

Signs of Good Health

Before proceeding further, is it not necessary to know what is actually meant by the term 'health' ?

'Health' does not mean merely that one is not bed-ridden as a patient. It means that each part of the body is performing its functions well, that in course of one's work during the day, one remains fresh and active and does not get quickly tired, and that one feels enthusiastic and inspired about one's activities. It also means that one is able to enjoy life and be happy.

Signs of good health in different parts of the body

How do we recognise a healthy person ? A healthy person is strong and attractive, has a pleasing outward appearance, and possesses a noble character. The states of body and mind described below are signs of good health. We can judge our own health or that of any other person by referring to these signs.

1. **Face.** The face of a healthy person should not be listless, thin, dry or lifeless. It should be fresh, bright and glowing. It should be impressive and charming. The skin on the face should not be loose or wrinkled ; instead, it should be smooth and taut. The face should be free from moles, or any other similar blemish.

2. **The hair.** The hair should be clean, glistening and well combed. Its colour should be appropriate to the age of a person and the climate of the country in which he or she lives. The hair should not appear dry, dishevelled or untidy. There should be a healthy hair line on the forehead. There should be no bald patches. The hair should not prematurely grey. It should not be greasy and matted or dry and lustreless. It should not pain when touched.

3. **The eyes.** The eyes should be sparkling, beautiful and attractive. The glance should be keen and not half-drowsy, as if the eyes were heavy with sleep. The white of the eye should look clear, and not dull. The eyes should not have any gritty substances or any yellowish tinge in them. There should be no blinking, winking or twitching of the eyes. There should be no boil or styne on the eyes and there should be no discharge from them which is to be wiped out or cleaned frequently.

4. **The mouth.** The mouth should be well shaped. One should not have the habit of keeping the mouth open, nor that of whistling.

5. **The teeth.** The teeth should always be clean and sparkling. They should touch each other while chewing food. There should be no cavities in the teeth.

6. **The hands.** The skin of the hands should be clean, smooth and free from any spots or similar blemishes. Nails should be short, well trimmed and free from dirt.

7. **The feet and toes.** The feet should not be flat, but should have an upward curve like an arch. The toes should not be bending inwards. They should be straight.

8. **Shoes.** Shoes should not be worn very tight or loose. They should fit the feet well, i.e., on wearing shoes, the inner edge of the feet should remain straight and the soles of the shoes should be wide enough to allow the muscles of the feet to stretch without difficulty. The width and height of the heels should be normal. Shoes should not be unnecessarily heavy. Walking shoes and sports shoes should be even lighter.

9. **Upright posture.** While standing, the head should be tilted slightly backwards and held well balanced ; the chin should be tucked inwards ; the shoulders should be held straight

and neither too high nor sloping downwards. The arms should swing freely, the chest held forward, and the back held straight without the lower part jutting out. The stomach should not be pulled in. The weight of the body should rest on the legs.

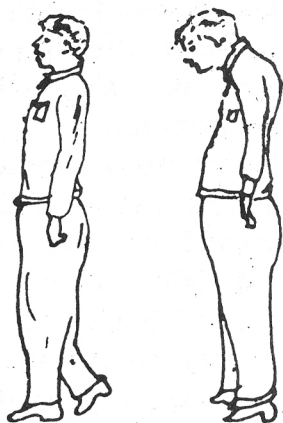


Fig. 1. Correct standing posture. Faulty standing posture.

10. **Sitting posture.** One should sit comfortably. Whether one sits upright or bends forward to write, the head, neck and shoulders should be held in the same position as while standing. While sitting in a chair, the lower spine should rest against the back of the chair, the arms should rest at ease, and the knees should be held

together. The feet should be placed side by side at the same level, or held one over the other.



Fig 2. Correct sitting posture



Faulty sitting posture

11. **Manner of walking.** One should feel comfortable while walking, with feet rising and falling in a measured pace and toes pointing straight in front. One should walk taking firm and steady strides.

12. **Clothing.** Dress should be selected according to the climate and season as well as the means of the wearer and his occupation.

12. **Weight.** The body should be neither too fat nor too thin. Standardised charts are available to show average weight according to the age and height of a person. One's weight should not exceed this average weight by more than 20 per

cent or fall short of it by more than 15 per cent.

14. Mental health. Signs of good mental health should be evident in every situation. One should have the desire to perform good and noble deeds. One should also feel inclined to take part in sports and exercise and be fond of walking. There should not be any signs of worry, grief or sorrow. One should be able to concentrate on one's work and take rapid decisions. One should not only be able to make and keep friends but also be able to mix with people whom one does not like. One should not be frustrated by failure, but continue to strive. One should be able to remain absorbed even when alone or solitary.

Rules and habits for maintaining good health

Before discussing at length the fundamental rules for preservation of health and hygiene, I deem it necessary to enumerate certain habits that are absolutely vital for maintaining good health.

1. Food habits. Diet should be regulated and meals taken at regular times. Diet should also be balanced, all types of *i.e.*, essential ingredients should be present in it in proper

proportion. At least six glasses of water should be taken daily.

2. **Sleep.** One should get at least eight hours of undisturbed sleep everyday.

3. **Exercise.** One should spend at least half an hour outdoors everyday amid pleasant surroundings, breathing fresh air. Gardens, river banks, green jungles and hilly regions are most conducive to good health. While walking around at these places, one should breathe deeply and do beneficial exercises for 8 to 10 minutes.

4. **Cleanliness of teeth.** Teeth should be cleaned at least twice in 24 hours, using some good quality toothpaste. Brushing the teeth with fresh **babul** or neem **datun** is still better.

5. **Bathing.** It is necessary to take a bath at least once in 24 hours, in pure water that is fresh or tepid. Soap should be applied on the body with the help of a bath-brush or damp towel and all dirt removed from the body by rubbing it briskly. After the bath, the body should be rubbed dry with a dry towel.

6. **Mental relaxation.** It is desirable to devote some time everyday to leisure-time activities and social work according to one's inclinations. Engaging oneself with art and craft should also prove beneficial.

7. Avoidance of intoxicating substances.

Harmful intoxicants and narcotics such as liquor and tobacco should be avoided. Drugs and intoxicants should not be taken even as a medicine.

8. Regulated work habits. A definite plan should be formulated for the completion of work undertaken, by forming the habit of beginning and completing it within a prescribed time-limit.

9. Constipation and good health. Only a few essential habits for good health have been mentioned here. Separate volumes may be written on each of them. Yet health primarily depends on two major factors—balanced and nutritious diet, and proper excretion of waste products. If diet is unbalanced but digestible, it is not very harmful. It is certainly not as harmful as nutritious food that remains undigested in the stomach. If waste products are not removed from the body, the toxic substances that are produced enter into the blood-stream and the different organs and muscles of the body are affected by different ailments. That is something very serious. If one suffers from constipation, one's body cannot remain immune to any disease. So one of the most important habits to maintain good health is to evacuate the bowels regularly.

Digestion

If we could properly assimilate the food we eat, we would be saved from most of the diseases. So I thought it advisable to begin with a discussion of the digestive system. Next I shall discuss nutrition and the concept of a balanced diet.

The digestive tract or alimentary canal is a highly developed tube or canal approximately 30 feet or a little over 9 metres long. It takes about 18 to 20 or 22 hours for food to be properly digested within the alimentary system. The organs of the body that play an important role in digestion are : mouth, gullet, stomach, small intestine, large intestine and the glands connected with the alimentary canal.

1. The mouth

As we chew the food, it gets mixed with saliva secreted in the mouth. The jaws and the tongue help to change it into the shape of a small ball which may be easily swallowed. If

a piece of food is chewed properly and broken down into small particles, the digestive juices can act on it more easily and convert it into tiny atoms that may be easily absorbed in the blood stream. Ptyalin found in the saliva converts the starchy and glutinous substances in our food into dextrin or sugar and commences the process of digestion.

Saliva. Three pairs of glands situated in front of the ears, below the jaw and below the tongue respectively help in producing saliva. These salivary glands secrete about two kilograms of saliva everyday. This saliva enters the mouth by a number of fine tubes and acts upon the food that is to be digested.

Saliva softens the food and makes it fit for digestion. The digestible substances are converted into sugar. Carbohydrates like bread, rice, potatoes, bananas, etc. cannot be digested properly without the help of saliva, so they should be chewed well before being swallowed. However, saliva has no chemical effect on substances other than carbohydrates, such as proteins and fats.

There are some substances in saliva that make it sometimes look thicker than water. The aroma from tasty food or even the sight of such food can cause saliva to be secreted. If food is

well masticated, saliva is sure to be secreted. Mastication is also a great help for the secretion of digestive juices in the stomach and intestines.

2. **The gullet**

The gullet or oesophagus (food pipe) is a 25 cm-long tube whose main function is to carry the food from the mouth cavity to the stomach. It takes about five or six seconds for the ball of the chewed food to reach the stomach from the mouth.

3. **The stomach**

The stomach is an enlarged part of the alimentary canal which runs from the gullet to the duodenum. When empty, it looks like a soft, curved tube. When it is full, it assumes a sac-like shape. It is a small organ but it can be stretched to such an extent that about 2 to 3.5 kg of food can be accommodated in it at a time.

The stomach is never quite empty. Even when it gives the feeling of emptiness, it contains some wind, which is emitted in the form of a belch when pressure is applied to the stomach. Wind in the stomach can cause problems. If food contains yeast or if it is boiled, the formation of wind will be prevented.

The gullet enters the larger part of the stomach. The lining of the stomach contains a

very large number of gastric glands which secrete hydrochloric acid and several enzymes. Daily about 2.5 to 4 kg of gastric juices are secreted. One of the enzymes, rennin, curdles milk. Another enzyme, pepsin, acts upon the curdled milk and helps in its digestion. A third enzyme, lipase, splits certain fats including those in cream and egg yolk. The hydrochloric acid combines with proteins to form a new chemical, which is split into smaller units by pepsin.

Contractions of the stomach muscles play an important role in the digestion of food. These contractions begin from the middle stomach and reach the lower stomach every ten seconds. They change the food into a semi-fluid called chyme. It takes the stomach from about three to five hours to convert food into chyme. Fluids pass through the stomach within minutes. Carbohydrates are also digested quite easily. Proteins take a longer time and fats take the most time. Some fats, in fact, slow down the secretion of gastric juices, thereby slowing down the process of the digestion of other foods.

The opening of the stomach into the small intestine is called pyloric entrance. It is a thickened band of circular muscles which controls the emptying of chyme into the small intestine.

Needless to say that the emptying of the stomach depends upon the type of substance that is being digested. Excessive consumption of sweets delays the emptying of the stomach.

4. The small intestine

The small intestine is a much curled-up tube. It is about 2.5 to 5 cm thick and about 7 metres long. The 25 cm-long part of the small intestine that is close to the stomach is known as the **duodenum**. It encircles part of the stomach. The tubes from the pancreas and the liver enter the duodenum. The 2.5 m-long **jejunum** which comes after the duodenum is actually the first part of the small intestine. The latter half of the small intestine is known as the **ileum**.

Much of the abdomen is full of the folds of the small intestine. They glide over each other and are held in place by a mucous membrane which is attached to the opening of the small intestine and which covers the walls of the abdomen.

As the chyme enters the duodenum, more digestive juices are added to it. Also added to the chyme are fluids from the pancreas and bile from the liver. The pancreatic fluid contains a number of enzymes that act upon all kinds of foods. Proteins are broken down into amino acids. Large sugar molecules are changed into

simple sugars and fats are reduced to fatty acids. Insulin is also secreted by the pancreas but it is absorbed directly into the blood. Bile secreted by the liver emulsifies fatty foods and makes them easier to absorb. It also reduces the acidity of the chyme.

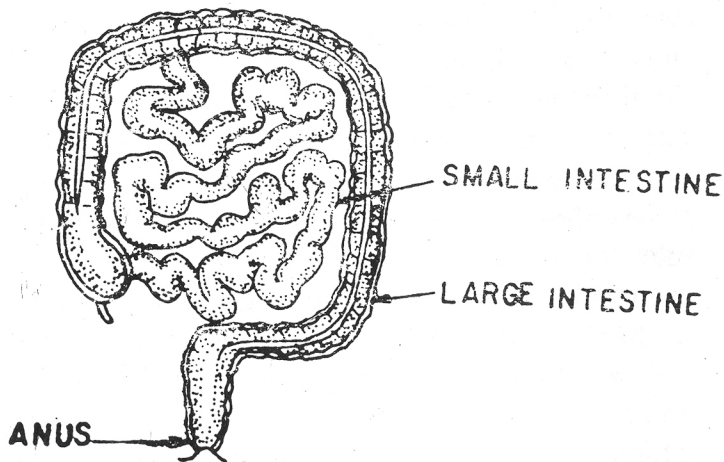


Fig. 3. The intestines.

5. The large intestine

This is approximately 1.5 m long and 8 cm broad. It has three parts : (1) **Cecum** (2) *Colon*, and (3) **Rectum**. The colon is in turn divided into three sections which according to their position in the body are known as **ascending**

colon transverse colon and descending colon

The descending colon empties itself by pouring its waste products into the rectum. The rectum casts out the waste matter as excreta.

The substances that enter the large intestine from the small intestine are as liquid as pea-soup. The upper right-hand portion of the large intestine absorbs most of the liquid portion. The left-hand portion helps in the excretion of solid wastes. At intervals, the excreta passes from this part of the intestine to the rectum and remains there for some time.

No digestive juices are secreted in the large intestine. Here only the undigested matter, acted on by some bacteria, undergoes a process of transformation that helps in its absorption.

The residual matter from digested food is known as excreta. The decay of the excreta produces certain bacteria causing an offensive odour. So it is necessary that waste matter is regularly excreted from the body.

Taste, hunger and thirst

These three urges prompt us to go in search of food.

Taste is derived from a previous experience of some tasty or delicious food. The desire to taste is intensified by the flavour of the food placed before us.

