ISSN (Online) 2456 -1304

International Journal of Science, Engineering and Management (IJSEM)
Vol 6, Issue 3, March 2021

Food, Nutrition and Health

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***Abstract*— Food nutrition and health all the aspects related to health are important to keep our body and mind healthy. All the substances that are obtained from plants and animals have their own role in keeping the body and mind healthy. suppliments related to the nutrition, proper habits energy requirement varies with age and weight and occupation as recommended dietary announces for Indian as per ICMR .Use of vitamins as important as we need medicines to cure ourselves. Carbohydrates, fats, proteins, minerals all play a significant role, daily requirement of important minerals is very important.**

INTRODUCTION

Food is one of the most important basic need of our body, the source of energy, to do work. There are many source of food ex. plants and animal sources, including both the category are essential to survive all kinds of living organisms.

Today as concern most of the people are not aware about the health due the choice of fast food has come in their life style .Man has been absolutely dependent on plants even in the early stages of civilization. The plants furnishes most of our food, shelter, clothes, medicine, fuel, paper and a host of other useful products; and furthermore the green plants are the greatest means of utilizing energy from the sun.

India has one of the earliest known civilization and plants have been studied in the part of the world from time immemorial .

Remains of the Indus valley civilization show without any doubt that wheat, rice, barley, and cotton were already in cultivation.

Community health is personal health along with the environmental services for the importance of health of community. Some food suppliments play an important role in our diet too. Bad habits could be hazards to our health , body and mind both .Nutrition as defined the procurement of substances necessary for growth development maintenance and activities. The journal have made a significant contribution to the growing children and adults .

Every living organism needs food for its survival, maintenance , growth and development. There are various components of food such as proteins, carbohydrates, fats, minerals and vitamins and each component of food has specific function in the body.

They are also required in specific amounts. Proper dietary habits lead to the sound health and good mental development.

Health and its importance

According to World Health Organisation (WHO) health is defined as a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.

Community Health and Personal Health

Community health can be defined as all the personal health along with the environmental services for the importance of health of community,

Some of these services are given below:

- 1- Establishment of healthcare services like primary health centres, district hospitals, community health Centres, medical Colleges, all India Institutes.
- 2-provision of safe drinking water and proper disposal of garbage.
- 3-Prevention of harmful insect breeding sites.
- 4-management of different types of environmental pollution by Central and

ISSN (Online) 2456 -1304

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state Pollution Control Boards.

- 5-preventive vaccinations against number of diseases like tuberculosis, diphtheria ,whooping cough ,tetanus measles, hepatitis etc.
- 6-provision of family planning advices and services.
- 7-provision of medical care to school going children.
- 8-prevention of food adulteration.
- 9-Health education.

Conditions for Good Health

There are several conditions which have to be fulfilled for good health. The important ones are :

1-Nutrition
2-proper habits
3-Exercises and relaxation.

Nutrition

Nutrition can be defined as the procurement of substances (nutrients) necessary for growth, development, maintenance and activities, of a living organism.

We the human being obtain food from various plants and animals sources, In order to keep healthy and energetic, we need to take food.

It takes care of the daily energy need also.

We consume energy even while sleeping .Energy requirement depends on individual, age and special need. Growing children, pregnant women and nursing mothers need more energy.

Proper Habits

Another important aspect of the good health is to observe proper dietary habits, that is consumption of balanced diet and at fixed time , good personal and domestic hygiene is very essential. Take full care of the following aspects.

- Our food should be fresh and kept away from dust, flies , insect, and microbes to avoid any infection and spoilage.
- Utensils should be kept clean.
- We should wash our face and hands with soap before eating or handling the food.
- Food should be cooked with good feelings (happy mood) and cheerful state.
- Smoking, chewing tobacco, drinking alcohol, taking addictive drugs are bad habits and should be avoided. They can have damaging effects on our body and mind.

