YOUR GUIDE TO SAFE AND NUTRITIOUS FOOD @SCHOOL

LEVEL II
Grade 6-8
PREFACE

If ever there was a time to take charge of our food choices and habits, it is now. With our fast changing lifestyles, India faces a silent epidemic of childhood obesity coupled with under nutrition and micronutrient deficiencies. Each one of us, be it parents, teachers or children, has a right and responsibility to make informed choices towards safe and nutritious food (SNF). The ‘Yellow Book’ of the Food Safety and Standards Authority of India (FSSAI) can serve as a guide to make informed choices for a better health. The ‘Yellow Book’ aims at inculcating wholesome food habits at a younger age, as habits formed in our early years stay with us for life. The book would aid the School Health and Wellness Teams in introducing concepts pertaining to safe and nutritious food in a way which is easy to understand and put into routine practice by children. The content is divided into age appropriate modules. The activities and guidelines have been designed to encourage adoption of safe and nutritious food practices at schools. The book is a resource-pool of facts, information and concepts, along with a diverse range of supportive material and tools. The SNF program mascots, ‘Master Sehat’ and ‘Miss Sehat’, are the superheroes and ‘health champs’ to carry the messages forward. They come with a ‘School Crew’, additional characters who provide an interactive means of bringing the content to life.

The seven modules in Level 1 book include:

Module 1 - I Eat Safe Food
Module 2 - I Stay Clean
Module 3 - I Handle Food Hygienically
Module 4 - I Keep My Surroundings Clean
Module 5 - I Am Nourished
Module 6 - I Am Healthy
Module 7 - I Plan My Meals

Module 1: I Eat Safe Food
This module introduces the children to the basic concepts of food safety and hygiene. It covers the importance of safe food handling, cooking hygiene, and the potential dangers of under and overcooked food. The module also highlights the significance of maintaining hygienic food storage practices.

Module 2: I Stay Clean
This module focuses on the importance of personal hygiene and cleanliness. It encourages children to maintain clean habits such as regular handwashing, brushing teeth, and maintaining a clean environment around them. The module also emphasizes the importance of waste management and its role in maintaining good health.

Module 3: I Handle Food Hygienically
This module delves into the specifics of food safety, covering topics such as food preparation, handling raw and cooked food separately, and reheating leftovers properly. It also discusses the importance of using clean utensils and the impact of cross-contamination.

Module 4: I Keep My Surroundings Clean
This module addresses the broader concept of environmental hygiene. It covers the importance of maintaining clean surroundings, pest control, and the impact of street foods on food safety.

Module 5: I Am Nourished
This module is about Personal Hygiene. This urges the children to inculcate good habits to prevent spread of disease through microorganisms present in and on our bodies. It talks about nutrition basics, micro and macro nutrients, and energy value of different foods.

Module 6: I Am Healthy
This module deals with symptoms of deficiency diseases and how to overcome them. It also deals with healthy and unhealthy food choices. The healthy eating plate concept is well highlighted.

Module 7: I Plan My Meals
This module reiterates the importance of consuming a balanced diet. The healthy eating plate concept is well explained and taken as the key points to remember while planning healthy tiffin menus.

Tools and Trackers: Parents and teachers need to assist the young ones of Level 1 while children in the other age group can easily take up these tested habit forming tools as self evaluation exercises to ensure lessons are soundly instilled and retained.

The book supplements what is already taught to the primary and middle grade students. The school authorities are encouraged to include ‘Yellow Book’ as part of their curriculum. It can be used independently as a guide, an activity book or in conjunction with the learning aids provided as part of a comprehensive toolkit in the form of Training manual, Power Point presentations, activities, posters and handouts.

Let’s join hands in building a Healthy and Happy India.

PAWAN AGARWAL
CEO, FSSAI
Let Team Sehat show you how. They will teach you a fun way to safe & healthy eating. Let’s play games and do lots of activities that will not only make us enjoy ourselves but also will give us tips & easy way to nutrition. Master & Miss Sehat are keen to become your friends and partners to take you on a journey into a world of safe and nutritious food so that you can enjoy your life to the fullest!

Did you ever think food and health can be fun?

Let Team Sehat show you how. They will teach you a fun way to safe & healthy eating. Let’s play games and do lots of activities that will not only make us enjoy ourselves but also will give us tips & easy way to nutrition. Master & Miss Sehat are keen to become your friends and partners to take you on a journey into a world of safe and nutritious food so that you can enjoy your life to the fullest!

Turn the pages and let the fun with food, nutrition and hygiene begin.

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## MODULE 1

### I EAT SAFE FOOD

<table>
<thead>
<tr>
<th>Index</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I EAT SAFE FOOD</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>I STAY CLEAN</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>I HANDLE FOOD HYGIENICALLY</td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>I KEEP MY SURROUNDINGS CLEAN</td>
<td>40</td>
</tr>
<tr>
<td>5</td>
<td>I AM NOURISHED</td>
<td>53</td>
</tr>
<tr>
<td>6</td>
<td>I AM HEALTHY</td>
<td>70</td>
</tr>
<tr>
<td>7</td>
<td>I PLAN MY MEALS</td>
<td>84</td>
</tr>
<tr>
<td>8</td>
<td>TOOL AND TRACKERS</td>
<td>96</td>
</tr>
</tbody>
</table>
Did you know that before the meal is served on your table, many dedicated people work to ensure that the food is Nutritious and Safe.

Even before the food we eat is planted, tests may be done on soil, seeds and water. Farmers want to grow safe and wholesome foods and raise healthy animals. Food producers do everything they can to prevent food related illnesses. Workers take many steps to keep food safe such as washing hands, wearing aprons etc. Scientists examine samples to ensure that the environment where food is produced is safe and clean. The grocery store works to deliver safe products to our family. But microorganisms are present everywhere and are constantly on the move. It’s your turn to ensure consuming and keeping your food safe. Let us read more to understand the concept of Food Safety and Nutrition.

All of us enjoy eating! Food provides necessary nutrients for our well being and day to day activities. We eat food both at home and at places away from home. At times we fall sick from what we eat. These are food-borne diseases and are caused by harmful Microorganisms.

Food Safety provides an assurance that food will not cause harm, if prepared or eaten according to its proposed use. Hence, ensuring Food Safety is essential for prevention of food borne diseases.

Did you know that before the meal is served on your table, many dedicated people work to ensure that the food is Nutritious and Safe.

Even before the food we eat is planted, tests may be done on soil, seeds and water. Farmers want to grow safe and wholesome foods and raise healthy animals. Food producers do everything they can to prevent food related illnesses. Workers take many steps to keep food safe such as washing hands, wearing aprons etc. Scientists examine samples to ensure that the environment where food is produced is safe and clean. The grocery store works to deliver safe products to our family. But microorganisms are present everywhere and are constantly on the move. It’s your turn to ensure consuming and keeping your food safe. Let us read more to understand the concept of Food Safety and Nutrition.
**Molds:** Molds are multi-cellular microorganisms and are several mm. in length. They grow on food with low moisture content and at a lower temperature. Then mold growth may can be seen very easily as cottony, dry, powdery velvety or slimy, with colours ranging from white, yellow, blue, green or black.

**Viruses:** Viruses are the smallest of all microorganisms. They are strict parasites and grow only in living cells. They fall in twilight zone - they are non-living when they are in contact with non-living objects and living when they find a host to grow in. They are found everywhere and can cause diseases such as hepatitis and Air borne diseases like common cold & influenza.

**Fungi**

**This group includes: Yeasts**

Yeasts are unicellular microorganisms which are larger in size than bacteria. They can ferment sugar and starch to alcohol and carbon dioxide. This property is made use of in bread making and for fermenting drinks.

Food yeast enrich the fermented products making them rich in vitamin B complex.

Some yeast also spoil some food products eg. Jam & pickles.

**Bacteria**

Bacteria are found everywhere. They are unicellular and are of different shapes and sizes.

Some bacteria are capable of forming spores. A spore is a resistant form of bacteria. Spores remain dormant till conditions for growth become favourable.

When bacteria come in contact with a suitable medium at a suitable temperature, they multiply very fast.
How do Microorganisms Get Transferred?

Microorganisms get transmitted through the 5 F’s:

01. **FOOD** (contaminated food and drink, diseased animals and their products)

02. **FINGERS** (unwashed and dirty hands, grown fingernails)

03. **FAECES** (sewage contaminated food and water; unwashed hands after using the toilet)

04. **FOMITES** (unclean utensils, equipment, door knobs, taps, towels)

05. **FLIES and PESTS** (houselies, cockroaches, rats, mice)

Watch out for contamination!

SNF FUNDA!

Eggs of round worm, thread worm, taenia and giardia are transmitted through sewage, contaminated soil, water and food and through the faecal-oral route (improperly washed hands after visiting the toilet). Practice safe hygienic practices!

Fun Time 1

Growth of Microorganisms!

Leave a piece of bread / roti / spoon of jam / orange peel in a box for a few days. Observe the changes and discuss in class.
HOW DO MICROORGANISMS GROW?