Hunger is more primitive and basic. It may drive us to partake even of such food as in fact we dislike. Hunger may cause such violent contractions in the muscles of the stomach that one may even feel a slight pain below the chest. Such contractions can be slowed down by the movements of chewing and swallowing, or by smoking. They can also be temporarily checked by such emotions as anger, or by vigorous exercise. 'Tie a band around your stomach' is a very practical device to control hunger for some time.

Thirst is caused by the drying up of the mucous membranes of the throat. Hunger may die after some time, but thirst will continue till some fluid has been taken to moisten the membranes.

Digestion and the emotions

There exists a close relation between the secretion of digestive juices and human emotions. It has already been mentioned that saliva is secreted at the sight and smell of tempting food. It is also a scientific fact that the stomach also secretes a similar juice which increases hunger.

If appetite improves at the sight, smell and taste of a certain food, its digestion will take place more rapidly. People who suffer from

depression due to illness or some other cause, should be served attractive food in small quantities. Feeding children forcibly, unnecessarily punishing them at the dining table, or feeding an angry child, are all unhealthy practices. For adults too, it is important that food is appetising and when they sit down at their meal, they are not being troubled by any worry, pain or tension. Pain, fear and anger prevent the secretion of digestive juices, causing a strain on the entire digestive system and may ultimately destroy it.

Rest

When there is excessive worry due to physical or mental labour, one should take some rest before a meal. A little rest after meals is of course a very healthy practice and most desirable. When one bathes in water that is at a temperature different from body temperature, the blood is diverted away from the digestive tract. This retards the process of digestion. So a bath should not be taken until one hour after a meal.

Regulated diet

If food is taken at regular hours everyday, it helps digestion, though it is not necessary for everyone to take meals at the same time. Some experts are of the opinion that one should take even more than three meals a day. Carbohy-

drates provide energy quite fast. So those who have to work rather hard may take some food, rich in carbohydrates, in between the meals. Overeating should be scrupulously avoided. If one eats over and above the required quantity of food, one loses appetite. Persistent overeating can even totally destroy one's digestive system.

Taking water with meals

Water is not harmful when taken with meals. However, one should not repeatedly drink water merely to swallow food. Iced water should be sipped slowly so that the stomach may not catch a chill.

Indigestion

Indigestion is indicated by flatulence and a bitter taste in the mouth. When food is swallowed too rapidly, a large quantity of air is also swallowed, which causes flatulence. Since food remains half chewed, digestion takes longer time.

Overeating, besides leading to the swelling of the organs of digestion, causes discomfort and lack of proper absorption of food. Fried food acquires a smooth coating of fat that slows down digestion. However, all fried foods are not detrimental to health. Food that is deep fried in ghee absorbs very little fat and is not difficult to digest. Taking of pickles and extre-

mely spicy food harms digestion and leads to various types of discomfort.

Heart-burn is one of the minor discomforts of indigestion. The digestive juice that enters the digestive tract increases acidity and causes various discomforts. Besides this, if there is excessive work or worry, or too much smoking, or drinking of tea or coffee, it leads to nervous indigestion. It should be clear that heart-burn has nothing to do with the heart. This type of burning sensation may be eased by drinking soda-water, or any other saline liquid.

During belching, air that has been swallowed with food, or inadvertently, is emitted. If food is taken slowly, air will not be swallowed with it. If belching has become a habit, it may be cured by inserting some small substances between the lips to keep the mouth slightly open.

3

Nutritious Diet

If we want to keep good health, our food should meet three essential requirements: (1) it should be of good quality; (2) it should be taken in sufficient quantity; and (3) it should contain all the necessary ingredients. Any diet meeting all the three requirements is known as a nutritious and balanced diet.

Why do we need food ?

The body requires food for three purposes :

1. The body is performing different functions all the time. The various organs of the body are subject to constant wear and tear. Food makes good the damage and builds new cells.

2. Food provides the energy and heat that is required by the body to fulfil all its functions.

3. Food also contains some elements like vitamins and minerals which help in the process of digestion. Such elements protect us from disease and improve our health. They are therefore known as protective elements.

The basic ingredients of food

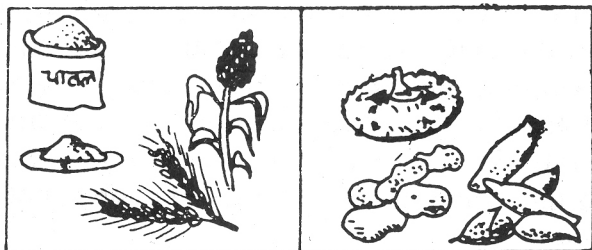
Chemistry teaches us that all foodstuffs are composed of different chemical elements, such as oxygen, hydrogen, carbon, nitrogen, sulphur and phosphorus. Elements like iron and copper are also found in certain foodstuffs. Substances that contain nitrogen are known as proteins. The remaining substances are carbohydrates and fats. So, in brief, foodstuffs contain three essential elements—**proteins, carbohydrates and fats.**

These three elements are essentially present in all foodstuffs. Only their proportion varies. Besides these, food contains three other ingredients : **vitamins, minerals and water.** Now we can modify our concept of balanced diet. We can say that a diet which contains all the six ingredients in correct proportion may be described as a balanced diet.

The human body is like a clock. If some part of the clock is missing, or is out of order, the clock will not work. Similarly, in the body also, if any of these essential ingredients is missing, the body will not function properly. Those who take a balanced diet not only enjoy sound health but are in a position to serve their nation in different ways. It is indeed a misfortune that even in this age of science, we lack complete knowledge about proper diet.

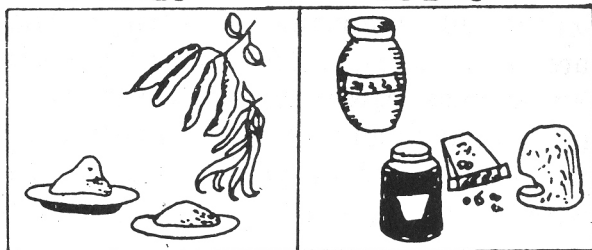
Let us discuss the essential ingredients of food in greater details.

1. **Carbohydrates.** Carbohydrates occupy the most important place in our diet. In a



CEREALS

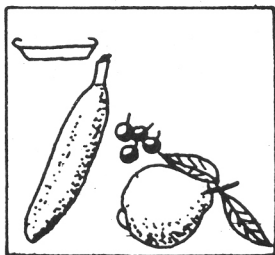
TUBERS



PULSES AND BEANS

HONEY SUGAR AND

SUGAR PRODUCTS



FRUIT

Fig. 4. Main sources of carbohydrates.

balanced diet for human beings, 360 grams of carbohydrates should be present. Our food contains more of carbohydrates than any other element except water. Carbohydrates are composed of only carbon, oxygen and hydrogen. As in water, the proportion of hydrogen and oxygen in carbohydrates is 2:1. Sugar and starch are the best examples of pure carbohydrates. Starch, found in flour, also gets converted by digestive juices into a particular quantity of sugar called glucose. **Gur** honey, arrowroot, sago are all examples of carbohydrates. Potatoes, sweet potatoes, rice, millets, etc. are major foods rich in carbohydrates.

During the process of chewing, carbohydrates mingle with saliva and form a kind of sugar that is easily digested. Vitamin B also helps in the digestion of carbohydrates. But this vitamin is not at all present in sugar or candy made from sugarcane. Sugars from milk (lactose) or fruit (fructose) are more easily digestible since they contain Vitamin B. That is why those who consume sugar or sweetmeats have poor digestion. Honey is very suitable from this point of view, as it is a sort of digested food and can easily be absorbed by the blood as soon as it reaches the stomach.

Sugar and some other carbohydrates are of vegetable origin. Sugar can be of three types

according to the proportion of its chief ingredients—carbon, hydrogen and oxygen : **monosaccharide**, **disaccharide** and **polysaccharide**. Common sugar is a monosaccharide.

From the point of view of nutrition, there are again three types of sugar—glucose, fructose and lactose. **Glucose** is found in grapes and in some vegetables. It is also known as 'dextrose', 'corn-sugar' and 'grape-sugar'. **Fructose** is the sugar found in fruits. **Lactose** or milk-sugar is obtained from milk.

When nutritious foods containing a fine quality of sugar are consumed, on digestion they are converted into monosaccharides and are absorbed in the intestines. Sugar obtained from sugar-cane or beet-root is a disaccharide. **Maltose** is sugar obtained from malt or sprouted seeds. All these kinds of sugar ultimately lead to the formation of glucose.

Starch is also first converted into dextrose, then into maltose and finally into glucose. Starch is mainly of vegetable origin.

After carbohydrates have been converted into glucose, they enter the blood stream and reach the muscles. The digestion and absorption of carbohydrates generates energy in the body. The residual glucose reaches the liver and is stored there as **glycogen**. When the need arises,

this glycogen is reconverted into glucose and sent to the muscles.

Generally 80 to 120 grams of glucose is found in the human blood-stream. There is a possibility of the quantity of sugar increasing in the blood in case of extreme anger or mental tension, because the body needs extra energy in these circumstances.

When combustion takes place in the body on account of combination of carbohydrates and oxygen, carbon and water remain in the body as unabsorbed substances. Carbon is thrown out of the body as carbon dioxide through the nostrils, and water is exuded as urine and perspiration. It is very important that these substances should be got rid of. If they are not exuded, a type of toxic substance forms in the body.

If one partakes of sugar before a meal, there is loss of appetite. If it is consumed after a meal, other substances seem tasteless. Consumption of sweets before meals also adversely affects appetite. A few years ago, people did not consume so much sugar but these days consumption of sugar has increased. This is extremely harmful for health.

2. Water. Two-thirds of the weight of the body (63%) consists of water. In the case of

muscles, three-fourths of the weight is contributed by water.

Pure water should be drunk in sufficient quantity to ensure that the organs of the body function properly. Different substances are circulated in the body in the liquid form. The food we eat is digested with the help of digestive juices and becomes fit to be absorbed in the blood. Then the blood vessels take the nutritious substances to the different cells of the body. Blood and bone marrow are mostly composed of water. Water plays an important role in the excretory system of the body also. The residual nitrogen in the body is got rid of as urine with the help of the kidneys. It is quite understandable that while we take food twice or thrice a day, we drink water many more times. Water is, indeed, very important for health.

Water enters our body in different forms. Most of it enters the body in the form of drinking water, or in the form of milk, tea, coffee, cocoa, cold drinks, etc. Water is also obtained from the solid substances in food. Green vegetables and fresh and ripe fruits contain plenty of water. Some of the fruits have 90 per cent water in them. In the case of water melon, this percentage is as high as 98. Chemical reactions between various food substances and oxygen

taking place within the human body produce about half a kilogram of water everyday. A person of average weight requires about 3 kilograms of water per day.

It is necessary that the water we drink is pure. Impure water may be a source of many serious diseases. It should be noted that pure water and tasty water are not the same thing. Water even when it tastes good may contain harmful substances that cause disease.

3. Proteins. Our muscles and cells are formed mostly of protein. Whether it is the meat of animals or birds, or human flesh, or the fleshy part of trees and shrubs, it is almost protein. Hence proteins may be classified as (a) **animal protein**, and (b) **vegetable protein**. Vegetable proteins are mainly found in peas, pulses, lentils, soya beans, etc. All proteins are formed by the combination of 18 elements such as nitrogen, sulphur, phosphorus, iron, etc. But just as hundreds of different shades may be formed with the help of the three primary colours, red, yellow and green, similarly, hundreds of proteins may be formed by the combination of these 18 elements, all different in colour, appearance, quality and nature, according to the proportion in which each of these elements is present in them. The type of protein found in one plant or creature differs from the type found in another. The

type of protein found in spinach is different from the type found in **chaulai**.

It is the function of the digestive system to break up the 18 elements present in any protein that we consume and put them together again to form human protein. The best protein for our consumption would be the one that contains the correct proportion of the elements capable of forming human protein. Digestion converts protein into small particles, known as amino-acids, which pass through the intestines and schlesmic cillia and are stored as a special type of protein that helps in repairing the damaged cells and making them grow.

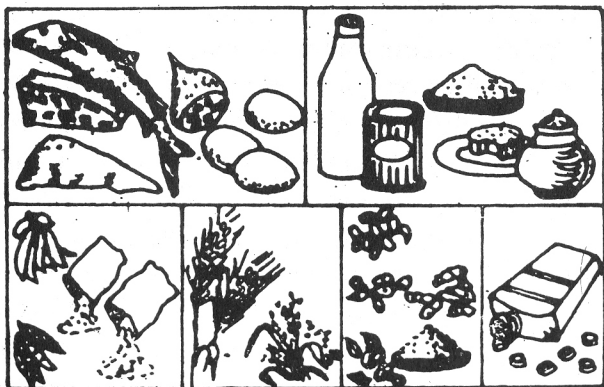
Since carbon and nitrogen are also present in protein, a part of it combines with oxygen to give us heat and energy. That is why we feel stimulated after eating protein.

We should consume such protein substances as contain at least eight specific amino-acids. If all of these eight amino-acids are available to the body in correct proportion, it ensures its proper functioning. On this basis also, proteins may be classified into two types—**complete** and **incomplete** proteins. Those proteins in which the necessary amino-acids are found in correct proportion are known as **complete proteins** Others deficient in one or more amino-acids are known as **incomplete proteins**. Complete proteins are found mainly in milk, eggs and lean meat. Diffe-

rent types of proteins are found in different food products, so one supplements the other. Milk, milk products, curds, etc., are the best type of proteins for human consumption. Among vegetable proteins, spinach and **chaulai** are good. Animal protein is also beneficial for the human body, but it begins to decay in the stomach rather quickly.

