish and egg hygiene?

(v) Write a short note on meat hygiene.

(vi) What are the general rules of first aid in casualties of unconsciousness?

(vii) What first aid can be administered in case of 'electric shock'?

(viii) What first aid should be given in the case of:

a) Strangulation or hanging

b) Choking

(ix) What are the rules for treatment of asphyxia?

(x) What first aid and treatment should be given in case of a foreign body in the:

a) ear

b) nose

(xi) What first aid should be given in the case of a rabid dog bite?

(xii) What are the symptoms in case of internal injuries?

(xiii) List causes of unconsciousness or coma.

Q.3. Answer the following in about 75 words

(i) What should be done to maintain hygiene by food handlers?

Q.4. Answer the following in about 150 words

(i) What do you understand by the process of 'purification of water'? What methods are used?

(ii) What are the sources of water supply?

(iii) How can we maintain the hygiene of eating places?

(iv) What do you understand by 'hygiene of food handlers'?

(v) What first aid treatment would you give to a patient of burns and scalds?

(vi) How should all snake bites be treated? What kind of first aid should be administered to the victim?

(vii) Explain mouth to mouth respiration.

(viii) What do you understand by insensibility or unconsciousness? What are the stages of unconsciousness?

(ix) What first aid treatment can be given in the following cases:

a) Snake bite

b) Foreign body in nose

c) Drowning

(x) What are the causes of:

a) Unconsciousness coma

b) Asphyxia

(xi) What procedures should be adopted while dressing of wounds?

(xii) Write in detail about the classification of wounds.

(xiii) What procedure should be followed for the dressing of wounds?

Q.5. Answer the following in about 250 words

(i) What are the main components of personal hygiene?

(ii) Explain in detail the types of artificial respiration?

Let's Discuss

Q.6. HOTS (Higher Order Thinking Skills)

(i) "*Personal and food hygiene are two sides of the same coin, which must be ensured together for best results*". Explain the statement with the help of suitable examples.

(ii) "*First aid is a very simple and effective method by which trained NCC cadet can save precious lives under various threatening situations*", explain the statement in the light of the crucial role played by the cadet with the help of appropriate examples.

(iii) "*NCC cadets by virtue of their routine are prone to injuries and hence must possess the basic knowledge of first aid*". Explain the statement with appropriate examples from your own real experiences.