Most microorganisms “grow” by multiplication. To grow, they need the following:

1. **FOOD**: Microorganisms need nutrients such as carbohydrates, proteins, fats, minerals and vitamins for their growth. They grow rapidly in protein rich food such as milk, meat, poultry, and leftover moist cooked food if other conditions for growth are favorable.

2. **WATER**: Water in the liquid state is essential for the existence of all living organisms. When water is removed from food by drying, the chances of spoilage are reduced.

3. **TIME**: Microorganisms need time to grow to numbers large enough to spoil our food. During favorable conditions bacteria multiply by dividing into 2 every 20 minutes.

4. **TEMPERATURE**: Microorganisms grow best in the temperature range of 5° C and 63° C. This temperature range is called the ‘Danger Zone’ because it poses danger to our health as microorganisms grow very fast within this range. The temperature in our classroom, in the kitchen and in our body lies in Danger Zone. The time and temperature for which food remains in this zone should be controlled.

5. **pH**: It is a measure of whether or not a solution is acidic, alkaline or neutral in reaction. Most microorganisms grow best at a neutral pH of 7. Molds and yeast grow in food with an acidic pH of 4, while bacteria do not grow in acidic foods.

6. **OXYGEN**: Most microorganisms need oxygen for growth. Microbes which need oxygen are called aerobes, while those who do not need oxygen are called anaerobes.

**“WATCH THEM GROW”**

**Fun Time 2**

**Doubling of Microorganisms!**

Demonstrate microbial growth by using dried beans, pebbles or other objects. As an example of quick growth start with one object, in 20 seconds make it two objects, in another 20 seconds make it 4 objects and in another 20 seconds make it 8 objects and so on. (double the number of objects you have every 20 seconds). Please note that 20 seconds is used instead of 20 minutes so that it is possible to show how bacteria grow during a classroom session.

**Fun Time 3**

**Microorganisms in Food!**

Discuss foods (lunch box meals, street foods etc.) that do and do not provide ideal conditions for growth of microorganisms. Salads, boiled rice, pasta, paneer roll, aloo tikki, fruit juice, sprouts
Some microorganisms are useful whereas many are harmful because they can cause food spoilage and food borne diseases. Thus, the objective is to reduce their numbers or completely remove them from food. They can be controlled by maintaining a temperature control.

### How to Control Growth of Microorganisms?

Some microorganisms are useful whereas many are harmful because they can cause food spoilage and food borne diseases. Thus, the objective is to reduce their numbers or completely remove them from food. They can be controlled by maintaining a temperature control.

#### Temperature Control

- Boiling Water: 100°C
- Cooking Temperature: 74°C
- Hot Holding Temperature: 63°C
- Chill Temperature: 4°C
- Frozen: -10°C

### Keep Food Out of the Danger Zone

Cooked food should not be left at the temperature more than 2 hrs.

### Keep Hot Food Hot

### Keep Cold Food Cold

### Fill in the blanks with the correct answer.

Infections, wastage, two microorganisms, reheat.

**Write the correct words from the box in the gaps:**

1. Bacteria multiplying by dividing into ______ every 20 minutes.
2. Keep hot food hot during mealtimes and ______ leftover food well.
3. Microorganisms spoil our food and cause ______ of food.
4. Disease causing ______ are spread through food, fingers, faeces, fomites and flies.
5. Frequent ______ affect our health and appetite.

### Answers

1. two  2. reheat  3. wastage  4. microorganisms  5. infections
Ensuring food safety is essential for preventing foodborne diseases.

Bacteria, viruses, yeasts, moulds and parasites are all microorganisms.

Microbes are present everywhere and need to be kept in check.

Microbial growth in food can be controlled by controlling time and temperature.

Now you know!

Controlling temperature: Bacteria grow (multiply) best in the danger zone, i.e., temperatures between 5°C and 63°C. They can be controlled by controlling time and temperature.

Low temperatures: In a refrigerator, and freezer temperatures, bacterial growth slows down and most bacteria become dormant. They do not die.

High temperatures: When food is heated to high temperatures, most bacteria are destroyed. However, spores may survive normal cooking temperatures.

Removing oxygen – Aerobic bacteria die when oxygen is removed, i.e., when food is vacuum packed and canned. Anaerobic bacteria, if present, can grow in tinned foods.

Adding chemical preservatives – Preservatives are added in permitted amounts to tomato sauce and fruit-based squashes to extend their shelf life and prevent microbial spoilage.

Reducing the moisture content – The moisture content of foods like milk is reduced by evaporation and dehydration to increase the shelf life. Sugar and salt bind water and make it unavailable to microbes. They are added to jams and pickles to preserve them.

Exposure to ultraviolet rays – Sunlight has ultraviolet rays which are lethal to bacteria. Ultraviolet rays are useful in sterilizing the surface of food and equipment. Ultraviolet lamps can be used as well.
Microorganisms that cause food borne illnesses are found in our body. These microorganisms are spread to food mainly through the hands and nails of the person or by coughing or sneezing. If we maintain good personal hygiene, the chances of microorganisms entering our body are reduced.

Good Personal Hygiene should therefore become a habit.

**NEED FOR PERSONAL HYGIENE**

Microorganisms can spread up to a radius of 1 metre or more.
An average of 100000 bacteria can be found on each square centimeter of human skin!
When the moisture from small droplets evaporates, microorganisms like bacteria or viruses remain suspended in the air.
‘Clean’ means free from visible dirt whereas ‘Hygienic’ means free from disease causing organisms!

**NEED FOR PERSONAL HYGIENE**

It is the habit, or practice of keeping oneself clean, especially as a means of maintaining good health. It includes personal cleanliness, maintenance of health, prevent spread of disease through disease.

Personal hygiene includes all personal practices which need to be followed to keep our body clean and healthy. The following practices should be followed every day:

- **Fun Time 5**
  Need for Personal Hygiene

* Collect different water samples and observe them physically under the microscope.

**SNF ALERT!**

Germs are everywhere...
- Germs accumulate around cuts, wounds & sores
- Minor cuts wounds should be washed properly with soap & water.
- Stay at home in case you are sick & suffer from contagious diseases such as viral fever, common cold, measles, chicken pox.

Did You Know?

- Micro organisms can spread up to a radius of 1 metre or more
- An average of 100000 bacteria can be found on each square centimeter of human skin!
- When the moisture from small droplets evaporates, microorganisms like bacteria or viruses remain suspended in the air.
- ‘Clean’ means free from visible dirt whereas ‘Hygienic’ means free from disease causing organisms!
Let’s check your Germ-Score

**GOOD HYGIENE HABITS (SCORE CARD)**

- I bathe everyday.
- I take a bath even when I have a cold.
- I brush my teeth twice daily.
- I clean my tongue with a tongue cleaner.
- I visit the toilet daily.
- I wash my hands after every visit to the toilet.
- I wear clean washed and ironed clothes.
- I wash my hair regularly and comb my hair daily.
- I clean my nose daily while bathing and do not pick my nose.
- I clip my nails regularly and keep them dirt free.

**GOOD TOILET HABITS (SCORE CARD)**

- I make it a habit to evacuate my bowels every morning.
- I flush the toilet after use and keep the toilet clean.
- I wash hands properly after using toilet, with soap and water.
- I dry hands well using a hand clean hand towel or disposable paper tissue.
- I follow the 20/20 rule for washing and drying hands-20 seconds washing / 20 seconds drying.

**GOOD TOILET HABITS**

Visit the toilet regularly to remove waste from the body. Make it a habit to evacuate your bowels preferably every morning. Flush the toilet after use and wash hands well.

**HAND WASHING**

Our fingers are the main vehicle by which germs are transferred to food. Hand washing helps in reduction and transfer of germs / microorganisms leading to Food Borne Diseases such as typhoid fever, diarrhoea, dysentery and Viral infections!

Don't forget to wash hands….

- Before and after eating.
- After combing or touching hair.
- After using the toilet.
- After handling garbage and waste.
- After blowing your nose, coughing and sneezing.
- After playing with pet animals.
Identify 5 Germi-Check Marshalls from your Class.
Their tasks are:
1. Identify hand washing related issues.
2. Take corrective action.
3. Maintain hand washing records.

Let's find out who amongst us in the class follows good hand washing practices!

<table>
<thead>
<tr>
<th>Student's Name</th>
<th>Before Lunch</th>
<th>After Lunch</th>
<th>After visiting the wash room</th>
<th>After games or PE class</th>
</tr>
</thead>
</table>

Rate the cleanliness in School. Weekly Checklist of School Facilities

- Are adequate hand washing facilities provided in school? Y N
- Are these facilities well maintained? Y N
- Is soap used for washing hands? Y N
- Are hygienic hand drying facilities provided in hand wash area? Y N
- If towels are used are they changed frequently? Y N
- Do children wash hands well with soap before having meals? Y N
- Are finger nails clean, trimmed and unvarnished? Y N
- Are washbasins provided in wash rooms & outside dining area? Y N
- Are hands washed in sinks used for food preparation? Y N
- Are children observed picking nose, scratching head or face? Y N
- Are children encouraged to wash hands after blowing the nose? Y N

PROCEDURE:
1. 8 student volunteers can participate in this activity. One should be the hand washer and one person to be the timekeeper. The washer should be blindfolded and asked to put about one teaspoon of washable paint on the palm of one hand and spread it evenly over both hands, including the backs of the hands and the skin next to and under the fingernails. Allow hands to dry completely about a minute or two.
2. Have the washer wash with just water for 5 seconds. After 5 seconds, have the timekeeper blot dry the washer’s hands by very lightly touching the towel to the skin (don’t rub!).
3. Don’t let the hand washer see his/her hands or give away any hints about how clean they are.
4. Have the second washer wash for 10 seconds with just water, the third to wash for 15 seconds with only water and the fourth to wash with soap and water scrubbing for 20 seconds and more.
5. Using the scoring guide, record the cleanliness on a scoring chart.