**KIDNEYS,
LIVER, EGGS**

**MILK AND MILK
PRODUCTS**



**PULSES
AND BEANS**

CEREALS

**OIL SEEDS
AND DRY
FRUIT**

YEAST

Fig. 5. Protein foods.

We try to choose our food in such a way that we may get sufficient proteins. In some

parts of our country the intake of protein is inadequate. The poor are generally not able to consume much protein as they cannot afford meat, fish, milk and eggs. Almonds, pistachios, cashewnuts or walnuts are totally beyond their means. As a result, they are poor in strength and energy. Higher intake of protein would certainly make their efficiency go up.

It is seen that when a person's diet suffers from protein deficiency, he grows less resistant to deficiency diseases and other diseases also are not cured easily.

If protein is consumed in larger quantities, the carbon and hydrogen present in protein act as fuel to produce energy. The protein in our body is used up more rapidly than other substances. When there is excess of nitrogen in protein, it is excreted in the urine as urea.

Protein contains approximately 16 per cent of nitrogen. Scientists have concluded that a man weighing 154 pounds or 70 kg consumes 44.4 grams protein daily. However, while laying down broad guidelines for a balanced diet for a healthy young man, it is prescribed that his intake of protein should be 1 gram for every kilogram of his weight so that he does not suffer from any protein deficiency.

Growing children, expectant and nursing mothers and some patients need a higher per-

centage of protein in their diet. They should make changes in their food according to their physician's recommendations.

4. Minerals and salts. Our diet should contain sufficient quantities of minerals and salts since they are essential for the healthy growth of the body. Our foods do not contain salts in large quantities. However, since minerals and salts are found together, if we take foods rich in calcium, phosphorus, iron and iodine, we automatically get sufficient quantities of salts. All salts supply us some essential elements. Sodium chloride, popularly known as common salt, for example, is a source of sodium and chlorine. Its chief function is to control the inflow and outflow of water in cells and glands.

In normal conditions, there is a definite ratio between the amount of food consumed and the waste matter excreted from the human body. But when a person perspires excessively, sodium chloride or salt is exuded in larger quantities. In such a situation the consumption of salt should be raised.

Potassium and magnesium have a vital effect on blood and other liquids in the human body. Salts containing sodium and potassium are specially useful in regulating the beating of the heart. Iron is absolutely essential for the for

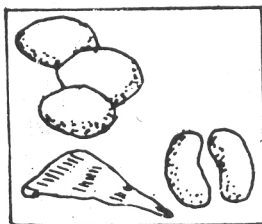
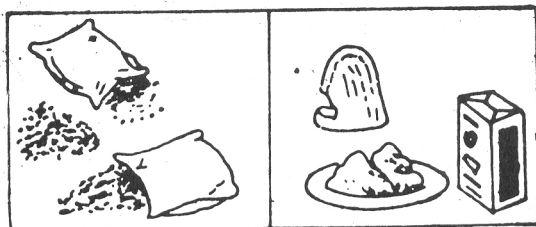
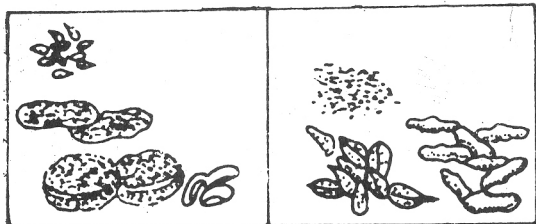
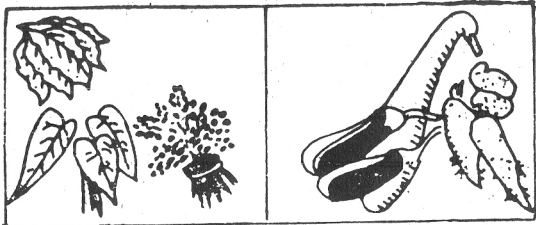


Fig. 6. Foods rich in iron.

mation of blood. The red cells of blood are formed mainly from iron. Deficiency of iron in the blood causes anaemia.

The proportion of minerals and salts in the diet depends upon the individual's health and the structure of the body. Pregnant women and nursing mothers require more of minerals and salts than others.

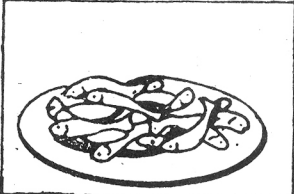
Green vegetables are the major sources of minerals and salts. Milk and cereals also contain some of them. The husk is quite rich in minerals. Salts of phosphorus, magnesium and potassium are found in wheat. It is therefore beneficial to eat wholemeal flour.

All minerals except iron and copper are found in correct proportion in milk. Calcium is the chief ingredient of milk. So it is an essential item of food for growing children. Green and leafy vegetables contain iron and copper. Spinach is rich in calcium. But the oxalic acid present in spinach prevents us from deriving the fullest benefit from calcium.

5. Fats. Fats and carbohydrates provide fuel for generation of heat in the body. The body derives energy and vitality from these substances. The fat requirements of the body are generally obtained from the fatty substances in diet. Upto a certain extent, fat is beneficial



**MILK AND MILK
PRODUCTS**



SMALL FISH



CEREALS

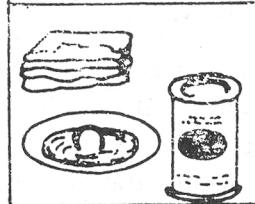


**LEAFY
VEGETABLES**

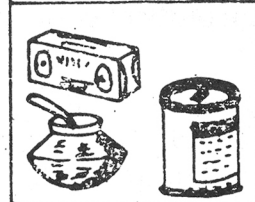
Fig. 7. Foods rich in phosphorus and calcium.



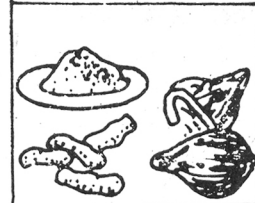
**MILK AND MILK
PRODUCT**



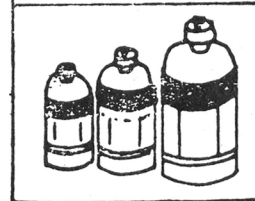
**THE YELLOW OF
THE EGGS BREAD**



**VEGETABLE OILS
GHEE, BUTTER, ETC**



**OIL SEEDS LIKE
COCONUT, GROUND-
NUT, ALMOND**



FISH OIL

Fig. 8. Foods rich in fats.

for the body as it lends it beauty and roundness. It also provides protective layers to the intestines and kidneys against heat and cold as well as against the adverse effects of rain, red chillis, etc. But there should not be too much accumulation of fat in the body, or it would tend to become lethargic, slack, obese and distorted in shape.

Fats too are composed of carbon, hydrogen and oxygen, but the proportion of oxygen in fats is less than that in carbohydrates. As a result, fats can generate $2\frac{1}{2}$ times the amount of heat supplied by the same quantity of carbohydrates.

After digestion, fats produce one unit of glycol to three units of acids of other types. Food substances which provide fats are generally of animal origin - milk, butter, lard, etc. The coconut, sesame, groundnut and soyabean are the vegetable sources of fats. Butter and ghee are the best fats for human consumption since they contain large quantities of vitamins A and D. Coconut oil is more easily digestible as compared to other oils. Next to it is the groundnut oil. Other oils including the mustard oil rank rather low. Oils should be used only if pure ghee is not available.

Fat is an excellent concentrated type of food, as much of it remains stored in the tissues of the

body. When a cow feeds on substances containing proteins and carbohydrates, we get good quality of butter and ghee from its milk. From this, it can be concluded that it is possible to get fats from foods of vegetable origin.

Some fatty acids are essential for health. They cannot be combined with other products providing sustenance. However, they can be derived from common foodstuffs. So it is not necessary to partake of them in large quantities in other forms.

6. Vitamins. Vitamins are found in the body in small quantities. But they play such a vital role in the preservation of health that they are absolutely essential elements of diet. Vitamin deficiency leads to many types of ailments and may even cause death. It is not necessary to worry about the intake of vitamins if our daily diet contains adequate proportion of vitamins. But we must have adequate knowledge of the various types of vitamins and their importance.

Our body needs vitamins in such small quantities that they are measured in milligrams. If we consume vitamins in correct proportion, we can have a healthy and strong body and enjoy excellent health. Our ability to work is also enhanced. Those who enjoy excellent physical and mental health can dedicate themselves better to the service of mankind.

These facts should teach us to pay as much attention to vitamin deficiency diseases as we do to the health of weak and ailing persons. Some of these diseases are easily detected. Symptoms like fatigue and depression may also indicate a deficiency disease. Their presence should not be ignored as something ordinary.

We do not need any special diet for our vitamin needs ; our normal diet has all of them. But cooking or processing food destroys the vitamins. Refined sugar, white flour (maida) and other such factory-produced items of food have very little of vitamins in them. It is advisable to avoid tinned or canned products and substitute them with whole grains and sprouted gram and pulses. Meals produced from the latter are far more nutritious than tinned foodstuffs.

Causes of vitamin deficiency and some suggestions for preserving vitamins

1. Vitamin deficiency may be caused by lack of proper and regular diet.
2. Vitamins may be destroyed in the process of cooking or preparing food.
3. When green vegetables wither and dry up, they lose approximately three-fourths of the vitamin content. So when buying vegetables, we should see that they are fresh and green

and they should be used up as soon possible or kept carefully in a cool place.

4. Vegetables cut into bits are likely to lose their vitamins. Once the vegetables have been cut into pieces, they should be cooked and eaten as quickly as possible.
5. If cooked food is kept for long hours and allowed to go stale, much of its vitamin content is destroyed.
6. If foodstuffs are kept on a hot plate, or otherwise kept warm for long hours, they tend to lose their vitamins.
7. Vegetables should be washed well before peeling or cutting, not afterwards. The latter process destroys vitamins and salts. In fact, as far as possible, green vegetables should be cooked without peeling them.
8. Vegetables and pulses should not be cooked in too much water. Only that much water should be used as required for proper cooking. After boiling or cooking, the water used should not be thrown away, otherwise we shall be losing the vitamins and mineral salts dissolved in it.

If food is cooked in a steam-cooker (pressure-cooker) with very little water, not only will the food be cooked in shorter time

but the vitamins too will not be destroyed. From this point of view, it is better to cook food in a pressure-cooker.

9. If cooked food is re-cooked, some of the vitamins are generally destroyed.
10. Food should not be cooked for a long period at a stretch.

When are additional vitamins required ?

The body requires additional vitamins under the following conditions :

- (a) When one suffers from infectious diseases;
- (b) During pregnancy;
- (c) During lactation; and
- (d) In the growing and formative years of a child,

Classification of vitamins

Vitamin A is fat-soluble. Fish oil is the richest source of this vitamin. It is present in yolk of eggs, butter and other fats of animal and vegetable origin. Almonds too contain it in abundance. It is also found in the yellowish substance in carrots.

Lack of Vitamin A causes such ailments as granulation of the eyes and night-blindness. Granulation may even lead to small wounds on the cornea.

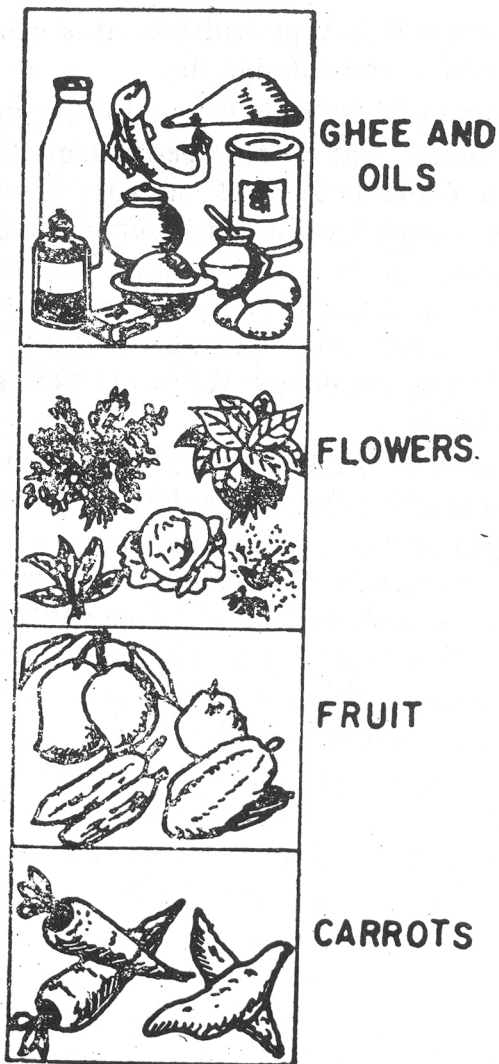


Fig. 9. Chief Sources of Vitamin A.

Vitamin B is water-soluble. It is classified as Vitamin B₁ and Vitamin B₂.

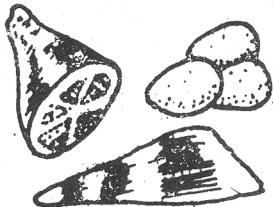
Vitamin B₁ is found in natural substances. It is a vitamin that is easily perishable. Processing and cooking of food destroys it quickly. Besides, though it is found in abundance in solid substances, it is quickly destroyed if it is dissolved in liquids. Nature supplies us this vitamin generously, but we tend to lose it through our preference for sophisticated and refined foods.

Vitamin B₁ is destroyed more quickly in an alkaline medium than in a mildly acidic medium. Some people use sweeteners or baking soda to hasten the process of cooking. It is true that it reduces the cooking time and does not affect the colour of the food, but it considerably reduces the quantity of Vitamin B₁ present in it.