Energy Requirement Varies with age, weight and occupation Recommended dietary allowances for Indian as per ICMR

Group	Particulars	Body wt kg	Net energy k cal/d	Protein g/d	Fat g/d	Calcium mg/d	Iron mg/d
Man	Sedentary Work		2425				

	Moderate work	60	2875	60	20	400	28
	Heavy work		3800				

Group	Particulars	Body wt kg	Net energy kal/d	Protein g/d	Fat mg/d	Calcium mg/d	Iron mg/d
women	Sedentary work		1875				
	Moderate work		2225	50	20S	400	30
	Heavy work		2925				
	Pregnant women		+300	+15	30	1000	38
	Lactation						
	0-6 months		+550	+25			

Infants	0-6 months	5.4	108/kg	2.05/kg		500	
	0-12 month	8.6	98/kg	1.65/kg	-	-	-
children	1-3 years	12.2	1240	22			12
	4-6 years	19.0	1690	30	25	400	18
	7-9 years	26.9	1950	41			26

Boys	10-12 years	35.4	2190	54			43
Girls	10-12 years	3.51	1970	57	22	600	19
Boys	13-15 years	47.8	2450	70			41
Girls	13-15 years	46.7	2060	65	22	600	28
Boys	16-18 years	57.1	2640	78			50

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Girls	16-18 years	49.9	2060	63	22	500	30

g/d = gram per day

Exercise and Relaxation

Regular exercise is necessary to keep our body fit.
These exercises vary with age, physical condition and nature of work of the individual.
In case of sedentary work (work mostly in sitting position) exercise is even more essential.
Another aspect of health is regular sleep and relaxation. The duration of sleep also varies with age and nature of work.
Infants sleep for long hours which is necessary.
For them to grow. For children, an average of eight hours of sound sleep is sufficient. For adults six hours of sleep is enough
Relaxation improves the capacity to work .Relaxation may be defined as an activity or recreation which provides a relief or diversion from work or effort. There are various ways of relaxation. Yoga and meditation relax the body and mind. Listening to music and reading magazines are also relaxing.

Components of foods

The components of food are certain organic substances,and certain minerals called nutrients
Nutrients of food are :
1-carbohydrates
2-Proteins
3-Fat
4-Vitamins
5-Minerals

- Roughage (dietary fibre) and water are also essential for the body.

Food groups

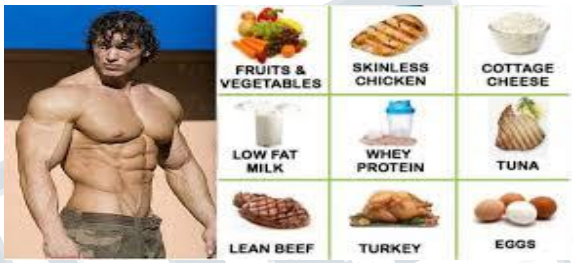
- Different food group on the basis of the nutrients contained in them and their functions in the body. For convenience three broad groups of food are as:

Energy Giving Foods

Energy giving foods: We need energy to move parts of our body, to make substances inside the body and also for certain other functions of the body. Food provide energy.

Body–building foods

Body –building foods: Foods provides energy for growth, Wear and tear also occur in the body all the time. Body needs to build new cells and repair damaged parts. Food provides material for this.



Protective foods

Absence of certain food constituents like vitamins and minerals causes “deficiency diseases”. These constituents are required in food for body functions and so their deficiency should be prevented by eating food rich in these constituents.

Carbohydrates

Carbohydrates are a class of energy yielding substances .Chemically they are made up of Carbon, Hydrogen, Oxygen .Examples of Carbohydrates are starch sugar and glucose etc . Cereals roots and tubers largely give us starch. Glucose the simplest carbohydrate which is an instant source of energy.

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Food group according to function	Major nutrient	Food containing the nutrients
Energy giving	Carbohydrate and fat	Cereals like rice and wheat starches like potato. Fat-ghee and oil sugar
Body building	protein	Milk Meat-mutton, chicken, fish, Egg white Pulses, like Dal gram, soya bean peas.
Protective	Minerals , vitamins	Vegetables specially green leafy vegetables like spinach, cabbage and dietary fibre such as brinjal, beans and fruits.