Result: Paint washes off completely from hands that were washed for 20 seconds with soap and water.

Materials Required:
- Apron
- Stop Watch
- Sink
- Blindfold
- 1 tube of washable colors
- Towels
- Soap
- Score Card
Dental caries (cavities) is due to breakdown of sugars to acids by bacteria present in mouth. These acids corrode the enamel, destroy hard tooth tissue and cause tooth decay. Dental caries (cavities) need to be prevented because it causes discomfort and pain leading to infection and tooth loss.

To prevent dental caries, the following points should be kept in mind:

• Brush teeth at least twice a day for two minutes with tooth paste.
• Brush preferably after each meals.
• Use a soft tooth brush with a small head to be able to reach all teeth.
• Keep the tooth brush clean and dry after use.
• Use a tongue cleaner to remove bacterial build-up on the tongue.
• Visit a dentist every six months for a check-up or if there is any pain, or discomfort .
• Enjoy a balanced diet. An adequate supply of nutrients is essential for healthy teeth and gums.

Bathe daily to wash away sweat, dirt and body odour. Body odour is caused by bacteria breeding on our body and in unwashed clothes. Change and wash undergarments every day.

Feet should be washed and cleaned properly specially between the toes. Toe nails should be kept trimmed. Hair can be a breeding ground for bacteria if it is not washed and kept clean.

To prevent painful cavities and bad breath, brush your teeth twice a day and gargle after every meal.

Place a tick (✓) beside the correct statements and place a cross (x) beside the wrong statements

1. You can stop the spread of germs by using a handkerchief or a tissue when you cough or sneeze. (   )
2. To prevent painful cavities and bad breath, brush your teeth twice a day and gargle after every meal. (   )
3. If your hands look clean you need not wash them before a meal. (   )
4. A soap tablet is more hygienic to use than liquid soap. (   )
5. To avoid body odour and smell clean, bathe daily, use soap and change your clothes. (   )
6. Regular exercise, rest and some recreation are essential for good health. (   )
10 KEY HYGIENE HABITS

- Wash hands well after every visit to the toilet.
- Have a daily bath to wash away sweat, dirt and secretions from the skin, wash eyes & ears properly.
- Wear clean clothes and clean/footwear.
- Wash and comb hair and keep long hair tied.
- Brush teeth twice a day to remove food particles which get lodged between teeth, and cause tooth decay and bad breath.
- Clean tongue with a tongue cleaner and rinse mouth well.
- Keep nails dirt free and neatly trimmed.
- Clean and apply antiseptic on all cuts, sores and wounds and cover with a waterproof dressing.

SLEEP, RECREATION AND RELAXATION

Did You Know?

- Rest and relaxation revives a person, lessens psychological and physical tiredness and makes them active and alert throughout the day.
- 8 to 10 hours of undisturbed sleep to feel refreshed on awakening.
- Fatigue or tiredness reduces the capacity to concentrate in school.
- Some form of recreation is necessary for a healthy mind. It refreshes the mind just like exercise refreshes the body.
- Pursue a hobby, listen to music, dance and be taken for outings.

Remember the basics of good hygiene that you learnt as a child. Washing hands, covering mouth while coughing, and having regular baths or showers. Good hygiene habits in childhood are a great foundation for good hygiene in the teenage years.
ENSURING FOOD SAFETY

When food is handled hygienically from the farm to the plate, it will retain its quality, nutritive value and would be safe to eat.

For example, if farm fresh perishable fruits and vegetables are not refrigerated, they will lose quality and nutritive value.

Hygienic handling of food is essential to eat to ensure food quality and food safety.

GOOD HANDLING PRACTICES FOR ACHIEVING FOOD SAFETY:

1. Select good quality wholesome food from reliable sources and discard contaminated or spoiled food.
2. Protect food from contamination, including harmful microorganisms, toxins and foreign bodies.
3. Store the food properly in the refrigerator and/or covered vessels and/or closed containers.
4. Discard/remove unsafe/unfit or contaminated foods.

“Food Safety” means an assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.

“Food quality” means the characteristics of food such as appearance, flavor, texture, nutritive value and safety of the food that are acceptable to all consumers.

5 Keys to Safe Food

- Keep Clean
- Separate Raw & Cooked Food
- Cook Thoroughly
- Keep Food at Safe Temperature
- Use Safe Water and Raw Material

“Food Safety” means an assurance that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use.

“Food quality” means the characteristics of food such as appearance, flavor, texture, nutritive value and safety of the food that are acceptable to all consumers.
WHAT IS FOOD SPOILAGE?

“Food Spoilage” is the decomposition and damage caused to food by various agents, making it unsuitable for consumption. Spoiled food is unacceptable due to changes in smell, taste, appearance, texture.

HOW DOES FOOD SPOILAGE OCCUR?

- Microbial action – Growth of microorganisms is by far the most important and common cause of food spoilage. Eg. souring of milk, moldy bread
- Chemical reactions – Eg. Chemical oxidation of fats leading to rancidity
- Physical damage – Eg. bruising of fruits and vegetables
- Presence of contaminants – Eg. stones, grit, glass
- Natural enzymatic changes – Eg. Over-ripening of fruits
- Action of insects – Eg. Grains damaged by weevils, insects, and rodents

CLASSIFICATION OF FOODS BASED ON THEIR SHELF LIFE

- NON-PERISHABLE FOODS
  - Longer shelf life up to 1 year when stored in a cool, dry place
  - Sugar, legumes, whole grains, oil, floors, rice etc.
- SEMI-PERISHABLE FOODS
  - Stay good up to a few weeks or few months when stored in well ventilated cool rooms or fridge
  - Dry fruits, gram flour, vegetables like onions & potatoes and frozen foods
- PERISHABLE FOODS
  - Spoil within a day
  - Milk, meat, fish, poultry and most fruits and vegetables specially green leafy vegetables

WHAT IS CONTAMINATION?

Contamination is the presence of an unwanted constituent, contaminant or impurity, physical body in the food. Anything added to a product during different stages of food chain from farm to table which may cause harm to the consumer is termed a contaminant. Contaminants are classified into three main categories namely:

1. Biological Contaminants

   They include both visible and invisible contaminants in food such as rat droppings, beetles and weevils, insect body parts, flies and worms which can be seen in food as well as invisible contaminants, most commonly, bacteria and other disease causing microorganisms which cause food poisoning or infection.

   For foods of animal origin contamination with disease causing bacteria may occur at the time of slaughter or shortly thereafter; foods such as chicken burgers and hot dogs can also be contaminated by microorganisms from the food handler, equipment or from the environment.

2. Chemical Contaminants

   They include any form of chemical compound, which may contaminate food products and which result in illness or harm to consumers. These may include non-permissible food additives, adulterants, cleaning chemicals, packaging adhesives, inks and refrigerants or chemicals accumulated in food like heavy metals (lead, mercury, cadmium) pesticide residues, veterinary drugs, etc. When food is being grown on the farm it may be irrigated with water contaminated with heavy metals such as lead.

3. Physical Contaminants

   Physical hazards can include a wide variety of contaminants such as glass, metal, bone, shell, hair, etc., which may cause harm to the consumer when they eat the food product.

   When food is being packaged it may get contaminated with hair or jewellery of the person handling packaging machine.
Our food can become contaminated in many ways during its journey from farm to consumer. However, most contamination falls into three categories:

- During growing / Pre harvest
- During production / Post harvest
- During handling while food is eaten / sold

‘Cross-contamination’ is the transfer of germs from one contaminated food or place to another by hands, equipment, or other foods and should be avoided.

**Did You Know?**

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**FOOD-BORNE ILLNESS**

A food-borne illness is a general term applied to all types of illnesses caused by contaminants, of all kind of material present in the food that we have eaten.

It includes

- **Food Poisoning**
- **Food Infections**
- **Food Allergies**

**Food Poisoning**

Food poisoning is an illness caused by toxins present in contaminated food. Toxin is produced during growth of microorganisms in the food. When such food is consumed, the toxin irritates the lining of the gastrointestinal tract causing symptoms such as vomiting, abdominal pain and diarrhoea.

**Food Infection**

Food infection is an illness caused by microorganisms. It occurs when we consume food which contains living bacteria. The bacteria multiply in our body and cause infection. Symptoms of infection such as vomiting, abdominal pain, diarrhea and fever occur when our body reacts to the presence of large number of bacteria.