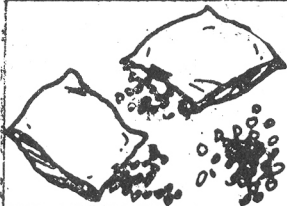
This vitamin is also known as an Antineuritic, as its deficiency leads to polyneuritis. Beri-Beri is the major disease caused by the deficiency of Vitamin B₁. It is prevalent in Bengal, Bihar, Assam, Madras and some other parts of the country where people mainly eat polished rice. It is also found among people who partake of white flour. Beri-Beri is of two kinds—Wet Beri-Beri and Dry Beri-Beri. In the first kind, the tissues and cavities of the body get filled with



**UNPROCESSED
GRAINS**



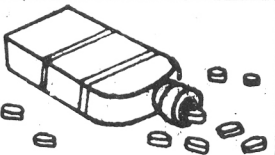
**EGGS, LIVER,
BACON**



**PULSES AND
BEANS**



**OIL SEEDS LIKE
GROUND NUT,
WALNUT ETC.**



YEAST

Fig. 10. Chief Sources of Vitamin B₁.

water leading to the swelling of hands, feet, legs, and may be, of the entire body. In dry Beri-Beri, the patient gradually shrivels up and loses weight. Infantile Beri-Beri found among infants whose mothers suffer from Vitamin B₁ deficiency results in infant mortality at a very high rate. Polyneuritis, also caused by habitual consumption of polished rice, causes pain in the nerves. It disappears as soon as people stop eating polished rice. Symptoms of Vitamin B₁ deficiency diseases are seen among animals also.

Vitamin B₂ is a greenish-yellow water-soluble substance. It is found in animal flesh and vegetables. It is not destroyed by fire or heat, but alcohol has an adverse effect on it. It is easily decomposed by light, so milk should be kept in a covered vessel and protected from light. If milk is left in strong sunlight for 2 hours, 75 per cent of Vitamin B₂ is lost.

The following symptoms indicate Vitamin B₂ deficiency :

1. Irritation of the eyes ;
2. Discomfort in the eyes in strong sunlight ;
3. Eyes get tired quickly ;
4. Loss of brightness or sparkle in the eyes ;
5. Congestion of blood-vessels near the iris ;
6. Pain in the lips, tongue and the edges of the mouth.

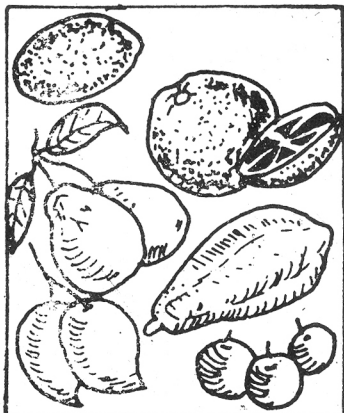
Deficiency of Vitamin B₂ causes the disease **Pellagra**, which has the following three symptoms :

1. Debilitated state of health ;
2. Swelling on the body; and
3. Loose motions.

In Pellagra, the exposed parts of the skin turn dark. Pain in the mouth and stomach disorders are its very typical symptoms. And these symptoms become more acute and marked as the condition of the patient worsens. Pellagra is prevalent in many parts of the world. Those people who eat maize bread because of poverty or ignorance are specially prone to it. Biscuits containing soda and some types of sherbets and soft drinks can also cause pellagra.

Vitamin C is a water-soluble vitamin found in abundance in both fruits and vegetables. 37 per cent of Vitamin C is found in the sour items of our diet, e.g. lime, lemon, orange, tomato, olive, jack-fruit, mango, tamarind. 23 per cent of this vitamin is found in potatoes and sweet potatoes.

Lack of Vitamin C in our diet causes Scurvy. At one time, scurvy attacked sailors who set out on long voyages, or soldiers who took part in prolonged military campaigns, as they could not



FRESH FRUIT



**FRESH VEGETABLES
SPROUTED DALS,
SALAD**

Fig. 11. Chief sources of Vitamin C.

get fresh fruit and vegetables, but ever since people learnt to consume potatoes in large quantities, this disease has become rare.

Children suffering from deficiency of Vitamin C grow weak, peevish and negligent. They can

no longer participate in games and sports and grow indifferent to their studies. These children should be given fresh fruit and green vegetables in their diet, so that their requirements of Vitamin C are fully met.

Serious deficiency of Vitamin C leads to lethargy, weakness and irritation, followed by pains in the joints, swelling and bleeding of the gums, palpitations, shortness of breath, and occasional bleeding from the skin and other parts of the body. The teeth become loose, the gums become tender and spongy and ultimately diseased. These symptoms have also been noticed in children brought up on pasturised milk. So these days, Vitamin C is prescribed with all types of diet. Juice of oranges, lemons and tomatoes is added to children's diet.

Some people require larger quantity of Vitamin C than others, depending on their constitution. Vitamin C is easily destroyed by heat. The Vitamin C content is destroyed if food is cooked for a long time or vegetables are allowed to wither, or stored too long.

Vitamin D is fat-soluble. It is found in the yolk of eggs, and in oily deposits in fish-liver. Substances containing Vitamin A usually contain Vitamin D as well. It is also present in ultra-violet rays.

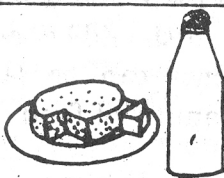
SUN RAYS



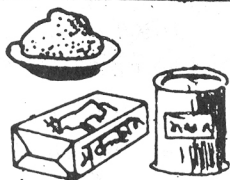
FISH AND
FISH OIL



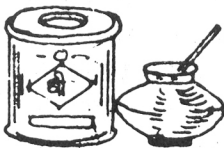
MILK, CHEESE



BUTTER



GHEE



EGGS

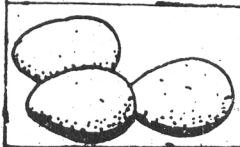


Fig. 12. Chief sources of Vitamin D.

If the body is massaged with oil and then a sun-bath taken, Ergosterol in the skin produces Vitamin D. Deficiency of Vitamin D causes **Rickets**, which leads to the bending of the bones.

How much food should we consume ?

It is extremely important for us to know what proportion of different substances should be present in food, and what quantity of each type of foodstuff should be consumed. But only broad guidelines can be laid down on this aspect, as the quantity of food to be consumed by each individual depends upon his age, constitution, occupation, country of residence and season.

The bodies of infants, children and adolescents are in the growing stage, so they require more protein. Adults and older persons do not require so much protein. Athletes and manual workers, i.e., people who exert themselves physically need greater amount of carbohydrates than persons following sedentary occupations, as their bodies use up more energy. People dwelling in colder climates need more fat in their diet. In our own country also, we consume nuts, walnuts, sweetmeats made of carrots and other fatty substances in winter, but not so much in summer.



Fig. 13. Foodstuffs that should form a part of our daily diet.

Modern scientists have therefore prepared separate diet-charts for different categories of persons. Though the scientists are hardly in agreement on these issues, some useful charts are

set out below :

**Correct proportion of foodstuffs needed
by a normal person**

| Foodstuffs | Correct amount in grams |
|-----------------------|------------------------------------|
| 1. Cereals | 392 |
| 2. Pulses | 84 |
| 3. Leafy vegetables | 112 |
| 4. Roots and tubers | 84 |
| 5. Green vegetables | 84 |
| 6. Fruit | 84 |
| 7. Sugar and molasses | 56 |
| 8. Oil and ghee | 56 |
| 9. Butter and milk | 284 |
| 10. Meat and fish | 84 |
| 11. Egg | 28 |
| | <hr/> |
| | 1348 |
| | <hr/> |

According to Dr. Triloki Nath Verma, a healthy adult doing mental work requires the following items in his daily diet : wheat flour—180 grams; gram flour—120 grams; pulses—60 grams; milk—750 grams; ghee—100 grams; sugar—60 grams; vegetables and salads—as required.

The chart given above lays down the requirements of balanced diet for a person leading a normal, healthy life. However two things should be kept in mind with regard to this chart :

1. The quantity of milk recommended in the chart is the minimum that should be consumed.
2. For vegetarians, 25-30 grams of peanuts, cashewnuts, walnuts, etc. are recommended as a substitute for meat, fish, eggs, etc.

This diet gives 3000 calories of energy.

Balanced diet for factory workers

| Foodstuffs | Vegetarian diet | Non-Vegetarian diet |
|---------------------------------------|------------------------|----------------------------|
| | (In gms) | (In gms) |
| Cereals | 450 | 450 |
| Pulses | 110 | 110 |
| Leafy vegetables | 80 | 80 |
| Root vegetables & tubers | 110 | 110 |
| Green vegetables | 80 | 80 |
| Sugar and molasses | 60 | 60 |
| Milk | 300 | 300 |
| Meat, fish and eggs | — | 80 |
| Peanuts, cashewnuts, almonds, etc. | 30 | — |
| | 1220 | 1270 |

If pure milk or toned milk is not available, milk-powder may be substituted.

It is not possible for factory workers to obtain all the calories they require from only two meals a day. So it is necessary that factories provide canteens where light meals are available.

Balanced diet for pregnant women

| Foodstuffs | Vegetarian diet | Non-Vegetarian diet |
|-----------------------------|------------------------|----------------------------|
| | (In gms) | In gms) |
| Cereals | 340 | 340 |
| Pulses | 80 | 80 |
| Leafy vegetables | 80 | 80 |
| Root vegetables & tubers | 60 | 60 |
| Green vegetables | 80 | 80 |
| Sugar and molasses | 40 | 40 |
| Oil, ghee, butter, fats | 40 | 40 |
| Milk | 450 | 350 |
| Meat, fish | — | 80 |
| Eggs | — | 30 |
| | <hr/> | <hr/> |
| | 1170 | 1180 |
| | <hr/> | <hr/> |

A pregnant woman should eat as much as an adult woman, but she requires greater quantities of animal protein, vitamins, and minerals and salts in her diet, as the health of the unborn child depends upon the diet and health of the mother. Milk is the most essential part of her diet as it provides protein, Vitamin A, calcium and phosphorus. Calcium should be taken in sufficient quantity during the last months of pregnancy as it facilitates the formation of bones and teeth.

The nursing mother should consume double the quantity of milk as the pregnant mother.

An example of unbalanced diet

| Foodstuffs | Quantities of daily consumption |
|--------------------|----------------------------------------|
| | (In gms.) |
| Cereals | 560 |
| Pulses | 60 |
| Leafy vegetables | 15 |
| Root vegetables | 25 |
| Green vegetables | 25 |
| Fruits | — |
| Sugar and molasses | 40 |
| Vanaspati oil | 15 |

| | |
|-----------------------|-------|
| Milk | 60 |
| Eggs, meat, fish | 20 |
| (for non-vegetarians) | <hr/> |
| | 820 |
| | <hr/> |

1. The above diet is deficient in animal proteins.
2. There is insufficient quantity of animal fats, especially of milk and butter.
3. There is serious deficiency of green and leafy vegetables and fruits, which give the body important minerals and salts.
4. It is deficient in vitamins.

An unbalanced diet usually contains large quantities of cereals but is deficient in other necessary substances like fruit, milk, ghee, green and leafy vegetables. Habitual consumption of this type of diet not only retards physical development but is also harmful for mental and social development.

Adverse effects of taking unbalanced diet

It has been mentioned earlier that if excessive quantities of energy-giving foods are consumed, they accumulate as fat in different parts of the body.

The correct weight for any person depends upon his physical structure. It is that amount of weight with which the body can perform all its functions easily. Both excessive fat and excessive thinness are the consequence of unbalanced diet. The accompanying sketches represent



Fig. 14. Excessive obesity and leanness.

two persons one of whom is immoderately obese and short and the other one lean and tall like a stick. Both of them do not look attractive. To avoid both the conditions, it is essential that our diet is controlled, i.e. all substances essential for good health are present in it in correct proportion.

Methods of cooking

It is important that the method adopted for cooking food is correct, otherwise many essential vitamins will be destroyed in the process of cooking. Given below are the incorrect methods along with the corresponding correct ones :

Incorrect

1. Putting vegetables in cold water or in too much water.

Correct

1. Putting vegetables in hot water. Small quantities of vegetables should be put into the water at a time so that the water does not spill out. Vegetables should be cooked using the minimum quantity of water.

2. Throwing away some of the water after vegetables are cooked. (Some of the water-soluble vitamins will be lost).

3. Cooking vegetables long before meal-times or continuing to cook them too long over the fire (upto half an hour).

2. If water is found to be in excess in any item of food being cooked, it should not be thrown away. It should be consumed in some other dish.

3. It is desirable that cooking time does not exceed fifteen minutes. Cooked vegetables should be served as quickly as possible.

4

Constipation

It has been discussed earlier that food habits are as important to health as fresh air, pure water, exercise, and mental peace and happiness. Food performs the same function in the body as coal in an engine. But it should not be concluded that the machine of the body will keep functioning properly if any type of food is eaten at any time indiscriminately. If we continue to shovel coal into an engine, without giving time for the ash and cinders to be removed, the engine will cease to function properly and will eventually stop. A horse cannot pull an overloaded cart. In the same way, our digestive system cannot cope with excessive intake of food. Excessive food cannot be properly assimilated. Most of it is hurriedly excreted in an undigested form without the body having derived any benefit from it. If the excretory organs fail to excrete these unwanted substances, the food decomposes inside the body and causes disease.

When excretion either stops totally, or waste

products are not excreted regularly, it results in constipation.

Constipation is at the root of all illness. How ?

Food travels from the mouth to the stomach. If digestive juices are not secreted, the food is not absorbed by the blood and the body grows weak. All our activities such as eating, drinking, running, playing, bathing and washing consume energy. If the loss of energy is not made good, it leads to illness.

Undigested food brings about a feeling of heaviness in the stomach. It causes lethargy and drowsiness. If this food is allowed to decay in the body, it generates heat and produces bacteria. The blood gets toxic. Boils and pimples erupt on the body. Sometimes they turn septic and, lead to infectious diseases. In fact, in a way, all diseases of the body are closely linked with digestion.

It is not enough that the food we eat is of good quality, tasty, or expensive. On the contrary, what we need is light and well-cooked food taken at regular intervals. Regularity is of special importance. Our meal-times should be fixed. If we drink milk in the mornings, that is the time we should drink milk every day. Eating sometimes in the mornings and sometimes in the

afternoons without observing any fixed schedule is likely to play havoc with our digestive system.