The Three Food Groups and Their Sources
In our country major sources of carbohydrates are wheat, maize ,rice, Bajra, potato ,sweet potato, tapioca, banana, etc .
Cooked starch gets easily and completely digested into glucose, Glucose upon oxidation yields energy in the cells of the body, complete combustion of 1 gram of carbohydrate in the body yields 4.2cal. of energy.

Activity 1.(A) Test for the presence of carbohydrates
Starch:-Take a small piece of potato or wheat flour. place it in a test tube and add a drop of iodine solution . We will notice that the colour of the solution turns blue-black . This indicates the presence of starch.
Take a small piece of boiled egg white and repeat the experiment .what do we observe?
Absence of blue-black colour shows the absence of starch in egg white.

(B) Sugar
Take small pieces of banana, potato , and unripe tamarind or lemon. Crush them separately and strain their juices. Put 5-10 drops of these juices in different test tubes and add a few drops of Benedict's solution to each and heat . Notice the colour before and after this addition. That which changes to reddish orange colour contains sugar.

(C) Protein
The term protein was given by J . Berzelius (1938).protein are made up of smaller unit called amino acids . Most proteins presents in the body of living organisms are made up of twenty amino-acids. Proteins not only form the building material of our body but also carry out other function.
Table shows different types of proteins needed by our body for performing various functions.
Thus proteins are essentials for our body growth and functions. Their deficiency in food causes retardation of physical and mental growth . Deficiency of proteins causes two diseases in infants:
1-Marasmus
2-kwashiorkor.

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Functions of Some Protein

Types of body proteins	functions
Enzymes	Biocatalysts i.e. help in biochemical reactions occurring in the body all the time.
Transport proteins	Carry different substances in the blood to different tissues
Contractile proteins	Responsible for muscle contraction for movement and locomotion
Hormones	Some hormones are proteins. Hormones regulate body functions
Structural proteins	Form parts of cells and tissues
Protective proteins	Help fight infections, e.g. antibodies

Fats

Fats are made of glycerol and fatty acids. Like carbohydrates, fats contain carbon, hydrogen and oxygen atoms.

Fats are divided into two groups, animal and vegetable fat.

Animal fat is found in milk, cheese , butter ,eggs , meat and oily fish.

Vegetable fat is found in vegetable oil. Vegetable oil is present in nuts such as walnut, groundnut, almonds and coconut . It is also found mustard seed, sesame (til) seeds.

Fats are generally solid at 20 c but if they are liquid at this temperature. They are called "oils".

There are two types of fatty acids-saturated and unsaturated. Unsaturated fatty acids are found in fish oil and vegetable oil. Coconut oil and palm oil are the only saturated vegetable oils.

Most of saturated fat is animal fat It is also solid e.g. Butter. On complete combustion in one gram of fat gives 9.3 k cal .Which is about 2.25 times more than energy provided by same amount of glucose. On an average an adult should get 20-30% of energy from fat .The diet should contain less of saturated fat like butter, ghee, etc. Because saturated fat easily changes into cholesterol which is known to cause arteriosclerosis(thickening of walls of arteries),high blood pressure and heart disorder.

Functions of Fats:-

1-Fat is a concentrated source of energy.

2-Fat stored in tissues beneath the skin insulates the body.

3-Fat forms the protective shock absorbing cushions around a number of organs like eyeball, kidney and ovaries.

Test for Fat in different food items

Take some peanuts and grind them with a stone on a piece of paper. Hold the piece of paper to the right .what do we see ? Does the same thing happen if we grind some wheat grains on the paper or put a drop of water on it ? Repeat this test with oil, butter, coconut, mustard seed and rice grains.

Vitamins

The term vitamin was given by C. Funk in 1911. These are organic compounds needed in small quantities .

Vitamins are found in food and deficiency of vitamins causes diseases.