**Food Allergy**

An allergy is defined as a reaction of an individual to a specific ingredient in food. Some people show abnormal sensitivity to certain foods which are otherwise harmless to most people. Substances which cause allergies are called ‘Allergens’.

**Foods which commonly contain Allergens are:**

- Nuts – Peanuts and all types of tree nuts such as walnut, pistachio, pine, cashew, almonds, hazel.
- Pesticide
- Washing soda
- Stapler pin
- Rat droppings
- Glass
- Hair
- Milk and milk products
- Soya and its products like tofu, bean curd, soya milk
- Eggs
- Fish and sea food
- Wheat
- Sesame seed, mustard, and celery
- Chilies
- Tomatoes
- Brinjal
- Mushrooms
- Barley
- Oat
- Rye
To ensure an allergen free meal or snack while eating out, check the following:

- Are the food handlers using different and clean utensils (including knives and spatulas), containers, cutting boards, and serving utensils for preparing foods?
  For example, for a peanut allergy: Just wiping off a knife used to spread peanut butter is not enough. A clean separate knife should be used for the next ingredient. The same holds true for cleaning a blender after making a shake with peanut ingredients.

- Are they using different cooking oils to fry allergenic and non-allergenic foods? Deep-frying does not destroy allergens.
  For example, for seafood allergy: Different cooking oil in a clean frying pan should be used to deep fry shrimp rather than what was used to make French fries or other foods.

- Is the food being served on a separate plate with a different serving spoon?

- Do you know all the “hidden,” allergenic ingredients in a dish?
  For example, for a tree nut allergy: Cashew nuts added to a muffin batter or a breading mix may go unnoticed by allergy sufferer.

Friends of Team Sehat have something to share about food allergies.

“I am allergic to peanuts. I get really sick so everyone in my class knows not to bring peanuts to school in case I get near any”. Tarun

“I can’t have cow’s milk so I have soy-milk”. Jai

“I can’t have wheat because it makes me sick. It’s a bit sad sometimes when everyone is eating cakes at a party and I can’t have any, but I can eat rice, corn and oats”. Twinkle

“If I have seafood I swell up and can’t breathe well, so I have to be careful”. Tanisha

“I can’t eat eggs so I have to watch out for anything that has eggs in it”. Anubhav

Did You Know?

- Proper food handling is the key to foodborne disease prevention!
- Foodborne illness is the primary food safety concern!
- For infants, the sick, pregnant women and the elderly, the consequences of foodborne disease are usually more severe.
When dad came home at 8:00pm, the food was still out on the kitchen table. Dad was so hungry that he ate the leftover chicken curry without bothering to heat.

We quickly ate chicken curry & roti and went to the mall to buy Daddy’s birthday gift.

In all this hurry, chicken curry was left out on the table.

About an hour after eating the food, Dad’s stomach started feeling queasy. He decided to sleep early and thought he would feel better. During the night, he woke up with bad stomach cramps, and he starting throwing up and went frequently to the bathroom. The next day, we drove him to the doctor.

Dad told the doctor about the food he ate last night that was left on the table. The doctor said he probably got sick from the food.

On Saturday, frozen chicken from the freezer was used to cook chicken curry for lunch.

You cannot tell if food is still safe just by looking at it because you can’t see, smell, or taste harmful bacteria. Thaw frozen food before cooking, refrigerate cooked food within 2 hours after cooking and reheat leftovers well.

“What caused the problem was dangerous bacteria that grow very fast on perishable food left out of the refrigerator for more than 2 hours.”

“About an hour after eating the food, Dad’s stomach started feeling queasy. He decided to sleep early and thought he would feel better. During the night, he woke up with bad stomach cramps, and he starting throwing up and went frequently to the bathroom. The next day, we drove him to the doctor.”

“A Story - Chicken got left out!”
How to prevent Food Borne Illness and Make Food Safe?

Among the various factors involved in foodborne illness, improper handling or storage temperatures rank as major factors contributing to the outbreaks of diseases. In addition, poor personal hygiene of food handler and improper cooking and storing temperatures are responsible for a significant number of outbreaks. Food Borne Diseases are entirely preventable and can be prevented by practicing the 7C’s:

1. **CHECK**
   - Raw Material Quality
   - Packaged food Quality
   - Temperature of frozen food

2. **CLEAN**
   - Packages, tins, bottles
   - Fruits and vegetables
   - Plates, glasses and spoons

3. **COVER**
   - Food in preparation area
   - Food in refrigerator
   - Food during service

4. **COOK**
   - Thaw frozen foods correctly.
   - Food is cooked thoroughly.
   - Taste, aroma and color of food.

5. **COOL/CHILL**
   - Perishable food is cooled within 1.5 - 2 hrs
   - Food is refrigerated/frozen within 1.5 -2 hrs

6. **CONSUME**
   - Food is served in a clean environment.
   - Crockery and cutlery is clean
   - Hot food is above 63°C
   - Single service items are not reused.
   - Plate waste and plastic waste is segregated.
   - Potable water is available.

7. **CURB CROSS CONTAMINATION**
   - Handlers wash hands well.
   - Separate chopping boards and knives are used for raw, cooked, vegetarian and non-vegetarian.
   - Store raw food below cooked food.

Answer key: 1. Infected food 2. Food Infection 3. Store in refrigerator 4. Proper heating

Answer key: ⭐⭐⭐⭐⭐
Reading food labels is necessary because it tells us what we are purchasing in terms of nutritive value, safety & cost. It helps us make an informed selection.

Information to be displayed on the label includes:

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Poisoning</td>
<td>Trichinella</td>
</tr>
<tr>
<td>Food Infection</td>
<td>Botulism</td>
</tr>
<tr>
<td>Allergy</td>
<td>Tree Nuts</td>
</tr>
<tr>
<td>Worm Infestation</td>
<td>Hepatitis A</td>
</tr>
<tr>
<td>Food Spoilage</td>
<td>Curdled Milk</td>
</tr>
<tr>
<td></td>
<td>Pasteurised Milk</td>
</tr>
</tbody>
</table>

Answer:

Reading food labels is necessary because it tells us what we are purchasing in terms of nutritive value, safety & cost. It helps us make an informed selection.

**SNF ALERT!**

We take extra precautions to avoid the risk of foodborne illness. You should do it too.

- Do not ingest raw sprouts, raw (unpasteurized) milk, and products made with unpasteurized milk.
- Do not eat raw or undercooked meat, eggs, fish, and shellfish.

**Nutritional facts need to be displayed on the label. In India it is mandatory that the label should mention total carbohydrates, sugar, fat, protein and energy.**
KNOW WHAT YOU BUY

FUN TIME 14
Visit nearest supermarket & check labels of at least 6 of your favorite foods!

• Are number of servings mentioned on the label?
• How many grams of sugar is present in one serving?
• How many grams of fat does the food contain per serving?
• How much saturated fat is present in one serving?
• How many grams of salt does the food contain per serving?
• Does the food make any special nutritional claims?

STORE IT RIGHT

FUN TIME 15
Draw the food in the correct place in the empty refrigerator given below.

SNF ALERT!
You should store food in the right container, in the right place, at the right temperature, for the right length of time. Foods maintain their quality, safety, and nutrients when they are stored properly and consumed within a certain time.
**NEED FOR HYGIENIC SURROUNDINGS**

Poorly maintained or dirty surroundings can provide hiding places for pathogens that can then contaminate food products. Remember, safe food products cannot be made in an unsafe surrounding.

Cleanliness and Personal hygiene provides a clean school environment for the students to keep them safe and in good health.

- Keep class rooms, playground, canteen and school premises clean.
- Don’t throw paper, chalk, pencil shaving, lunch leftover or any other waste material in the class room and playground.
- Throw all waste material in the appropriate dust bin in order to dispose the waste properly.
- Don’t use non-recyclable plastic packets and plastic cups.
- Maintain cleanliness in toilets.

**Essential Hygiene requirements follow the Checklist**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>PARAMETERS</th>
<th>YES / NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Location of Establishments</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the design and layout conducive to good hygiene practices?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is it located away from environmentally polluted areas and industrial activities?</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Utensils used for cooking and serving</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is it made of non-corrosive/non-toxic material such as stainless steel?</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Internal structures and fittings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do the floors allow adequate cleaning?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the windows fitted with removable and cleanable insect-proof screens?</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Air quality and ventilation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the establishment have adequate means of natural or mechanical ventilation?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is the air free from food odours, cooking fumes and smoke?</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Lighting</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Does the establishment have adequate natural or artificial lighting?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Are the lighting fixtures well protected?</td>
<td></td>
</tr>
</tbody>
</table>

Remember, if we want India to be a clean and healthy place to live we should first keep our house and surroundings clean.
**KEEP IT CLEAN**

We like our homes neat and clean, but what about our surroundings? How many of us actually make an effort to clean our community or have stopped someone from littering.

1. **Stop littering and sort garbage properly**
   Don’t litter your streets, your society, the woods, the water bodies, or your surroundings. Dispose waste in dustbin only. Sort it into Green - Biodegradable and Blue - non-biodegradable.