How much food should we consume at a time? It is a factor that only we can decide for ourselves. We should regulate the intake of food in such a way that we do not feel any weight or heaviness after meals. Instead of feeling lethargic or sleepy and inclined to rest, we should be feeling light and active both physically and mentally.

Health and excretion

A normal man or woman should have two bowel motions in a day. We find that many people get into the habit of having only one bowel motion. However, it is necessary for a person who takes two full meals a day and also some tiffin or snacks in between to have two bowel motions in a day.

Appearance of stools

In a healthy person, the stools should be neither too liquid, nor too hard; and they should take two to three minutes to be excreted. There should not be any straining during evacuation, nor any difficulty felt during the cleaning and washing of the rectum.

In case of constipation, the stools become hard. Evacuation involves a lot of straining.

Even after the motion, a feeling lingers in the mind that the bowels have not been fully cleared. The feeling is quite real since the waste products have not been fully excreted. There is an urge to visit the toilet a second time.

Constipation indicates sluggish liver and faulty digestive system. If the urge to evacuate is not felt on time and the downward motion of the stools to the rectum is not smooth, it is symptomatic of acute constipation. In this condition, the patient suffers undue strain and has to resort to laxatives and enemas. To avoid such trouble, we should pay special attention to diet and digestion and visit the toilet regularly at least twice in 24 hours—just after getting out of bed in the mornings, and in the evenings, before dinner. This is the ideal habit.

Stools as an indication of poor digestion

Stools should not be too thick like a thick rope or a carrot or a raddish. They should also not be too thin like a thin tape, the wick of a lamp or macaroni. They should not look like hard marbles, as the excreta of sheep and goats look. The colour of the stools should not be black, white, muddy or pale yellow. Stools should not give off any offensive odour.

Common causes of constipation

1. Not forming the habit of evacuating the bowels daily at a fixed time when the waste matter is pushed to the rectum by the large intestine and there is an urge to evacuate.
2. Lack of Vitamin B or Thiamine and undigested fibre in food.
3. Lack of adequate exercise (Exercise generates useful peristaltic movements in the digestive canal).
4. Rubbing of the intestinal walls due to slackness of the muscles of the stomach and reduction in pressure from the upper part of the body. Excessive consumption of wheat chaff leads to wrinkling of the muscles, causing constipation.

This condition can be remedied by drinking plenty of water, correct diet, and exercise.

It is commonly believed that drinking a glass of cold or hot water (according to the season) before going to the toilet early in the morning is good for bowel-movements. I am of the opinion that there should in fact be no need of drinking water or having a smoke early in the morning to facilitate bowel movement. Our food and food habits should be so regulated

that we feel the necessity of going to the toilet immediately on getting up or within the next fifteen to twenty minutes. In many cases it is seen that there is no bowel movement even half an hour or one hour after leaving the bed. Some people visit the toilet after getting back from their morning walk, some feel the urge in the afternoon, and some others in the evening. All such persons should be considered to be suffering from constipation.

To avoid constipation, one should exercise daily, as exercise helps the secretion of digestive juices by the glands and thus helps digestion.

Constipation and indigestion

Faulty food habits lead to constipation and indigestion. One should follow the following instructions to avoid these disorders and to lead a healthy life :

1. One should have a proper sense of timing. Meals should be taken at fixed times. Taking meals is more important than any other activity, howsoever urgent.

2. Foodstuffs should not be rotten or decomposed. Bread or rice should be taken with dal or some vegetable and should be well chewed. Various types of fruits can also be eaten. Nothing should be consumed in excess of what is

required to satisfy the hunger. Even snacks should not be taken unless one feels hungry.

3. One should not return to work straight after the mid-day meal. Rest should be taken for about half an hour by lying down on back as far as practicable. The evening meal should be followed by a light stroll.

4. Baths should be taken regularly. Clothes should be washed regularly and tight-fitting clothes should not be worn.

5. There should be no disturbance during sleep.

6. The urge to excrete or urinate should not be controlled. It is nature's call and undue delay in answering it may alone be the cause of many diseases.

Types of constipation

Constipation may be of two types : (1) Atonic constipation ; (2) Spastic constipation.

1. **Atonic constipation** is caused by the weakness of the intestinal muscles and a reduction in the normal peristaltic movement of bowels, which retard the downward movement of stools. Waste products, instead of leaving the body within 20 to 22 hours, as is the physiological rule, remain unduly long in the intestines.

2. **Spastic constipation.** There is contraction in the intestines or rectum so that stools do not descend and pass out. Such blocking of the

large intestine or rectum with waste matter is extremely injurious to health.

In these two types of constipation, the food taken remains in the stomach and intestines for an unduly long time and that portion which is converted into excreta does not leave the body in time. There is the urge to defecate but the bowels do not get emptied completely and one does not feel light. Faeces get fully evacuated only after frequent visits to the toilet.

There is a great difference between these two types of constipation and they require different treatment. Atonic constipation is the more com-

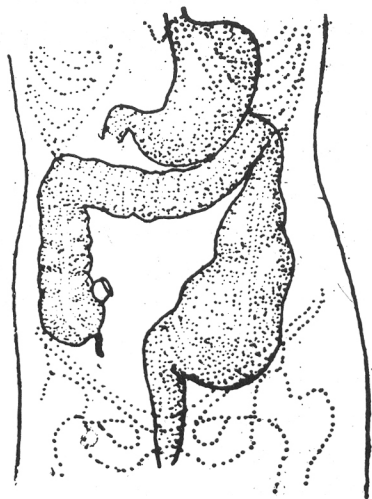


Fig. 15 Atonic constipation : the large intestine is swollen because of the accumulation of waste matter.

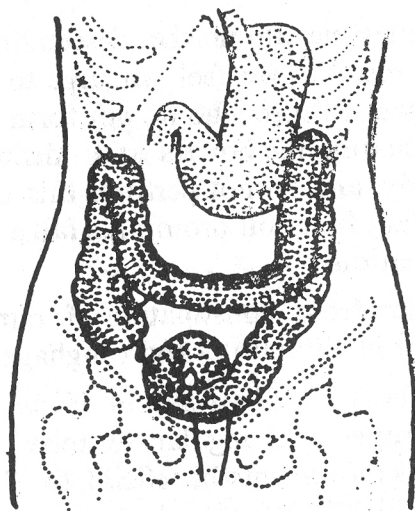


Fig. 16 Slackening of abdominal muscles may push down the stomach and the intestines from their original position, thus causing constipation.

mon of the two. Spastic constipation is found only among some particular types of patients. It is found, in particular, among patients suffering from appendicitis, stomach ailments, piles and fistula, and fissures.

The following discomforts may be caused by constipation : (1) headache ; (2) lethargy ; (3) inactivity ; (4) anger and irritation over trivial issues ; and (5) mental fatigue. These discomforts originating from constipation are to a certain extent due to pressure on the anal canal.

Other causes of constipation

1. When the waste products descend from the

large intestine, along the descending colon, to the rectum, we feel an urge to evacuate the bowels. Those who do not form the habit of evacuating the bowels at a definite time regularly, and do not perform this extremely important function promptly, fall a victim to constipation.

2. We suffer from constipation if our diet is deficient in **Vitamin B** and roughage.
3. We suffer from constipation if we do not take proper and regular exercise. Exercise provides movements beneficial to the intestines, which contract and expand and allow the excreta to descend smoothly.
4. Another cause of constipation is the condition known as Ptosis or sagging of the muscles of the stomach, so that the intestines hang downwards, decreasing the pressure on the bowels.
5. People who work in factories manufacturing products made out of lead and zinc, and those who touch and work with these substances as in printing presses, may suffer from stomach-ache and constipation.
6. If bran is consumed in excess, it causes irritation and contraction of the intestinal muscles and results in spastic constipation.

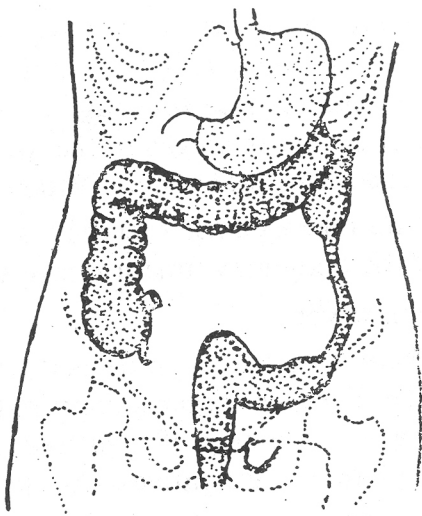


Fig. 17. Spastic constipation : intestinal muscles shrink to cause constipation.

Spastic constipation is caused by some trouble in the alimentary canal, whether in the stomach, intestines or rectum, or if there is some injury or swelling of the adjoining areas. This requires expert attention, as the treatment is more difficult than in the case of common constipation.

How to prevent constipation

Constipation can be prevented if we observe the following rules :

1. We should drink plenty of water.
2. Our diet should be balanced and we should consume all items of food which prevent

constipation and are conducive to good health. In particular, we should take (a) foodstuffs that provide roughage ; (b) foodstuffs that do not form gas in the intestines ; and (c) foodstuffs that contain Vitamin B.

3. We should take exercise everyday so that all parts of the body may function properly.

Use of purgatives

When there is no actual intestinal trouble or disease of the digestive organs, constipation can be overcome with the help of regulated diet and regular food habits. Purgatives should not be taken as a cure for constipation. They do not remove the cause of constipation, and though there is bowel movement as a result of taking purgatives, constipation occurs again. So we should not form the habit of taking purgatives. Frequent or habitual consumption of purgatives affects general health and leads to other ailments.

Mineral oils like liquid paraffin facilitate bowel movements. The oily nature of liquid paraffin prevents the membrane of the intestine from absorbing much water and it becomes easy to evacuate excreta. But if mineral oils are taken over a long period, they prevent the absorption of fat soluble vitamins by the body.

Salts which prevent constipation, such as Kruschen salt, Eno's fruit salt, Magnesium sulph, and medicines like Castor oil, Kaskara, Kuchla, Mussabar and Trifala (whose ingredients are Amloki, Hartaki and Bahera) etc., cause swelling of the intestinal membrane and obstruct the functioning of the large intestine. If purgatives are habitually taken, after some time mucus starts coming out either with the stools, or before or after the bowel movements, because of the inflammation of the large intestine. This condition is known as Mucus Colitis.

Glycerine suppositories help to empty the rectum the and canal and to develop the habit of having bowel motions at the proper time. They are made out of soap and glycerine and may be applied quite easily. A suppository should be pushed as high up as possible in the anal canal so that it stimulates the rectum into activity and the stools that have accumulated there are evacuated.

Necessity of enemas and their ill effects

An enema is administered in cases of severe constipation. A solution is prepared with warm water and bathing soap. About 250 grams of soap are added to 1 kg. of water and introduced into the rectum through the anal canal. Accum-

ulated stools are evacuated and the canal itself is washed out. To make the enema more effective, a little glycerine may be used instead of soap.

An enema may wash out the rectum on one particular occasion, but it is not a treatment for constipation, and people continue to suffer from this condition even after an enema is administered. People become habitual to the use of enemas and laxatives and do not and cannot obtain natural movement of bowels, which is so essential for our health and normal life.

Frequent use of enema has the following ill effects :

1. It widens the anal canal.
2. It results in decrease of sensitivity to bowel movements. So one suffering from constipation cannot experience the urge to defecate at the proper time and as a result, stools accumulate in the anal canal.
3. The mucous that is found in the mucous membrane of the descending colon and anal canal will be washed out or destroyed by the enema. This goes against our natural constitution, and is, hence, harmful.

Correct method of personal hygiene

Visiting the toilet regularly has a beneficial

effect on health. According to the laws of nature, a person should have proper bowel motions at least twice or thrice a day. Resorting to bowel activity only once a day does not evacuate the bowels thoroughly and there is possibility of a number of ailments. The condition in which the descending colon and rectum are not totally emptied during bowel movements should not be allowed to arise. Experts have offered the following valuable suggestions in this regard.

Hygiene of the bowels

About 1½ litres of water should be carried into the toilet. Proper cleanliness cannot be achieved with insufficient water. According to yogic tenets, after one has visited the toilet and moved his bowels, and washed externally, the middle finger of the left hand is to be introduced into the rectum so that the canal is thoroughly cleaned. This practice is to be continued until the finger is quite clean when withdrawn, and has no waste matter adhering to it.

This type of personal hygiene is essential to maintain good health. Generally when visiting the toilet, washing is done hurriedly with insufficient water and the rectum, anal canal etc. are not cleaned properly. In some cases paper or earth is used instead of water, so that the parts are not cleaned thoroughly, and small particles

or fragments of the stools keep adhering to the rectum or anus, resulting in unhygienic conditions. This can cause several diseases. A person enjoying normal health should clean the anal canal with the finger, to remain free from disease, while those in ill-health, especially those suffering from piles, fistula-in-ano, spasmodic constriction of these parts, etc. should definitely make a habit of cleaning them in this way so that the stools blocked, prevented or retained in the rectum or anal canal may be completely evacuated—completely.