Based on solubility, vitamins are grouped into two classes:

Water soluble (vitamin-B complex and vitamin-c)

Fat soluble (vitamins A,D,E,K)

Vitamins Type:-

1-Water soluble

2-Fat soluble A , D ,E ,K

B- Complex C

Vitamins cannot be synthesised by the cells of body and must be supplied by food containing specific vitamins. However Vitamin D and K can be synthesised by the body.

The table below shows vitamins their sources as well as the daily requirement for 13-15 years –old boys and girls.

Daily requirement of vitamins for 13-15 years old boys and girls and their sources

Vitamin A	Daily requirement	Sources
Vitamin A (retinol)	600 micro gram	Green leafy vegetables, fish liver oil, liver

Vitamin B1(thiamine)	1.2 mg (boys)1.4 mg (girls)	Milk, seafood, soya bean, whole cereals.
Vitamin B2(riboflavin)	1.6 mg (boys) 1.4mg (girls)	Beans, yeast ,egg, green leafy vegetables,
Vitamin B5(niacin)	16mg (boys) 14mg (girls)	Meat, fish, wholegrain, ground nut.
Folic acid	50-100 mg	Green leafy vegetables sprouted pulses
Vitamin B12 (Cyanocobalamin)	0.2-1.0micro gram	Meat liver milk
Vitamin C (ascorbic acid)	40 mg	Citrus fruits e.g Amla, lemon, orange, guava
Vitamin D (calciferol)	200 IU	Milk fish liver oil egg(on exposure to sun light) ,body also synthesises Vit.D
Vitamin E (tocopherol)	Trace amount	Green leafy vegetables milk, tomato.
Vitamin K	Trace amount	(Vit. K is also synthesised in the body)It is necessary for blood coagulation.

Minerals

Minerals are inorganic substances. At least 29 elements are found in our body. Minerals have no energy value but they do have important functions in the body, which are listed as below:

Daily requirement of important minerals and their functions

Mineral	Daily requirement	Major source	Functions
Sodium(as Sodium chloride)	2-5 g	Common salt , fish meat , eggs, milk	It is the most commonly occurring extra-cellular (in the fluid outside cells) 1.Contraction of muscles 2.Transmission of nerve impulses in nerve fibre 3. Maintenance of positive electrolyte balance in body.
Potassium	1 g	Widely distributed in all foods	It is the most commonly occurring intracellular (inside cytoplasm of cell) cation. It is involved in : 1:Many chemical activities inside cells 2:the contraction of muscles 3:the transmission of nerve impulse 3: Maintenance of electrolyte balance in the body.
calcium	**About 1.2g**	**Milk ,cheese, eggs, green vegetables, whole gram, cereals ,ragi, tapioca , fish**	**In association with vitamin-D ,it is essential for the hardening of bones and teeth. 2.It plays an important part in the coagulation of blood. 3.It is associated with the mechanism of muscle**

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			contraction
Phosphorus	1.2g	Milk , cheese , green leafy vegetables, bajra, oat meal nuts ,liver and kidney	1.It is associated with calcium in hardening of bones and teeth 2.It helps in maintaining constant composition of the body fluid
Iron	**25mg (boys) 35mg(girls)**	**Liver kidney egg yolk apple banana and other green leafy vegetables and Jaggary**	**1.Iron is essential for the formation of haemoglobin in the red blood cells 2.It is necessary for tissue oxidation.**
Iodine	20 micro g	Salt water fish, seafood, green leafy vegetables ,iodised common salt	It is essential for the formation of thyaroxine, the hormone secreted by the thyroid gland Its deficiency causes goitre.

Roughage

Roughage is the indigestible part of the diet , for example cellulose in fruits and vegetables and connective tissue in meat and fish . Sources of roughage are-salad, vegetables and fruits with their skin as the skin has high fibre content. They are good for digestion and aid in bowel movement. Corn cob (bhutta), and porridge (dalia) also provide good roughage material in addition to other nutrients.

Water

Water is an important part of our diet. It makes 65-75% of the body weight. Excess loss of water due to vomiting and diarrhoea leads to dehydration which may be fatal.