2. **Maintain hygiene**
   By maintaining hygiene both inside and outside our home, we immediately stop the breeding spots pests etc. that spread diseases.

3. **Re-Use and Re-Cycle**
   Reuse and recycle is the magic mantra in creating cleaner surroundings. If there is something that you don’t need anymore; find another way of using it, if not then find someone who might need it; if it’s broken then try to fix it before disposing it off.

4. **Reduce air pollution**
   We burn a lot of fuel in our vehicles if the vehicle is not well maintained it can cause even more air pollution. Use public transport or car pooling, don’t burn garbage, dry leaves, etc. to reduce air pollution.

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**FUN TIME 16**

Check list for maintaining essential hygiene requirements at school (classrooms, canteens etc.)

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**FUN TIME 17**

Put a ✓ tick mark on the correct statements

1. Floors and walls in kitchens need not be tiled. (x)
2. All windows in a kitchen should have removable and cleanable insect-proof screens. (✓)
3. There should be no cracks and crevices in equipment and work surfaces. (x)
4. Work table tops in a kitchen should be made of aluminium. (✓)
5. Food preparation area should be away from garbage dumps. (✓)

---

**NOTE**

Effective cleaning and sanitation programs are required to achieve an adequate level of hygiene. A clean surface is free from visible food residues or particles, feels non-greasy to the touch and has no unpleasant odour. An effectively cleaned surface should also be virtually free from food allergens and pathogenic microorganisms.

The six basic steps for routine cleaning and sanitizing of dishes are:

**Step 1:** Pre clean: Food waste is scraped off, pre rinsed and soaked if necessary.

**Step 2:** Wash: This step involves applying detergent and water.

**Step 3:** Rinse: Food debris and detergent residues are removed preferably using hot water.

**Step 4:** Final rinse and sanitize: Hot water, steam or chemical solution are used for final rinsing.

**Step 5:** Dry: Dishes are air dried or manually dried.

**Step 6:** Clean dishes are kept away from contamination.

---

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---

**SNF FUNDA**

The space for eating should be neat and clean, it is best to avoid durries in the feeding area. Children should wash hands with soap before eating (provision of soap should be made at the school). Nails should be trimmed. It is preferred that children eat with a spoon. Safe drinking water should be available.
In India, Street Foods form a significant part of the daily diet and have a major influence on health and well-being of youngsters, especially young workers and students. Nutritive value and hygiene of these foods is usually neglected or compromised.

**PEST CONTROL**

Any animal, plant or microorganism that causes harm or damage to people or their food, animals, or destroys their crops is called a pest. Insects, mites, ticks (and other arthropods), mice, rats, and other rodents, slugs, snails, nematodes, cestodes/tapeworms are all examples of pests. The presence of pests in food premises is a potential food safety issue because they can cause microbial or physical contamination of our food products. Common pests which need to be controlled are houseflies, cockroaches, rats, lizards, stored grain pests like weevils and beetles, dogs, cats and birds.

Pests can be controlled by good hygiene practices, good sanitation. Inspection of incoming materials and good monitoring can minimize the likelihood of infestation and thereby limit the need for pesticides. The most important parts of pest control are preventing pests from getting into premises and getting rid of their shelter areas and food sources.

**HOW FLIES SPREAD GERMS?**

Flies cannot chew solid food so they vomit on food to liquefy it. They suck up the liquid vomit containing harmful microbes. While feeding they drop excreta which contains pathogens. Fly specks include light drops of vomit and dark particles of excreta. They have sticky hair on their limbs which helps them carry bacteria from one place to another.

**STREET FOOD**

In India, Street Foods form a significant part of the daily diet and have a major influence on health and well-being of youngsters, especially young workers and students. Nutritive value and hygiene of these foods is usually neglected or compromised.

**SNF FACT!**

A survey on Street Foods of Delhi revealed…

Most people are unaware about the health hazards of street foods and find them a convenient and tasty option.

- 18% consume street food on a daily basis
- 50% of the students surveyed prefer street food over other kinds of food
- 38-45% students consume it weekly or monthly
  - 74% buy street food for taste
  - 31% students buy it for convenience and fairly low cost

Did You Know?

Dengue is one of the mosquito-borne diseases, causing nearly 400 million infections and an estimated 20,000 deaths every year. In the past 50 years, dengue has spread from a small number of countries to being endemic in 128 countries, affecting marginalized and wealthy populations alike.
5 Key Concerns about Street Foods

- Unhygienic cooking and serving utensils.
- Raw ingredients are not washed well, especially coriander or mint leaves and salad vegetables.
- Food displayed is open to contamination from dust, dirt, flies, customers etc.
- Food is prepared in bulk, many hours in advance and remains in the Danger Zone (5°C-63°C) for long hours.
- Lack of basic infrastructure and services, such as potable water supplies.
- Personal hygiene is poor and vendors are mainly illiterate and therefore do not understand the value of hygiene. No hand washing before handling food, serving food with bare hands, unclean hair and nails are common phenomenon.

SNF STREET FOOD PATROL CHIEFS

You are the SNF Food Patrol Chief, check the street food vendors around your home and grade them on the basis of the following:

1. Location of the food stall (far from source of contamination like open drains, toilets, garbage, waste water etc.).
2. Food Service Personnel's Hygiene (nails, hair, clothes etc.).
3. Clean cooking and serving utensils.
4. Quality of Raw material.
5. Food displayed is open to contamination from dust, dirt, flies, customers etc.
6. Time and temperature of Food preparation and storage of cooked food.
7. Cold storage facilities.
8. Maintaining Food Service Standards eg. Wearing gloves while serving panipuri.
9. Quality of water used not only for cooking but also to wash utensils.
10. Best practices followed while using raw materials, authorized colors and cooking medium (fat/oil).
Did You Know?

Food is susceptible to contamination at all stages of the food chain. Raw materials are important for the safety of street-vended food because of the biological, chemical and physical hazards that may be introduced to the vending operation and which may persist through preparation and processing.

What are Single service items / Disposables?

- Single service items or disposables are made of plastic, paper, thermocol, aluminium foil.
- They include glasses, plates, cups, bowls, straws, containers and utensils.
- They are convenient to use especially when cleaning and sanitizing facilities are not available. These should be food grade only.
- They must be stored in much the same manner as crockery and cutlery.
- They are designed to be used only once and then crushed, discarded and recycled.

How should you ideally dispose off the following single service items?

1. Plastic water glasses – (Crush/Recycle)
2. Thermocol glasses – (Vermi-compost/Biogas)
3. Plastic spoons – (Recycle/Throw)
4. Aluminium disposable cartons – (Collect separately/Crush/Recycle)
Waste can be almost anything, including waste food, leaves, newspapers, bottles, construction debris, and chemicals from a factory, wrappers or radioactive materials. Waste management is the collection, transportation, disposal or recycling and monitoring of waste. Recycling and composting, which transform waste into useful products, are forms of waste management. A primary objective of waste management is to protect the public and the environment from potentially harmful effects of waste. Education and awareness on waste management is very important, for the perseverance of global health and security of mankind.

**Significance of waste disposal**

- Waste must not be allowed to accumulate in food handling, food storage and other working areas and the adjoining environment.
- Suitable provision must be made for the removal and storage of waste.
- It should be disposed off regularly and efficiently to prevent contamination of food products.
- The waste should be segregated before being disposed.

**The three preferred options for disposal of food waste are:**

- Vermiculture
- Recycling
- Treat for the production of biogas

**How is vermicomposting done?**

- A special breed of earthworms feeds on garbage and breaks it down in its gut into simple substances which can be easily assimilated by plants.
- It conserves the humus of the soil through its excreta which is a highly enriched manure containing hundreds of earthworm cocoons to continue the process.
- The burrowing action of the earthworm tills the soil ten times deeper than the traditional plough.
- Fruits and vegetables grown on such soils are healthier, tastier and more nutritious than those grown on farms fertilized by chemical fertilizers.
- Such foods are called ‘Organic’ and fetch a higher market price.

The peels, stalks, seeds and other inedible or spoilt portions of food can ferment, attract flies and give off a foul odour, if it is not disposed of immediately. This organic waste or biomass is bio-degradable and nutrients in the waste can be returned to Mother Nature by a simple process called Vermicomposting.
Vermicomposting

- Take a small wooden box or dig a small pit.
- Spread a net on your box.
- Spread 1 or 2 cm thick layer of sand.
- Put some kitchen waste (fruit peels, vegetable waste, used tea leaves etc) to cover the sand.
- Use green leaves to cover the sand.
- Sprinkle some water to make this layer wet.
- Add red worms.
- Loose, soil like material will be formed in the pit after 3-4 weeks.
- Remove the material from the box & dry it in the sun.
- Your manure is ready.

Materials Required: a pit or a medium sized bin, a handful of vermi-castings, brickbat soil, garden waste, food waste
NEED FOR NUTRIENTS

To stay healthy our body needs a variety of nutrients which can be obtained from the food we eat.

Nutrients are chemical substances found in food. They perform a variety of functions in our body. Different nutrients are found in different foods. Our body needs nutrients to:

- Provide us energy.
- Help us grow and repair worn out tissues.
- Protect us against infections.
- Regulate basic body functions.