Advice to patients suffering from piles, fistula-in-ano, and habitual constipation

The method mentioned above is for the benefit of men and women enjoying good health. I am now stating the laws of hygiene for patients suffering from piles, fistula or chronic or habitual constipation. Such patients should take special care about cleaning the parts after the movement of bowels. In case of diseases such as mentioned just now and fissures, disorders of the stomach and intestines, appendicitis, enlargement of prostate gland, torpid liver and colitis, etc., where the anal canal and rectum tend to contract and the waste products are not fully eliminated, the following instructions should be strictly observed :

1. Cleaning should be carried out using plenty of water so that there is a thorough washing of the parts.
2. Cleaning should not be done in a hurry. The cleaning process should not be stopped as long as even a small particle of stool comes out adhering or sticking with the finger. The finger should be washed thoroughly and used again for the cleaning purpose.
3. The finger should be introduced as high as possible into the rectum. After every bowel movement, during the cleaning process, the finger should be moved from left to right, and then from right to left, with a circular motion, inside the canal, thrice. The patient should be thus sure that there has been proper cleaning and no particle of stools comes out adhering to the finger.
4. Patients whose anus either contracts or pains when touched, or there is inflammation of the piles will find it difficult to follow the cleaning method suggested above. It is advisable that they use some non-irritating oil or any other lubricating edible oil just to make the use of finger easy. The middle finger of the left hand should be dipped in this oil and introduced gently into the anus, avoiding the hurting of swellings and fissures.

As soon as the oiliness of the finger disappears due to the use of the finger, it should be oiled again. One should clean oneself satisfactorily in this manner. Any slackness in this regard is likely to aggravate the disease.

When the patient requires less water and less time for cleaning, it is a sign that the disease has abated. But if cleaning involves more water and more time, it indicates aggravation. Then greater attention should be paid to diet, treatment, personal hygiene and cleanliness of the anal canal and the rectum.

Non-observance of the rules of hygiene and its adverse effects

When men and women do not observe the rules of hygiene mentioned above, they may experience the following harmful effects :

1. Some waste matter may remain adhering to these parts and cause the membrane there to grow more sensitive.
2. When the waste matter remains there for a long time, it begins to decompose and give off an offensive odour and cause nervous symptoms.
3. This portion of the stools hardens and causes pressure, which in turn causes habitual

constipation, piles and some mental symptoms.

4. Lack of proper cleanliness weakens the roots of the hair and makes the hair grow thin and fall off.

Persons in good health do not have any trace of waste matter in their system. If the general health is excellent, stools will pass out on their own and no particle of waste product will remain inside the body.

Sometimes a person is not able to evacuate fully. A part of the faeces are excreted and then the bowel motion is obstructed. Waiting and straining also prove to be of no use. In this case also, it is advisable to clean the rectum from inside with the finger inserted into it as deep as possible.

Cows, horses, sheep and other animals, after defecating, contract and expand the anus twice or thrice so that the anal canal is thoroughly cleaned. No waste matter remains inside or outside, nor is there any need to wipe the place clean with paper, or cloth, or wash it with water. Their eating and living habits are regular and they depend on natural food. But human beings commit many errors in their daily habits of eating, living and working, such as eating items made out of white flour (Maida) and sweetmeats

fried in ghee. The wheat is ground to a fine powder and the husk is separated. Vegetables are fried and cooked for a long time, though this should not be done. Their daily habits are also not regular. Nor do they observe the rules of health. Hence their stomach is not emptied regularly and the anal canal is not cleaned properly. So the above mentioned method of cleaning has been suggested.

Some people think that it is quite unnecessary to adopt this method of cleaning. Others feel that if this method is adopted, it may cause sores or some internal injury. People suffering from piles, fistula or sores are afraid that it may aggravate the disease.

These are wrong notions and this method of cleaning is essential. Carelessness in this respect will lead to much suffering and sometimes even surgical operations are required.

In my opinion, if this method of cleaning is not learnt early, it cannot be adopted in later life. And one remains deprived of its benefits.

Such advice has been given to entire families by scholars and sages and experts. Some people make it a part of their daily life. Others prefer to be negligent despite their knowledge. I would like to reiterate that those who follow this yogic practice lead a happy life. Those who do not

care about it may fall a victim to dangerous diseases, with harmful consequences including early death.

I endorse this yogic practice with 56 years of experience at my back. I recommend it strongly so that the human race may be liberated from the monster of constipation.

I also reproduce below the views of Shri Shiv Lal Vaid on this point :

“There are three valves or rings in the rectum, so those suffering from constipation, piles, fistula etc., and even persons in normal health, after every bowel motion should use the middle finger of the left hand to clean the passage upto the first valve. This can be done with the first phalanx of the finger. Any stool particles that adhere to the finger should be washed away with water. When this portion has been cleaned, the finger should be inserted upto the second valve, and again any stool particles that adhere to the finger should be washed away. This should be done with the help of the second phalanx of the finger. Similarly, the third phalanx of the finger should be used to clean the third valve. When this part has been cleaned, the process should be reversed and the cleaning again done from the upper most third valve to the lowest first valve. When the cleaning is begun from inside the passage, the finger should be introduced as

deep inside as possible. When this method of cleaning has been completed, the finger should again be moved round the passage from right to left, and from left to right, and the entire anus and rectum thus cleaned out. The true test of thorough cleansing is that no particle of excreta should come out adhering to the finger on the second or third occasion."

Some people have expressed doubts about the efficacy or desirability of hygienic cleansing as suggested above. They feel that any stool particle left adhering to the finger might cause some infection. It has also been pointed out that this method is difficult to follow by those suffering from spasm, constriction or contraction of the anus or rectum. All I can say is that these doubts are baseless and should cause no inhibitions in following a hygienic method that can help eliminate a number of mental and physical diseases. In fact, this practice is extremely useful for patients suffering from piles, fistula, fissures, gastric or duodenal ulcers or appendicitis and they should show no slackness or negligence in following it.

The Teeth and Their Care

There is a common saying that if the teeth are healthy, man is healthy. There can be no doubt about the truth of this observation. If food is to be digested, it has to be properly chewed before being swallowed. And this is possible only if the teeth are healthy and firm.

The following points should be kept in mind about the care of the teeth :

1. Great care should be taken to keep the teeth clean.
2. The mouth should be rinsed carefully after eating food, fruit, nuts or any other food-stuffs, or drinking milk or tea or taking any other drinks, so that no food particles remain sticking to the teeth.
3. The gums should not be swollen, painful, bleeding or full of pus.
4. The bowels should be evacuated regularly and there should be no constipation.

5. There should be no gaps or cavities in the teeth, where particles of food, fruit, nuts and vegetables may lodge. Any food particles sticking to the teeth may even result in the loss of teeth. It is of utmost importance that these particles are removed. The best thing is to brush the teeth after every meal. Tooth-picks are also available in the market, or may be easily made at home. Teeth may also be cleaned with the help of fine thread, or khadi (handloom) cloth.
6. The teeth may be cleaned with natural fresh twigs of neem or babul (datun), or with brush and toothpaste. Those cleaning the teeth with datun should chew one end into the form of a brush and use it in the same manner as a brush. The datun should also be split into two and used to clean the tongue. Those who use a toothbrush, should also use a tongue cleaner, made of plastic or metal, to clean the tongue well. There should be no coating on the tongue.
7. Effective tooth powder can be prepared at home also. The outer shell of almonds or coconuts or the babul wood is burnt to charcoal, finely powdered, sifted and mixed

with a little common salt. This powder is rubbed well on the inner and outer side of the teeth with the middle finger and then the mouth is rinsed.

8. If it is felt that brushing has not cleaned the teeth completely and some food particles or shreds of fruit, vegetables, etc., are still sticking to them, one may use a fine, strong piece of silk or cotton thread for this purpose. Thread may be required if the gums have receded and there are gaps or empty spaces in-between the teeth. However, it is necessary to take precautions while using the thread so that the gums are not damaged. Children of 10 or 12 are advised not to use thread in this way.
9. Tooth-picks may also be used to extricate particles of food lodged in-between the teeth. Tooth-picks are generally made of orange wood and one of their tips is pointed. While using tooth-picks, care should be taken that the gums are not injured and the teeth are not loosened. If tooth-picks are used carelessly, they may damage the gums. This is why some dentists advise their patients to strictly avoid the use of tooth-picks. Some people keep

chewing tooth-picks made of ordinary wood until splinters break off and get lodged in the crevices between the teeth. This practice harms the membranes of the mouth.

10. Taking some sour fruit after a meal, e.g. orange, sweet-limes, grapes, etc., is a good habit as it cleans the teeth as well as stimulates the inner membrane of the mouth and the secretion of saliva. It also decreases the presence of acids in the mouth and saves the teeth from damage.

Every family should regularly follow the following rules of oral hygiene :

1. Particular attention should be paid to dental care, oral hygiene and the diet of pregnant women.
2. All mothers, whether from poor or affluent families, should breast-feed the infants so that they are well nurtured.
3. During the nursing period the infant puts pressure on the mouth, which is very useful for the healthy growth of the teeth, gums, jaws and other parts of the mouth.
4. Mothers should be watchful that the children do not get addicted to sucking their thumbs. It is a bad habit which leads to the shortening or narrowing of the jaws.

5. From the time the infant is less than one year old until its growth into childhood and youth, it should consume such food as contains calcium, phosphorus and Vitamins A, C and D in sufficient quantities. The mother who breast-feeds the child should take a proper diet. The diet of the child who is not breast-fed should be supplemented with juice of fruits and nuts, so that the child develops sound digestion and does not suffer from constipation. At the time of weaning, an infant's diet should contain milk, fruit, nuts, meat, fish and eggs in adequate quantity and a small quantity of sweet substances, such as gur and sugar.
6. Vegetables and fruit clean the teeth naturally, so they should form an essential part of our diet. Apples, uncooked cabbage, cereals, carrots, cucumber, snakegourd, tomatoes, etc. are very useful for this purpose.
7. As soon as a child's milk-teeth appear, arrangements should be made for their care, and any cavities, large or small, should be filled in without delay. If despite following all the rules of dental care, the teeth do not emerge properly, or their

appearance is delayed, a Homoeopathic physician or a dentist should be consulted.

We should take adequate quantities of calcium and phosphorus in our daily diet. These minerals provide excellent ingredients of diet and also help in the excretion of waste matter. When the child is still in its mother's womb, the mother should continue to partake of nutritious food. This will not only help the pregnant woman but is also beneficial to the health of the unborn child, which requires many substances from the mother's body, including phosphorus, calcium, etc., for the development of its milk teeth.

It is important that the child should partake of a balanced diet from its birth to the age of 13 years. Sometimes the child has poor digestion, or its diet is deficient in nutriments, or its intake of Vitamin A is insufficient, or during the time the enamel of the teeth is being formed it suffers from fever or some other illness. In such situations, cavities and hollows appear in the teeth and their lower part gets exposed. It is important to prevent such a situation. Vitamin D is also very necessary for the teeth to look beautiful and firm.

Caries

This disease is second in the list of harmful

children's diseases. 92 per cent of children between the age of 1 and 12 years have been found to be victims of this disease. Commonly referred to as the decaying of teeth, it proves to be a grave menace between the ages of 13 and 29. Girls are more prone to it than boys. The permanent teeth that start appearing from sixth year onwards including the molars are all damaged by caries.

It is not difficult to check caries. In fact, it should not be allowed to take root. It is heartening that in some countries, its incidence is almost negligible.

Caries may be prevented if particular attention is paid to the care of the teeth. White marks appear on the enamel of the teeth before they are attacked by caries. These marks indicate the deficiency of calcium. After some time a small cavity appears, which moves downwards to the soft dentine and begins to spread there. Finally, the whole tooth gets decayed. Caries will attack wherever the teeth lack enamel. In some children, the disease spreads very rapidly. The main cause of tooth decay is the lack of a balanced and nutritious diet. In fact, if the diet is not balanced, it will cause not only decay of the teeth but also systemic and endocrine disturbances. Dentists are of the opinion that

caries may be prevented if one enjoys general good health.

Tender gums, inflamed gums, receding or bleeding gums

If the mouth is not cleaned thoroughly, a yellowish deposit or tartar appears on the teeth, and causes malocclusion and systemic diseases. These diseases may also be caused by the intake of mercury, zinc, phosphorus and other such substances. Constipation is another main cause. Tartar is a great enemy of the teeth and gums and must not be allowed to deposit on them. Strict and perfect oral hygiene is the method to prevent it. Inflamed, receding or bleeding gums need medical attention. Massage of the gums and gargling with temperately hot water can prevent these conditions. But in case their symptoms appear, they should not be neglected.

Pyorrhoea

Receding gums, bleeding, or swelling of the gums, offensive odour in the mouth, etc., are the symptoms of pyorrhoea. These symptoms indicate that the patient's bowels have not been evacuated regularly and satisfactorily and that he suffers from chronic constipation.

Brushing the teeth

A tooth brush should be applied to the teeth

as soon as a child is two years old. The mother should brush the child's teeth everyday, until he is able to do it himself. Adults should use a straight-handled brush, with two rows of bristles at one end. There should not be more than six tufts spaced far apart, so that the brush can be cleaned well. A good quality brush will not leave any hairs in the mouth after brushing. It is better if a person uses two brushes, so that quite a hard and dry brush is available both in the morning and at night before going to bed for the cleaning of the teeth. The brushing of the teeth should begin with the gums. The upper teeth should be brushed downwards and the lower teeth upwards with a circular, sweeping motion. The chewing surface of the teeth should be well brushed forwards and backwards as well as from one side to the other. The aim should be to clean carefully and completely all the surfaces of the teeth.

Tartar

Sometimes it is found that in spite of brushing, a layer of a substance like lime has accumulated on the teeth. This layer is caused by mucin and the minerals present in the saliva. When it grows thick, it is called tartar. Tartar is a great enemy of the teeth and should not be allowed to accumulate. But if it does, it is

necessary to consult a dentist, who will scrape it off and polish the teeth. Indigestion and failure to clean the teeth properly are two major factors responsible for the accumulation of tartar. So it is important that we take a balanced diet and pay full attention to oral hygiene.

Consulting the dentist

It is a very good habit to consult the dentist at least once every three months. This habit should commence at the age of two and continue for the rest of life. Regular examination of the teeth will ensure that the disease is detected and checked at an early stage and the teeth are saved from being damaged. Besides, the dentist will be able to check malformation or displacement of the teeth. He will fill the cavities, if any, and extract the decayed tooth and fix an artificial one. If some teeth have been extracted, it is good to have artificial dentures fitted so that there appear no ugly gaps between the teeth, there is no difficulty in chewing the food, and there is no distortion in speech.