Functions:

1. Water regulates the temperature of our body by sweating and evaporation.
2. It provides an important means of excreting body wastes.
3. Most biochemical reactions occurring in the body take place in aqueous medium.
4. It forms a good solvent.

Test of Water in Food

Take an equal amount of potato slices ,okra (bhindi) mint or coriander leaves and wheat grains in separate dishes. Keep these dishes in sunlight for four days and weigh each one of these everyday. Note down their weight and compare them with the initial weight. Wheat grains, which are already dry, do not lose weight like the vegetables.

Questions

1 .What are the nutrients present in the food?

2. Why is it necessary to include more roughage in our diet?

BALANCED DIET

A diet may be defined as the kind of food on which a person or a group lives. A balanced diet may be defined as one which contains all the nutrients in the correct amount. It is related to the state of one's age, health, and occupation. For planning of balanced diet, the food groups can broadly be classified into food exchange system.

In this system foods of specific serving size (quantity) are decided and standardised in terms of energy (kcal), protein, fat, and carbohydrate. The balanced diet formulated by Indian Council of Medical Research (ICMR) is given as below:

Balanced Diet as recommended by ICMR

(The quantities are given in grams)

Food item	**Sedentary**	**Moderate work**	**Heavy work**	**Sedentary work**	**Moderate work**	**Heavy work**	**1-3 Yrs**	**4-6 Yrs**	**10-12 Yrs**	**10-12 Yrs**
Cereals	460	520	670	410	440	575	175	270	420	380

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Pulses	40	50	60	40	45	50	35	35	45	45
Leafy vegetables	40	40	40	100	100	50	40	50	50	50
Other vegetables	60	70	80	40	40	100	20	30	50	50
Roots and tubers	**50**	**60**	**80**	**50**	**50**	**60**	**10**	**20**	**30**	**30**
Milk	150	200	250	100	150	200	300	250	250	250
Oil and Fat	40	45	65	20	25	40	15	25	40	35
Sugar or jaggery	30	35	55	20	20	40	30	40	45	45

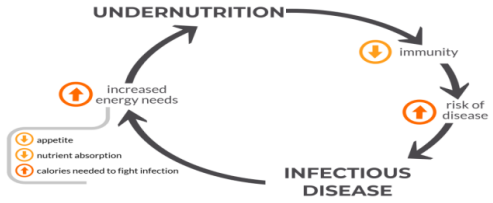
Suggested substitution for non-vegetarian

Food items which can be deleted from non-vegetarian diets	Substitution that can be suggested for deleted items or items
50% of pulses (20-30g)	1.One egg or 30 g of meat or fish 2.Additional 5g of fat or oil
100% pulses (40-60g)	1. Two eggs or 50g of meat or fish. One egg or 30 g meat. 2.10g of fat or oil

Under Nutrition and Malnutrition

The term under nutrition and malnutrition are not synonymous. Malnutrition can be defined as the physical condition of a person resulting either from a faulty or inadequate (i.e. A diet that does not supply normal quantities of all nutrients), or from a physical inabilities to absorb or metabolise nutrients, owing to disease.

There are four forms of malnutrition:



Under Nutrition :

When insufficient amount of food is eaten over an extended period of time, it is termed as under nutrition and in extreme cases when, no food is consumed for days, it is called starvation.

Over Nutrition:

Consumption of excessive quantity of food, over an extended period of time is over nutrition. It leads to obesity, Atheroma,(cholesterol deposition on arterial walls) and diabetes.

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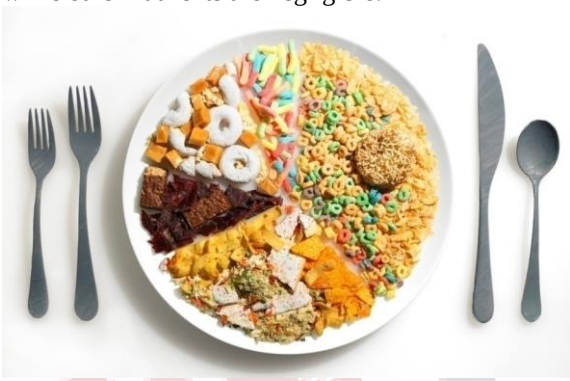
Imbalance Diet

When certain nutrients are in large proportion in the diet while other nutrients are negligible.