We eat food not nutrients. The effect on our health is based on the combination and the proportion of nutrients that we get from food.

MACRO NUTRIENTS

Carbohydrates, proteins and fats are macro nutrients (macro means large). These nutrients are needed in relatively large amounts in the diet as they provide our bodies with energy. These are the building blocks for growth and maintenance of the body.

Vitamins and minerals are micro nutrients, these are essential nutrients our body needs in small amounts to work properly.

Although water is not always included in the strict definition of a nutrient, it is essential for health and life.

The Energy in Foods

Do you have enough energy?

When we eat and drink, we are putting energy (measured in kilojoules/kilocalories) into our bodies. The amount of energy we need depends on the amount of physical activity. To maintain a stable weight, the energy we consume through food must be the same as the energy we use for normal bodily functions and physical activity.

What are the energy sources in the diet?

1. **Carbohydrates** are an essential source of energy in our diet.

2. **Fats** give more than double amount of the energy than carbohydrates and hence should be eaten in small amount. These include: butter, ghee, cooking oil and food rich in fat like cheese, meat, fried food etc.

3. **Protein** is also a source of energy. Its main function is to help build body tissues.

Macronutrients: Carbohydrates, Protein and Fat

**A STARCHY FOODS “CARBS”**

Starchy foods are often referred to as ‘carbs’ (carbohydrates) and include foods like wheat, bread, rice, potatoes, breakfast cereals, oats and other grains like rye and barley.

In a healthy, balanced diet starchy foods are the main source of energy. When starchy foods are digested, they are broken down into glucose, which is the main fuel for the body, especially for the brain and the muscles. Starchy foods can also provide fibre, which is important for digestive health, and a range of vitamins and minerals including B vitamins, iron, calcium and folate.
EVER WONDERED?

How do we use our energy?

Any physical activity, such as walking, running or playing sport, utilises energy. Different activities use up different amounts of energy, so if you are physically active, follow the healthy eating guidelines below:

Healthy eating tips for physically active people:

- Eat plenty of starchy foods, such as roti, bread, rice, pasta and cereals, choosing whole grain versions whenever possible.
- Eat lots of fruit and vegetables.
- Eat plenty of dairy and protein rich foods, such as milk, paneer, curd lean meat, fish, poultry, nuts, eggs and pulses.
- Limit your intake of food and drinks high in fat, sugar and salt.
- Drink plenty of fluids.

B PROTEINS

Protein is essential for growth and repair and keeping cells healthy. Protein also provides energy: 1 gram of protein provides 4 kcal (17 kJ). They are made up of building blocks called amino acids. Different foods contain different amounts and different combinations of amino acids. Protein from animal sources (e.g. meat, fish, eggs and dairy products) contains the full range of essential amino acids needed by the body. Protein from plant sources (e.g. pulses and cereals) typically contain fewer essential amino acids.

Sweet Food Choices

Do You…… Always (4 pts.) Usually (3 pts.) Some Times (2 pts.) Never (1 pt.)

• Reach for fruit as a snack, rather than candy?
• Drink juice or milk, rather than aerated soft drinks?
• Top your cereal with fruit instead of or along with sugar?
• Sweeten or toast with fruit, rather than just jam or syrup?
• Top ice cream with fruit, not just chocolate or caramel syrup?
• Order juice or milk with a fast-food meal or snacks, such as a burger meal?
• Choose fruit for dessert, not a rich, high-calorie dessert?
• Go for the smaller rather than the bigger slice of cake?
• Snack on two or three cookies/biscuits with milk, rather than simply eat five or six cookies/biscuits?
• Make hot cocoa with milk, not just water?

If you scored……

30 or above. Your “sweet” choices are mostly high in nutrients, too. In fact, enjoy a bit of sugar now and then to add pleasure to eating.
20 to 29. Your overall diet is balanced and you’re not overspending your calorie budget, your preference for sweets is probably okay.
10 to 19. Your “sweet tooth” may prove to be expensive in terms of fitness and tooth health.
Nutrients and their sources!

- Choose low fat varieties of milk, curd and cheese
- Use mayonnaise and high fat spreads sparingly
- Eat less of unhealthy fats used in confectionery, pastries, cakes and biscuits.

Did You Know?

Certain fats are considered essential, specifically two fatty acids—linoleic and alpha-linolenic acid—which our body can't make. (Fatty acids are the building blocks of fat.) For children to grow normally and to stay healthy skin, food must supply both these fatty acids.

C Fat

Everyone needs a certain amount of fat each day to stay healthy. When you think of fat it’s important to think of the right type and the right amount. Healthy fats are found in foods such as vegetable oils, oily fish, nuts and oils seeds. Foods containing less-healthy fats include chips, pastries and fried foods. Limit their intake.

Nutrients and their sources!

- Give few examples of sources of protein in your breakfast.
- Give few examples of sources of starch in your lunch.

Fun Time 22

How to cut down on unhealthy fats?
**MICRONUTRIENTS**

**WHAT ARE VITAMINS?**

- Vitamins are the nutrients required by the body in small amounts, for a variety of essential processes.
- Most vitamins cannot be made by the body, so they need to be provided in the diet.
- Vitamins are grouped into fat-soluble vitamins and water-soluble vitamins.
- Requirements for vitamins change across different stages of life.

**Fat Soluble Vitamins - A, D, E and K**

Vitamin A is found as retinol in liver and whole milk. Beta-carotene is present in dark green leafy vegetables, carrots and other orange coloured fruits and vegetables. It can be converted into retinol by our body for its use.

Vitamin D is made by the body in the skin when exposed to sunlight.

Vitamin K helps in blood coagulation. It is found in green leafy vegetables.

Vitamin E is an antioxidant and is required to protect cells against oxidative damage. Good sources are nuts, seeds, wheat germ and oils.

**Water soluble vitamins - B and C**

There are a number of vitamins. Regular intake of each is essential as each has specific functions in the body. They are:

Vitamin B1 (Thiamin); Vitamin B2 (Riboflavin); Vitamin B3 (Niacin); Vitamin B6 (Pyridoxine); Vitamin B12 (Cyanocobalamin); folate; pantothenic acid and biotin. Another water soluble water is vitamin C.

Vitamin C is needed for:

- The normal functioning of the immune system;
- The protection of cells from oxidative damage.
- Formation of a protein called collagen which is important for maintaining normal blood vessels, bones, cartilage, gums, skin and teeth.

**WHAT ARE MINERALS?**

Minerals are inorganic substances required by the body in small amounts for a variety of functions. These include the formation of bones and teeth; as essential constituents of body fluids and tissues; as components of enzyme systems and for normal nerve function.

Some minerals are needed in larger amounts than others, e.g. calcium, phosphorus, magnesium, sodium, potassium and chloride. Others are required in smaller quantities and are sometimes called trace minerals, e.g. iron, zinc, iodine, fluoride, selenium and copper. Despite being required in smaller amounts, trace minerals are as important as other minerals.

Eating a varied diet will help ensure an adequate supply of most minerals for healthy people.

Did You Know?

Vitamin C can help with the absorption of iron from plant foods when it is consumed at the same meal.
LOOK AFTER YOUR BONES!

How strong and dense your bones become is decided by your diet and physical activity. Calcium and vitamin D are the nutrients that help your bones to develop. There are many good sources of calcium to choose from with milk and dairy foods being the best source, but sardines, dark green leafy vegetables, dried beans, nuts and ragi are good sources too.

Other ways to keep your bones strong are:

- Remember to avoid smoking
- Take regular exercise like swimming or walking, cycling or play a sport

Here are some tips for getting dairy products into your diet:

- Have a glass of milk orlassi with cereal or breakfast.
- Include a slice of cheese in your sandwiches.
- Have a yoghurt/curd with your lunch.
- Drink a glass of milk everyday.
- Have a milk-based dessert, e.g. rice kheer or custard made with low fat milk or a curd dessert.

Did You Know?

Toned and skimmed milk, cheese and curd contain just as much protein, vitamins, calcium and other minerals as the full fat versions. They are lower in fat. Many teenagers think milk is fattening but the fact is it is not a high fat food. If you want to reduce fat in your diet then opt for low fat milk and milk products dairy options.

Did You Know?

If you feel thirsty, then you’re already a little bit dehydrated. Stay ahead of the game - fill up a bottle of water to take to school with you each day. Remember to drink extra fluids before and after sports.

DRINK PLENTY OF WATER!

We all need between six to eight glasses of water or other fluids each day to keep us alert and properly hydrated. When you’re dehydrated you feel tired or sluggish - not a good idea when you’re expected to concentrate in class for hours at a time! Tea and coffee can count as your fluids too, but they contain caffeine which can dehydrate the body. Water and milk are the healthier options.

To increase your water intake:

- Take frequent water breaks during the day
- Complement food with water or beverages like lemonade, juice etc. Occasionally, start your meals with soup.
- Before, during, and after any physical activity, drink water, especially in hot weather. Always carry a water bottle with you.
- Consume water every fifteen to twenty minutes while you exercise. Don’t wait until you feel thirsty!
- Keep a bottle of water with you when you travel, while at school etc.