Dental specialists are of the opinion that sets of artificial dentures should be changed from time to time, as the bones of the jaws gradually contract.

Diet and the teeth

It is seen generally that children brought up

on a balanced diet possess beautiful, well-developed teeth. In the absence of such diet, the above-mentioned diseases may attack the teeth. Growth and healthy development of the teeth depends on balanced diet. Doctors advise that substances like sugar and gur should be taken only in small quantities and should not be allowed to remain in the mouth for a long time. It is essential to eat green and leafy vegetables, fruit, nuts, meat and fish. If the bread we eat is hard, it will need thorough chewing before being swallowed and our gums and teeth will get strengthened.

6

The Eyes, Ears and Nose

Importance of the eyes

Our eyes are surely God's greatest gift to us. Even the slightest carelessness may ruin them for life. So it is necessary that we take good care of them. We should wash them with water every-day so that they remain clean and healthy. In case of any discomfort in the eyes or any discharge from them, we should immediately consult an eye specialist.

When we wash our face early in the morning, we can wash our eyes as well. The correct method is to take water in the cupped hands or in an eye-cup, bring it close to one of the eyes and open and shut the eye-lids a number of times. This process may be repeated a number of times, taking fresh water every time. Also, the water used for one eye should not be used for the other. Our eyes will feel very fresh after being washed in this way. Here is an advice

very simple to follow, costing absolutely nothing, but extremely useful.

If the eyes give no trouble, that is fine. Just keep them clean with washing. But such symptoms as blurred vision, gritty deposits in the eyes, heaviness and thickening of the eyelids, bending inwards or outwards of the eye-lashes, the appearance of granules in the eyes, loss of brightness of vision, are danger signals and should be attended to without delay.

Eye-sight and diet

People are generally ignorant about the role played by a balanced diet in giving us good eye-sight. But this is a factor that cannot be over-emphasised. So no matter to which community a person belongs, he should consume nutritious food to maintain good health and preserve his eye-sight.

It is harmful for the eyes to read while lying in bed. This habit should be avoided as far as possible. It is better to read in a sitting position. However, if we must read in bed, we should not lie flat, but recline against pillows ; the book should be held in a slanting position before the eyes, and the light should fall from behind, or from above, on the book, and not on the eyes.

It is quite a common sight to find people

reading in moving buses, trains and cars. This practice is very harmful for the eyes as the position of the eyes and the book is constantly shifting.

Reading or doing any other work in dim light is as bad as in glaring light. The intensity of light should be normal, or our eyes will be unduly strained. The following points should be noted for the care of the eyes :

1. The light should not fall directly on the eyes.
2. The light inside the room should not be dim.
3. The walls of the room should be painted green, or greenish yellow, wherever possible. Colours like pink or red absorb the light.
4. We should not stoop while reading. This position strains the eyes.
5. We should get our eyes checked regularly by an eye specialist. If we feel the necessity of wearing glasses, we should get our eyes tested and glasses made under specialised professional supervision.
6. In some cases sun-glasses or goggles are worn to protect the eyes from strong light, heat or dust. This is a helpful

habit to prevent irritation or inflammation of the eyes.

7. Catarrhal conditions and other diseases of the eyes should be got properly treated.

Care of the ears

It is natural for a soft kind of wax to form in the ears, but if too much wax forms, or if it hardens, or if there is offensive odour, or formation of scales, it may cause ear-ache and swelling. So if scales begin to flake off from the ears, or there is a discharge or the ears are affected by cold, or there is ear-ache, it calls for immediate medical attention. Noises in the ears and hardness of hearing are other danger signals that must not be neglected. It is a good practice to wipe the ears dry both from inside and outside with a dry towel after taking a bath.

Care of the nose

There should be no discharge from the nose in normal conditions. But if there is a thick or thin discharge from the nose, or the nose is blocked or there is some obstruction, or one feels difficulty in breathing through the nose, it should be promptly treated. Children or young persons who sleep with the mouth open generally have some nose trouble. This condition

may also be due to the growth of a polypus nose. All these require medical treatment. The nose should be washed with water daily, but if one works in a factory or workshop, or lives in dusty environment, or is likely to inhale dust from the air, then the face and hands should be washed a number of times, and the nose should also be carefully cleaned at that time. It is a healthy practice to apply oil to the head and nose before a bath. All sorts of discharges from the nose, of recent origin or of long standing, frequent bouts of sneezing or catarrhal conditions of its mucus membranes should be properly treated by the physician.

Care of the Skin

The skin

Skin-care is essential to good health. One should first think of diet and digestion before thinking about medication or cosmetics for the skin. It is necessary to see that the skin functions properly. The skin regulates the temperature of the body. Clothing also helps in this function. So clothes should be selected according to the season, and with an eye to colour and texture of the material.

Daily bathing not only cleans the skin but also strengthens the muscles. In the hot season, one should bathe twice a day and after being washed with soap, the skin should be rubbed dry with a dry towel. This invigorates the circulation of blood. Bathing also banishes fatigue and one feels fresh and energetic. A kind of oil is exuded by the skin, which helps to keep it smooth. So one should use soap of a good quality and bathe in warm or tepid water during

the winter and with water which is at body temperature in other seasons. The under-arms should be well soaped and washed, as it is here that we perspire the most and give off body odour. The skin should be rubbed well after bathing.

Perspiration

The palms of the hands and the soles of the feet generally do not perspire. If they perspire at all, it is a sign of ill-health and efforts should be made to improve the health.

Care of the hands

As we are constantly using the hands to perform various actions, their care and cleanliness is very important. Books, papers, clothing, etc., may be spoiled if the hands are not clean. The hands should be washed thoroughly after visiting the toilet, and also before meals or before touching any foodstuffs. They should be washed at once after being soiled in some activity.

Care of the nails

Nails should not be allowed to grow long, otherwise it will be difficult to use the fingers properly. The skin around the nails should be gently pushed away when washing the hands, or else the flesh adheres to the nails. When the nails grow long, the skin is liable to tear and

hang downwards. This condition is known as 'hand-nail'. In such a case, the skin should be carefully cut off and not pulled or torn, as pulling may cut or bruise the skin and cause pimples or boils. If finger-nails are well-manicured and we are otherwise healthy, it adds to our beauty and helps us to do our work properly.

Special attention should be paid to nails that are grown long. As a matter of fact, long nails are quite an embarrassment. They may cause injuries on the body while bathing, washing or cleaning the mouth. It is difficult to use long-nailed fingers nimbly or fluently. Quite often, dirt particles deposit on the inner surface of the nails, making them look black and ugly. So special attention has to be paid to keep them clean. These days, affluent persons use soap and a nail-brush for this purpose.

Why are nails grown long? At one time long nails were associated with poor, ignorant and negligent persons, but in modern times, it is considered fashionable among educated and wealthy people to grow long nails. It is a matter of regret that our college girls are mostly found indulging in this habit.

Baldness and falling hair

In my opinion, if the hair breaks off easily during or after washing, or when it is being

rubbed dry with a towel, oiled or combed, or if the hair becomes so brittle that it comes out in tufts, it indicates a poor state of general health and improper functioning of the glands in the body. If our diet is well balanced, food is well digested and general health is good, our hair also will grow luxuriantly, and neither fall off nor thin, leave alone tending to baldness.

Cosmetics

It is not at all necessary to use cosmetics and other artificial aids to the toilet. Instead, it is more important to follow the advice given earlier regarding good health and good looks. All attention should be directed to proper diet, excretion and perspiration and daily hygiene of the body, cleanliness, exercise, walking in fresh air and adequate restful sleep. This will endow us with the beauty and sparkle of good health ; our hair will look glossy, teeth will sparkle like pearls, and eyes will shine. There is no other way to health and beauty. Cosmetics are hardly of any use in this regard.

Yet many kinds of cosmetics are manufactured for women. Paste, powder, cream, mascara and eye-shadow are constantly becoming more and more popular. Cosmetics may be used to a certain extent, but spending on perfumed hair

oil and similar toilet articles is not only a waste of money but also injurious to health.

A note of caution

It is better to learn to do without face powder or cream as they contain certain harmful ingredients. Eminent scientists and experienced doctors permit only the use of cold cream.

Cold cream is generally made from almond oil, wax from honeycombs, lanolin and spermaceli mixed with some other substances. It removes the roughness of the skin and prevents it from chapping. Hence it is good for those people whose skin is rather dry. Its main advantage is that it is not harmful.

The best way to clean our skin is to wash it with soap and water. The use of different creams for this purpose is unnecessary wastage of money. I do not object to the use of cleansing cream, since it does not, at least, harm the skin. But vanishing cream should not be used under any circumstances. Vanishing cream contains soap that dries on the skin and proves very harmful to it.

Nourishing cream is absolutely useless because external application of this cream does not help the skin in any way. As said earlier, if the state of our general health is good, our skin

too will be healthy and smooth. If our health is poor, no nourishing cream can bring lustre to the skin.

Talcum powder and face powder

These powders are prepared from talc. If the talc has not been properly sifted and some particles of minerals remain in it, it will harm the skin. Besides, the quality of talcum powder depends upon the purity of talc used to prepare it. Sometimes talcum powder is adulterated with powdered rice or starch taken out from wheat or water-apple, (singhara). These substances contain certain proteins that are harmful to the skin. Hence only high quality talcum powders should be used.

The puff with which powder is applied becomes dirty after one or two applications. Sometimes the same puff is used by all the members of the family. This is a most unhygienic practice and can be very harmful. The ideal method of applying powder is to use a piece of clean cotton-wool as an applicator and discard it immediately so that there is no possibility of using it the second time.

Care of the feet

It is necessary that we walk about and be active for the sake of our physical well-being.

This depends upon our feet. The feet should never be flat and the soles should be well shaped so that the toes point straight and do not protrude outwards. The structure of the feet is such that they can easily carry the entire weight of the body. When the weight rests on the outer edges of the feet, it is well distributed and the ankles are held in correct position.

Corns on the feet

Wearing of tight shoes results in corns on the feet that are difficult to remove. It is important to take precautions against the appearance of corns. Sometimes the corns begin to ache. The pressure of the shoes against the corns makes us feel so uncomfortable that it is difficult even to walk. People get the corns cut but that is hardly a healthy practice. Corns also disfigure the feet. Open sandals should be worn to prevent corns. Our shoes should be well-fitting, neither too tight, nor high-heeled. We should not acquire such habits as will affect the healthy growth of the feet. Illness also affects the feet. During an illness, particularly if it is a prolonged one, the feet are not properly exercised and their muscles get weakened. If we do not use our feet properly, it not only disfigures them but also reduces their strength and we

begin to experience discomfort or pain while walking. Improper use of the feet has far-reaching effects. If the feet are not in a good condition and we cannot tread with ease and comfort, we will find difficulty in walking, running or doing any other work. It will destroy our physical ability and adversely affect our general health.

Care of the hair

It is most essential that we should take good care of the hair. If the hair grows luxuriantly in both men and women, it is a sign of good health. It enhances beauty and good looks. The condition of the hair indicates the state of nutrition. The circulation of blood strengthens the roots of the hair.

How frequently the hair should be washed depends upon the following factors :

1. The type of hair and its condition. Oily and thick hair is likely to collect more dust than dry and thin hair, necessitating more frequent washing.
2. The season of the year. During the days of frequent duststorms, the hair, obviously, needs to be washed more frequently.
3. The occupation of a person. The hair

should be washed daily by those who work in mills and workshops, undertake manual labour, travel by train, or work in the dust-laden, smoke-filled atmosphere of factories.

The hair should be washed with plenty of soap and hot water. The head should be rubbed well with the finger-tips to wash out the dirt. The hair should be soaped and washed out twice in succession, so that all dust is rinsed away. Under no circumstances should dandruff be allowed to develop. It is necessary to wash the hair with soap, at least twice a week. It is also necessary that the hair is dried well and oiled. It should be combed at least twice a day. Generally the hair is not infected with lice, but in case such infection takes place, it again reflects on the condition of general health and hygiene and needs prompt attention.

The hair should not fall off or split while it is being washed, rubbed dry or oiled. It should not grow thin in front near the forehead, or at the back where a knot is tied. It should not fall or grow grey prematurely. Falling hair is a symptom of some chronic illness or poor digestion. This condition should be medically treated and efforts should be made to regain normal health as quickly as possible.

It is necessary to take precautions and seek medical advice if required long before baldness sets in, or the hair begins to fall off. There is no effective remedy for baldness and it makes one look disfigured.

Hygiene of the excretory organs

All organs of excretion should be thoroughly cleaned at the time of visiting the toilet. A whitish deposit collecting at the tip of the male organ can be highly infectious. So it should be washed regularly with water in the mornings and evenings.

The skin at the tip of the male organ should be drawn back and all deposits washed away.

The vagina in women should be similarly cleaned. The folds of skin should be parted in front, and all waste matter washed away, both in the mornings and evenings, as otherwise there is danger of serious infection.

Feminine hygiene in leucorrhoea

Leucorrhoea is a common disease to which women fall a prey when they are physically weak. It is caused by excessive indulgence in sex, by bearing too many children, or even by heavy cold. In leucorrhoea, there is an abnormal white purulent discharge from the vagina. So it is necessary to keep the vagina clean during the attacks of leucorrhoea.

Women should not suffer from any type of discharge in between menstrual periods, whether heavy or scanty. Any such discharge is unusual. It may give off an offensive odour and give a reddish tinge to the affected parts of the body. It is necessary to find ways to stop this type of flow or discharge.

8

Intoxicating Substances

Any discussion on health will remain incomplete in the absence of a detailed account of the harmful effects of intoxicating substances on our health.