Specific deficiency

This form of malnutrition results from a relative or absolute lack of a specific nutrient and leads to specific deficiency symptoms.

Food Adulteration

Adulteration means mixing or substituting undesirable materials in food.

Adulteration results in two disadvantages for the consumer.

(i)Paying more money for a food stuff of lower quality.

(ii) Some adulterants are injurious to health and even result to death, i.e. adulteration of mustard oil with Argemone (pilicately) oil causes epidemic 'dropsy'

Test for Detecting Adulteration in Food

(A) Vanaspati in Ghee or Butter : Melt one teaspoonful of ghee or butter sample in a test tube ,Add an equal amount of concentrated hydrochloric acid and a pinch of common sugar. Shake well for about one minute and allow the tube to stand for five minutes. If we observe a crimson colour appearing in the lower layer, it shows the presence of Vanaspati in ghee or butter.

(B) Water in Milk

Put a drop of milk sample on the surface of vertically held glass plate. What do we observe? A drop of pure milk would either stay on the surface or flow very slowly leaving a white trail behind. If, on the other hand, it is adulterated with water, it would run without leaving any trail. This test is not valid for skimmed milk for which a lactometer should be used. Lactometer is a cylindrical instrument that measures the density of the fluid. This is done by adjusting level at which the lactometer floats. For unadulterated milk lactometer reading should not be less than 1.026.

Argemone oil in Edible Oil

Add concentrated nitric acid to the sample and shake carefully. Observe the colour of the acid layer. A red to reddish brown colour indicates the presence of argemone oil.

Metanil Yellow in Dal

Shake five grams of dal with five ml of water. Add a few drops of hydrochloric acid. A pink colour indicates the presence of metanil yellow.

Food Standard

It is very important to eat quality food stuff. To prevent adulteration of food stuff of good quality, government has set up certain institutions for standardization. These are :

(i) Codex Alimentarius

(ii)Prevention of food Adulteration Act (PFA)

(iii) The Agemark Standards.

(iii)Bureau of Indian Standards (BIS)

Food Material	Adulterant
Cereals such as wheat, rice	Mud , grit, soapstone
Dal	Kesari dal, metanil yellow (a dye)
Haldi(turmeric)powder	Lead chromate
Dhania powder	Powdered cow dung or horse dung , starch
Black pepper	Dried papaya seed
Chilli powder	Saw dust , brick powder
Mustard seed	Argemone seed
Edible oil	Cheaper oils such as mineral and Argemone oils

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Milk	Extraction of fat, addition of starch
Honey	Jaggery , or sugar

Questions
1. What is a balanced diet ?
2. Write the forms of malnutrition.
3. What is adulteration?
4. Write the full form of BIS.

Quality of drinking water or potable water

Rain is the prime source of all water. A part of rain water seep into ground to form ground water, a part of it evaporates back into atmosphere and some runs off to form streams and rivers which flow ultimately into sea. Traditionally wells are an important source of water supply in rural area. Urban areas (cities) such as Delhi , Kolkata, Allahabad, rely on river water for their needs. To meet the demand of water , tubewells have also been used by the water works (Jal Sansthan) .
A.
Waterworks purify water based on various parameters viz., physical, chemical, microbiological, etc. Waterworks adopt following steps of purification of water :
1. Storage
2 . Filteration
3.Disinfection
By mere storage about 90% of the suspended impurities settle down in 24 hours by gravity. This allows penetration of light and reduces the work of filter. It is found that when river water is stored the total bacterial count drops by 90% in the first 5-7 days.

Filtration
Apart from other impurities,98-99% of bacteria are removed by filtration.