Did You Know?

If you feel thirsty, then you’re already a little bit dehydrated. Stay ahead of the game - fill up a bottle of water to take to school with you each day. Remember to drink extra fluids before and after sports.
SODIUM IS ESSENTIAL TO HEALTH!

Sodium is an essential mineral for good health. Some of the most basic work your body does depends on sodium: transmitting nerve impulses and helping your muscles, including your heart muscle, relax.

Did You Know?

Most sodium that we consume comes from processed or prepared food, not from the salt shaker at the kitchen table. Eating too much sodium is not good for health. High sodium intake has been linked to high blood pressure.

“IRON MAKES RED BLOOD CELLS”

Your body needs iron to make red blood cells. Red blood cells are needed to take oxygen to all parts of your body, making iron one of the most important minerals in our diet. Lean red meat and organ meats (liver) are the best sources of iron. Other good sources are eggs, green leafy vegetables, nuts, pulses (like peas, beans or lentils) and fortified breads and breakfast cereals (check the labels). Iron from animal foods is absorbed much better than plant food sources.

Did You Know?

When your body has enough iron, you feel energetic and well. But people who are low in iron feel tired, are short of breath and look pale.

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Did You Know?

When your body has enough iron, you feel energetic and well. But people who are low in iron feel tired, are short of breath and look pale.
Zinc is another essential mineral! Zinc is essential for growth and sexual maturation. Zinc can be obtained from foods like meat, poultry, beans, nuts, whole grains and seafood.

Vegetarian Diets

Around a quarter of the world’s population consumes a vegetarian diet. Like non-vegetarian diet, vegetarian diet also needs to be well balanced.

Include rich sources of three vital nutrients namely, protein, iron & vitamin B12 in a vegetarian diet. Good quality protein can be obtained from milk & milk products or by a combination of cereals & pulses (eg roti/rice with dal, khichri, etc) Iron from plant sources should be eaten with foods rich in Vitamin C for increased absorption. Vitamin B12 is present only in foods from animal sources. Vegetarians can get B12 from milk & milk products from fermented foods like idli-dosa, dhokla etc.

Other Dietary Needs

Girls – you need even more iron than boys! This is because of your monthly period and because you’re still growing. So be sure to pack in those iron-rich foods every day. Tip 1: Having some vitamin C rich food with your meal helps your body to absorb iron. So try to include some fresh fruit, salad vegetables (like tomatoes) or unsweetened fruit juice with your meals.

Tip 2: Tea and coffee contain polyphenols that make it harder for our bodies to absorb iron. You don’t need to cut them out completely, but try not to have them within 30 minutes of eating your meals.

Did You Know?

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Tip 2: Tea and coffee contain polyphenols that make it harder for our bodies to absorb iron. You don’t need to cut them out completely, but try not to have them within 30 minutes of eating your meals.

Ever wondered?

If spinach will make us strong, as the famous cartoon character Popeye believed? It’s true that spinach contains iron. But another food component in spinach, called oxalic acid, binds with iron, impairing its absorption, so it’s not the best source.

If cooking in an iron skillet improves the iron content of food? It does. Great-great-grandma unknowingly supplemented her family’s diet with iron from her iron pots and pans. Foods with acids such as tomato, lemon juice, and vinegar help dissolve small amounts of iron from the pot into the food being cooked. However, this form of iron may not get absorbed very well by our body.
Take the “shaker test” to find out. Cover a plate or a bowl with foil or plastic wrap. Now pretend your dinner is on the plate—or that the bowl is filled with popcorn. Salt your “food” just as you would if the bowl or plate was full of food. Now measure how much salt you added. If you shook as much as 1/4 teaspoon of salt, you added almost 600 milligrams (0.6 g) of sodium to your meal or popcorn.

Note: Sodium intake should not be more than 2 g per person per day.

How much salt do you typically add to food? Let’s find out!

Nutrients Quiz!
Who am I? Fill in the blanks with appropriate nutrients.

• I serve many functions in the body. I help carry nutrients to the body’s cells and I also help regulate body temperature. I am__________________.
• I can be converted into energy. I am also used to build, maintain and repair body tissues. I am__________________.
• I am the most concentrated source of energy. I am__________________.
• I am the body’s main source of energy. I am__________________.
• I do not provide energy (calories) but I do help regulate many of the chemical processes in the body. I may be soluble in water or fat. I am__________________.
• Calcium, iron, zinc and others like me are important functions in the body. I am__________________.

Our bones take in the most calcium during teen years and early twenties. Calcium gives our bones strength. The best sources are milk, yoghurt, and cheese, and most teens need four servings of dairy foods daily.

• If we don’t eat breakfast, our body is like a computer without power.
• Eating cookies, candy, or other sweet foods & beverages is not the best way to get energy.
• Girls, when you have a menstrual period you lose iron. If you don’t eat iron-rich foods to replace this loss, you may feel weak and tired.
Master and Miss Sehat are a picture of good health. They are friendly, cheerful, helpful and keen sports persons. They have thick bouncy hair, a glowing complexion, beautiful white teeth, sparkling eyes and a good posture. They have good concentration and never seem irritable or restless. They seem to have time for all their activities.

Have you ever wondered how Master and Miss Sehat get all this charm and energy from?

They eat Healthy Foods!

But that is not all. Apart from meals, studies and recreation, they practice personal hygiene, exercise regularly and sleep well at night.

Most of us follow the same routine, but are not particular about when and what we eat and drink. We often skip exercises, make wrong choices or succumb to peerpressure.
SNF FUNDAMENTALS

What are the ABCs for good health?

- A for Aiming for fitness: Aim for a healthy body weight and be physically active through the day.
- B for Building a healthy body: Choose a variety of nutritious, health-promoting foods such as whole grains, fruits and vegetables. Eat safe food.
- C for Choosing sensibly: Choose a diet that is low in fat, sugar and salt.

SNF CASE STUDIES

- Hi! I am Geeta, I wish my hair had more life in it. In spite of brushing it several times and using all possible shampoos and conditioners, it is sparse, dull and lifeless, and falls terribly each time I wash or comb it. I wish I had hair like Ria’s. I must ask her which hair wash does she use? Do you think Geeta’s problem will be solved by changing her hair wash?

- Raju is a shy boy. He avoids the swimming class in school every week as he has a poor physique and is pale and tired most of the time. He thinks of different excuses to avoid games period each time. Secretly, he wanted to make friends with Ria and Rohan and would have enjoyed being in the pool with them. Do you think staying away from the problem will help Raju build his body, gain confidence or feel active and energetic? Let’s help Geeta and Raju.

Geeta and Raju, all cells in our body be it skin, muscle, bone, nails or hair need proteins and zinc for growth, repair and good health. Eat Cereal + Pulse combinations, include some milk/curd in the meal and use processed Soya products like Textured Vegetable protein (TVP) – Nutri nuggets etc. to overcome the deficiency of proteins and zinc.
Let us learn more about deficiencies and how to overcome some of the common symptoms of Deficiency Diseases

1. Do you suffer from Dental caries or painful cavities?

Apart from poor oral hygiene, consumption of foods high in sugars and starches promotes tooth decay. Eating candies, chocolates, chips etc. in moderation, preferably with meals are part of healthy eating. Rinse your mouth thoroughly or brush after eating sticky/sweet food.

2. Are you frequently constipated? Do you drink sufficient water?

Deficiency of fiber causes constipation. Consume Wholegrain cereals, millets vegetables and fruits to prevent constipation. Drink ample fluids in the form of beverages, soups, juices and water. Probiotics (foods containing good microorganisms are good for the intestinal health) Regular exercise may help you too.

3. Do you suffer from pain in the legs and lower back? Are your legs shapely and straight or bowed? Do your bones break/fracture easily?

Vitamin D, Calcium and Phosphorus are required for strong bones. Strong bones are needed to be able to take the weight of our body. Weak bones can bend and get deformed. Drink milk and eat milk products daily. Ragi, green leafy vegetables, drum stick leaves, nuts and oilseeds especially sesame seeds also provide you calcium.

Rama and Sunita are too tired after school. They get breathless after climbing the stairs or playing outdoors.

Rama and Sunita are anaemic. They have low haemoglobin levels, and the oxygen carrying capacity of blood is reduced making them breathless. Deficiency of iron, Vitamin B12 and Folic acid can cause these symptoms. Consume meat, eggs, green leafy vegetables, whole grain cereals and pulses, dates and jaggery to overcome this deficiency.

The glare of the incoming traffic momentarily blinds Radha at night. She has difficulty in reading or seeing things in dim light. Does she need spectacles? What should she do?

Vitamin A deficiency harms our eyes affecting our ability to see clearly in less light. Radha you do not need spectacles, but do make sure you eat yellow orange coloured fruits and vegetables and green leafy vegetables rich in pigment carotene. Carotene is converted to vitamin A in the body. Butter and ghee and whole milk products will help you as well.

OVERCOME DEFICIENCY
Did You Know?