Liquor

This has a very injurious effect on the body. Drinking generates unusual heat in the body and the skin becomes warm. One feels buoyant and energised for a while. But the fact is that drinking causes a depression in the internal heat of a human being. Not much harm ensues if one takes rest when under the influence of liquor and protects oneself against cold. But if precautions are not taken against extreme cold or excessive heat, there is a danger of contracting cough and cold, bronchitis and many other types of diseases.

Injurious effects of the consumption of liquor

Excessive consumption of liquor destroys the

mind. The hard drinker loses the power to discriminate between the right and the wrong. There is a constant decline in his moral values. His habits become low and vulgar and he develops propensity for a vagrant life. A stage comes when he no longer cares about what is right and wrong and invariably takes wrong decisions. Since liquor gives him a feeling of strength and well-being, although temporary and deceptive, he readily picks quarrels with others and becomes a social nuisance. Besides, he often falls a victim to serious diseases like syphilis and gonorrhoea. The children born to him have to undergo untold suffering. There is no wonder that drinking has been so strongly denounced in our Indian culture.

Drinking affects the central nervous system. The more one drinks, the longer the effects last. The effect of even a small drink lasts for several hours. Normally, liquor first affects the nerves, and then the centres that control the different parts of the body and the muscles, eyes, ears, nose and heart. Small doses of alcohol do not affect breathing, but large amounts will affect the nerves that control breathing, so that they almost stop functioning. This may prove fatal.

Consuming small amounts of liquor does not affect digestion, but it retards the function of the

nerves. The function of the intestines also slows down. So it is obvious that those who drink a good deal will tend to be constipated, and the digested matter will remain long in the stomach, which is detrimental to health. It is also not wise to consume such medicines as contain a large proportion of alcohol. If one consumes such medicines regularly, one may develop an addiction to them that cannot be got rid of easily.

Drinking liquor regularly for many years, or drinking very strong liquor, or drinking more liquor when the effects of the liquor already consumed persist in the body is injurious to health, and becomes a sort of addiction or disease. In this state, one loses one's fitness and alertness. The digestive organs, the liver and many types of tender tissues are so affected that one falls a victim to disease. Drinking weakens the lungs so that they lose their power of resistance to disease.

Inquiries made from different investigative agencies and insurance companies reveal that drinking shortens human longevity. People who are addicted to liquor do not live long, while those who are teetotallers enjoy a long span of life. Some other findings are :

1. Drinking makes a man quarrelsome and

violent.

2. A drunkard is unable to shoulder the responsibility of his family.
3. Because of their addiction to drinking, the rich become poor and the poor turn into paupers.
4. Drunkards become habitually dependent on others.
5. People who are habitual drinkers are constantly ailing, and are mentally disturbed. They may even become temporarily insane at times.

Some persons, who are in weak health, take tonics or drinks that have an alcohol content. They drink beer and other drinks, as if they were drinking tea, coffee, soda water or aerated water, and become victims of the diseases mentioned above.

The following words of caution are set down so that those who are in the habit of drinking may not harm the society or set a bad example :

1. The percentage of alcohol in beer and other mild drinks should be low.
2. Liquor should be sipped slowly.
3. Liquor should be taken with a meal or after a meal, but never on an empty stomach.

4. Any type of intoxicating drink should be taken only after completing one's task or job.
5. No work involving physical or mental exertion should be undertaken within a few hours of consuming liquor.
6. No important decisions should be taken as long as the effect of liquor persists. Sometimes such decisions may have very far-reaching adverse effects.

Drugs and other narcotics.

One should not be addicted to drugs like marijuana, heroin, opium or tobacco, as they are all harmful to health, particularly when the body is in a weak condition and prone to catch a disease.

Nor should one take any medicine that contains the drugs mentioned above. When one takes such medicines over a long period, one tends to get addicted to them and the dosage has to be constantly increased. This, too, is extremely injurious to health.

Last But Not Least

In this last chapter, the reader's attention will be drawn to some other considerations regarding health that have not been mentioned earlier. The fact that they are being taken up for discussion in the end should not suggest that they are not important.

Obesity versus leanness

Any discussion on health remains incomplete without a discussion on weight. We should not be weak and thin, but obesity should also be regarded as a disease. The structure of the body should be such that one's appearance is handsome or beautiful, and no difficulty is experienced while walking, sitting, rising, working or running about. To this end, the thin person should try to increase his weight, while one who is fat should try to reduce his weight. But this should be done only under competent medical guidance.

Obesity and its causes

When one consumes energy-producing foods which produce calories in excess of the body's requirements, fats begin to accumulate in the body. It has been found that an intake of 4000 calories adds $\frac{1}{2}$ kilogram of fat to the body.

The question of the weight of the body is vital. When one's weight is correct, one looks healthy and graceful. Being overweight or underweight not only spoils one's looks but also affects the health adversely. It indicates that there is some definite deficiency in the body.

The body's weight is related to height. A certain proportion of fat on the body protects it from hurt and injury while walking about or working. Fat also protects the internal organs of the abdomen, so that they remain in correct position and function properly. The condition of obesity is found in those who overeat. They also suffer from diabetes and diseases of the heart.

The ability to accumulate fat differs from person to person. Some tend to grow fatter, while others grow thinner. Weight can generally be controlled if the rules of health are correctly observed. Food consumption is also not the same for all persons. The intake of food depends upon one's structure, age, habits, temperament,

and also upon the kind of work one does, and the hours of sleep one gets. Each individual should know his correct weight, and try to maintain it through proper diet. When there is any sudden loss of weight, it should be considered a bad sign.

Obesity should not be treated without consulting a competent doctor. Traditionally, there are two ways of reducing weight :

1. Decreasing the intake of food ; and
2. Increasing physical labour and exercise.

When we go without food, our weight decreases at the rate of an ounce an hour. But we should not starve to decrease weight, as this is harmful to health. Nor should we try to decrease weight by exercise, as this leads to greater hunger and we may be compelled to eat more.

To decrease weight, substances such as starch, sugar and fat should be consumed in lesser quantity. We should take a balanced diet containing sufficient vitamins and mineral salts. The diet should be such that it yields a smaller number of calories than the calories expended per day. In this way, an obese person will start using up his accumulated fat, and his weight will decrease.

One-fourth of the total caloric intake should

be decreased for losing weight. But in case of extremely fat persons, doctors decrease their calorie-intake by half. There should be no loss of vitamins, proteins or salts by thus lowering the level of calorie-intake. Eating less does not imply that the diet should not be balanced. It is important to keep the diet balanced and reduce the weight gradually. One should reduce the consumption of those vegetables and cereals that contain starch ; intake of butter should also be reduced. It is good to take fresh fruit. Tomato, cucumber, cauliflower, carrot, radish, spinach and other leafy vegetables may be bulky in quantity but actually contain fewer calories. One may eat anyone of these one likes. Oranges, grapes, peaches, pine-apples, water-melons and musk-melons, and other juicy fruits are ideal for this purpose. They contain plenty of vitamins and salts but less of energy-producing substances. They will satisfy our hunger but keep our weight under control. When hungry, one should drink a little water, as this quenches the hunger for some time. The highly advertised instantaneous weight-reducing medicines or diets should be strictly avoided. Reducing weight involves time and effort, and haste may lead to harmful effects.

Nature has so arranged that when our general health is good, even if our weight goes down

due to dieting, the balance can be restored normally, and when the correct level of weight is regained, weight-increase ceases automatically. When one overeats, the excess food is digested by the digestive system and no fat is added to the body. But in case of any defect in the system of metabolism, food-substances accumulate instead of being converted into nourishment. This may take either the form of deposits of fat, or the muscles may grow heavy and over-developed. Metabolism in these persons is usually so good that the food they eat is easily assimilated.

Leanness

Excessive leanness is another condition that may cause concern. The causes that lead to this state are :

1. The nerve-centres that control the emotions are highly strung and the person becomes easily excited ;
2. Some defect in the functioning of the glands ;
3. Some local infection ;
4. Lack of intake of energy-producing and nourishing substances, and improper functioning of the digestive system.

Therefore the person who is under-weight

and needs to increase his weight should follow the following suggestions :

1. The body should not suffer from any disease.
2. Plenty of rest should be taken.
3. Nourishing meals should be taken after proper planning, so that he may remain active and yet add to his weight.
4. His hunger should be satisfied and there should be no trouble in digesting. Any discomfort after the meals should be promptly treated.
5. The food served at meal-times should be tempting, and the atmosphere congenial.
6. Light snacks should be taken between breakfast and lunch-time, and between lunch and dinner. A glass of milk should be taken before going to bed.
7. Hard labour and physical exercise should be avoided.
8. Rest should be taken before and after meals.
9. There must be some hours during the day when he is able to take complete uninterrupted rest.

To increase weight, such foods should be selected as give calories but do not have to be

consumed in large quantities. Nuts, fruit, butter, cream, walnuts, groundnuts, etc., and dried fruits like raisins, dates, apricots and figs, pulses and other nutritious edibles are very suitable from this point of view. Additional calories may also be provided by carrots, potatoes, peas, sweet potatoes, leafy vegetables, bananas, etc. Just as obesity can be reduced only gradually, gaining weight is also a gradual process. Haste in either case can prove harmful. Only a properly planned diet patiently taken over a long period can ensure any success in this direction. Some people eat so little and are so careless about food that they always remain lean and thin, while others eat so much that they readily fall a prey to disease and ailments. Persons belonging to both these categories are guilty of not taking a balanced diet.

It is not difficult to control weight, but if due to certain errors or special reasons, weight is drastically reduced, it is difficult to correct the condition. So one should proceed rather carefully.

Further information in this regard may be obtained in the chapter Nutritious Diet.

Feminine health and hygiene

It is also necessary to give a brief account

of the health of women.

Menstruation

Menstruation is a vital bodily function for women.

According to the natural process this should occur every 28 days and continue for four days.

1. The quantity of blood flowing out should be 100-150 grams. If the flow is heavy and continues for a longer period, or if it is scanty and stops after two or three days, it is a symptom of ill health.
2. If menstruation does not commence even after 28 days, or if it commences before time, it suggests that there is something wrong with the menstrual system.
- 3 The colour of the menstrual blood is generally of the hue of rust, and sometimes even brownish.
4. The blood flowing out should be like normal blood without any fibres or clots.
5. Normally there should be no offensive odour. Any offensive odour is a sign of ill health.

When a girl has attained the age of twelve or thirteen, her mother should tell her that the function of menstruation will commence round about the age of 14 or 15, so that when the

time comes, the girl is not taken by surprise but realises that the natural process of monthly periods is beginning. It is good for health if menstruation does not commence prematurely. Sometimes the commencement of the menstrual cycle is delayed. If the girl does not feel any discomfort, there is nothing to worry about it.

Hygiene and cleanliness during menstruation

1. The sanitary napkin should be frequently changed.
2. Cold water should not be used for bathing.
3. The feet should not be washed or allowed to get wet too often
4. The hair should not be moistened during combing, nor the head washed during these few days.
5. Any heavy physical labour should not be undertaken. It is advisable not to go in for strenuous exercise, or take part in sports like jumping, running, riding, swimming, etc.
6. One should avoid the emotions of anger, fear, terror, agitation or excitement in any form.
7. As women get easily tired during these days and generally suffer from backache,

they should take as much rest as possible. They may either lie down or recline in bed.

8. There is a greater need for rest for women who are easily angered, irritated or upset over trifles, suffer nervous tension or feel upset over any sudden development, whether joyful or sorrowful. They should not travel by train, motor car, bus or tonga, nor undertake strenuous walking.
9. In summer, or during the days when one perspires easily, women may wash their hands and feet and other parts of the body to keep the muscles clean. On the third or fourth day, they may bathe in tepid water or water at the body temperature.
10. The suggestions mentioned in paragraphs 3, 4, 5, and 6 should be followed a few days before the onset of menstruation, and no tiring work undertaken.

Malfunctioning and deviations

It should be realised by women and young girls that if their menstrual cycle shows any deviations from the normal pattern, it indicates that there is something wrong with their health. They should compare the normal functioning when they were in good health and the deviation now and find out for themselves why the

disorder has been caused. They should try to improve their physical condition. In case of any illness, they should treat it with the help of diet, hygiene and medical care, under the supervision of an experienced physician.

Mental health

Good health implies both physical and mental well-being. Both aspects are correlated and interdependent. Poor physical condition can also affect the mind.

Our concern for health should include mental health as well. Symptoms of mental disturbance may be found in such daily manifestations as losing one's temper on the slightest excuse, making mistakes in writing, speaking incoherently, being suspicious about trifles, mistrusting everyone, acting on whims, indecisiveness, etc. These symptoms suggest an ailing mind and should be promptly attended to.

Homoeopathy attaches great importance to the symptoms related to temperament and behaviour. In fact, quite frequently, whatever be the ailment, medicines are suggested only on the basis of psychological symptoms. Such patients as lose their temper on the least provocation, worry unnecessarily, or are too self-centred can be easily treated on the basis of these symptoms.

Homoeopathy pays special attention to the

treatment of the brain and the mind. Anger and irritation over petty matters, excessive worry when emotionally disturbed, peevishness and selfishness are also diseases that affect mental as well as physical development. According to psychologists and medical experts, the mind is closely linked to the nerve centres. If the nervous system functions well, the mind, brain and body will also function well. In cases of mental disturbance, the following symptoms may be evident :

1. Sleeplessness caused by false notions or misplaced mental beliefs ;
2. Indifference or disinclination to work caused by sleeplessness ;
3. Lack of control over organs and their functions ;
4. Lack of coordination in physical movements ;
5. Disturbances in the functioning of the brain ;
6. Forgetfulness in small matters ;
7. Becoming a victim of anger and frustration ;
8. Mental disturbances leading to guilt-complex and even to suicidal tendencies ;
9. Different types of deviations in behaviour and serious disturbances ;
10. Inferiority complex.

So we see how vital it is to have a healthy mind in a healthy body.