Disinfection:
Disinfection in waterworks is usually done by chlorination and Ozonization and ultraviolet irradiation.
Chlorine kills pathogenic bacteria but it has no effect on spores and certain viruses (e.g. polio, viral hepatitis, jaundice).
Ozone eliminates undesirable odour, taste and colour and removes all chlorine from water.
Ozone has a strong virucidal effect . It inactivates viruses very quickly.
Ultra-violet radiations have also been used against many micro-organisms present in water supplies.
Household techniques for Water Purification
If the source of water is doubtful or outbreak of a water borne disease, following methods should be adopted:
(i)Storage
(ii) Filtration
(iii) Disinfection.
Storage
The age-old practice of storing water in
(a) Copper-vessels : Ionic copper will reduce the bacterial flora of water thereby purifying water.
(b) Earthen vessels: Population of bacterial flora will be reduced in the porous clay of vessels .Practice of storing water in earthen vessels with camphor or Ocimum sanctum (Tulsi) leaves reduces the microbial population due to the oxygenated monoterpenes and eugenol content respectively .

Filtration
It is done by adopting following techniques:
(a) Candle Filter: Water can be purified on small scale by filtering through candle filters. Filter candle usually remove bacteria found in drinking water but not viruses. The filter candle are liable to be logged with impurities and bacteria after some time. They should be cleaned by scrubbing with a hard brush under running water and boiled at least once a week.
To make water clean small amount of alum ("phitkari") should be used thereby precipitating the impurities.
Traditional Sand Filtering Technique
Indigenous technology used in villages of our country is to pass the water through different containers (earthen pots) containing sand, gravel, charcoal, etc. respectively ,In urban areas the same technology can be adopted in overhead storage tank of the individual houses as shown in fig .
Compact Integrated Electronic Devices
They are currently used for personal and community drinking water. Such units have porcelain filter and charcoal along with UV radiation.
Disinfection
(a) Boiling : water must be brought to a "rolling boil" for 3 to 5 minutes . It kills all bacteria spores, cyst, ova and render water safe for drinking.

(b)Chemical Disinfection : Bleaching powder ,chlorine solution ,high test hypochlorite are used as chemical disinfectant . Chlorine tablets formulated by National Environmental Engineering Institute,(NEERI)Nagpur are available in plenty in the Indian market at a cheaper rate.
A single tablet 0.5g is sufficient to disinfect 20 litres of water in hour . Iodine may be used for emergency disinfection of water .Two drops of 2% ethanol solution of iodine will be sufficient for one litre of a clear water . It takes 20 to 30 minutes for effective disinfection of water.
Disinfection of well
It is done on mass scale during epidemic of cholera, gastroenteritis, hepatitis, typhoid, etc The most effective and cheapest method of disinfecting well is by bleaching powder.
Double pot method developed by National Environmental Engineering Research Institute (NEERI) Nagpur ensures a supply of constant dose of chlorine to well water for its disinfection.

CONCLUSIONS

Food nutrition and health are the three basic requirements of all living organisms to flourish in the healthy way of life. All types of food categories have been mentioned in this text ie: food obtained from the plants and animals both, health related good and bad habits, as smoking ,chewing of tobacco, drinking alcohol, taking addictive drugs, are bad habits and should be avoided as they can damage our internal organs and can affect our body and mind.
The components of food are certain organic substances and certain minerals termed as nutrients.
Food groups as plants and animals products have different nutrients play a vital role in metabolism. Fruits that play an important role in fighting against the diseases and keep the body healthy. Adultrants in food are not allowed to mix as they have adverse effect in the digestion.

REFERENCES

[1] Kanhiya Lal, Ravi Prakash, S.C Agarkar, ‘Science And Technology- Textbook For Class 7’ Pg: 252-266, March 2003, VOL.1
[2] Kanhiya Lal, Ravi Prakash, S.C Agarkar,’Science And Technology-Textbook For Class 7’ Pg: 269-285,March 2003, VOL.1
[3] B.D Singh, D.P Chakraborty, S.K Mukopadhyay, ‘ Biology Textbook For Class 12’ Vol.14,Pg No.49-67, Feb 2006