• Scurvy, which plagued seafarers several hundred years ago, was finally cured by stocking ships with lemons, oranges, and limes; hence, British sailors were called “limeys.” Scurvy is caused by a deficiency of vitamin C, a nutrient that citrus fruits provide in abundance. Amla is the richest source of vitamin C!

• Night blindness, caused by a deficiency of vitamin A, was known in ancient Egypt. The recommended cure of the day: eating ox or rooster livers. Today it’s well known that liver contains more vitamin A than many other foods. Milk and its products, dark green leafy vegetables, yellow and orange coloured fruits and vegetables provide Vitamin A.

• Rickets Giving children cod liver oil to prevent Rickets was practiced since the nineteenth century. But it was not until 1922, when vitamin D was discovered, did scientists know what substance in cod liver oil gave protection. Exposure of the body to sunlight is necessary to prevent deficiency of vitamin D.

• Beriberi, a deficiency of thiamin, was noted in Asia as polished, or white rice became more popular than unrefined, or brown, rice. The cure was discovered accidentally when chickens with symptoms of beriberi ate the part of rice that was discarded after polishing. It contained the vitamin-rich germ. Consume whole grain cereals rather than refined cereals.
Did You Know?

It is important to maintain healthy weight in childhood and teen age. This reduces chances of being an overweight adult. Active play, fewer sedentary activities (such as being a couch potato, too much screen time- TV and video and computer games), and healthful eating are the best strategies to a healthy weight.

Protein quality of CEREAL+PULSE = Protein quality of FLESH FOODS

How can nutritional deficiencies be prevented?

Let us see what we need to do to prevent all this from happening.

- Eat a balanced diet with variety of fresh wholesome food. Include whole fruits and ensure some vegetables are eaten raw as salad.
- Include a small quantity of complete protein food in every meal. Complete proteins such as milk, curd, paneer, buttermilk and eggs could be used in small quantities in various preparations like raita, curd rice, kadhi etc.
- Consume cereal and pulse combinations as they complement each other. Essential amino acids deficient in cereals are present in pulses and vice versa.
- Eat probiotics like curds and yoghurt to promote the growth of good bacteria in your gut. Good bacteria can synthesize some vitamins and improve the health of the GI tract.
- Use foods which have been fortified with iron, iodine, vitamin A etc. Read nutrition facts on the label and look out for the fortification logo.
- Follow proper cooking and storage practices to retain the nutrients present in food.
- Use simple measures to enhance the nutrient content of food like using whole grains and steeping and sprouting them, fermenting cereal/pulse batters and using iron utensils to cook food.
Unhealthy foods are those containing little or no proteins, vitamins or minerals but have high fat, sugar and salt (HFSS). Examples of unhealthy foods include: Potato chips, French fries, namkeens, bhaturas, samosas, mithais, candy, soft drinks, cake and chocolates.

Healthy foods help in maintaining good health, support growth and body building. They provide us with essential nutrients like vitamins and minerals. Examples of healthy foods include: Protein rich foods like Milk, lassi, smoothies, omlette, fish, besan chillas, dal, sprouts and salads and fruits.

So Dr. Sara does that mean we should not eat HFSS foods at all?

You can have HFSS foods occasionally and in moderation. They cannot replace a balanced meal. Frequent consumption of unhealthy food because of our changing lifestyle can result in NCD's (Non Communicable Disease).
Prevent NCDs by controlling the key risk factors which are:

- Unhealthy diet
- Physical inactivity
- Use of tobacco
- Use of alcohol
- Lack of oral hygiene

School facilitators should focus on importance of personal hygiene, physical activity and healthy eating. Harmful consequences of tobacco and alcohol consumption should be highlighted. Build a strong and healthy foundation. Keep Non Communicable Diseases (NCDs) away.
We need to eat a balanced diet as:

- It promotes and preserves good physical and mental health.
- It maintains acceptable body weight for height.
- It includes all nutrients in correct proportions.
- It includes a variety of foods.

What's on the Healthy Eating Plate for teenagers?

Local foods, ethnic foods, our favorite foods, fast foods, snack foods, foods which we grow ourselves or buy from the market—foods of every kind fit somewhere within the Healthy Plate! Foods are grouped together because their nutrient content is similar. They promote health and well being. In fact, each of these foods supplies our body with some, but not all, nutrients needed for energy, health and growth. No single food supplies all the nutrients. The healthy plate also depicts foods and drinks high in fat, sugar and salt which are part of teenagers diet but need to be consumed occasionally.

- Whole wheat bread, rice, potatoes, pasta, fortified cereals.
- Fortified Milk and dairy foods
- Fats and Fortified Oils
- Pulses, Legumes, Meat, Fish and Eggs
- Fruit and vegetables
**HEALTHY EATING PLATE**

The healthy eating plate helps you to plan a balanced diet in a simple graphic format.

- The diet should be based on cereal grains, potatoes, other starchy foods and fruits and vegetables (5 A Day).
- A variety of foods from cereals, fruit and vegetables groups are needed, with each group making up one-third of the diet.
- Most of the remaining third of the diet should be made up of milk and dairy foods and meat, fish, eggs, pulses and legumes.
- Only a small amount of foods and drinks high in fat and/or sugar may be included.

Healthy Eating Plate conveys three main messages about eating: variety, balance, and moderation.

- For variety, eat a variety of foods, fruits, vegetables, and grains to get the nutrients you need. No single food supplies all the nutrients, fiber, and other substances our body needs. Variety also adds flavor, interest, and pleasure to meals!
- For balance, eat appropriate amount from each food group every day to get the nutrients that our body needs.
- For moderation, choose foods and beverages to meet your energy needs without too much saturated fat, cholesterol, and added sugars. For example, to moderate fat, opt mostly for lower-fat choices. Eating in moderation helps to achieve or maintain a healthy weight and may protect from health problems such as diabetes, heart disease, and cancer later in life.

Healthy eating should add pleasure to your life!

---

**EVER WONDERED**

- **Why “five a day” is advised for eating fruits and vegetables?**
  Research shows that eating at least five servings of fruits and vegetables a day offers protection from deadly diseases like cancer. By eating more fruits and vegetables you may reduce the risk of overweight, obesity leading to NCDs.

- **What is Portion Distortion?**
  As restaurant portions get bigger, many children are clueless about sensible serving sizes. In fact, Indians tend to underestimate the amount they eat.
  Today’s mega portions promote: “eat until you feel stuffed, not just until you are satisfied.” Adults and kids lose their ability to regulate how much they eat, as they listen less to hunger cues. Overeating leads to overnutrition by consuming excess calories, fat, saturated fat leading to overweight and obesity.

**To overcome portion distortion and to downsize your helpings, try this:**

- Use smaller dishes, bowls, and cups for your meal.

- Remember that meat, chicken, or fish don't need to take the biggest space on your plate. Let vegetables, fruit fill half of your plate.

- Start with small helpings, eat slowly and take a second helping only if hungry.

- Eat from a plate, not a package, so you know how much you eat.

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Healthy eating should add pleasure to your life!
Let’s Colour code our meals!
To paint your plate, toss strawberries in curd. Garnish salad with sliced beet roots. Add corn, tomatoes, spinach leaves in sandwich. Colour offers much more than eye appeal to a wonderful meal! A rainbow of fruits and vegetables creates a palette of nutrients on your plate, each with a different bundle of potential benefits.

Does your Diet pass these tests?
• The “Color Crunch” Test. Try to choose foods with a variety of colors and textures at each meal.
• The “Pie” Test. Think of your plate as a pie & make sure that 50% of the pie is made of fruits & vegetables, 25 % grains and 25% of protein foods like dal / meat / egg with a separate bowl of dairy products in a day’s diet.
• The “Five-a-Day” Test. Five servings of vegetables and fruits each day are important for your good health. Count them as you go along.

HEALTHY LUNCH BOX
A healthy lunch every day will provide you with the energy and nutrients required to grow, develop and learn. The key to a balanced, nutritious lunch box is variety of foods from the following three food groups:

1. **Carbohydrates rich food** – such as any sort of roti, bread, rice preparations or wraps – these foods provide us energy.

2. **Fruit and Vegetables** – these foods provide vitamins and minerals to help protect against diseases.

3. **Protein rich food** - such as dal, sprouts, paneer, cheese, tofu, egg, chicken, fish or peanut butter - these foods provide protein, iron and calcium especially from milk and milk products.
• Skipping breakfast is linked to low achievement and performance. Conversely, a morning meal helps children succeed with learning as they get the required energy. Studies show that breakfast eaters tend to have higher school attendance, less tardiness, and fewer hunger-induced stomach aches in the morning. Their overall test scores are better. And they concentrate better, solve problems more easily, and have better muscle coordination. Children who eat breakfast are less likely to be overweight and more likely to get enough calcium too. Skipping meals does not make good nutrition sense!

• For children, teens, and adults of any age, a healthy weight is the key to a long, healthy, and productive life. What is the smart way to achieve that goal? Try to include mostly nutrient-rich foods such as vegetables, fruit, different grain products, lean meats and dairy foods. Choose sensible food portions, and keep physically active.

• Both, vegetarian or non-vegetarian foods, can supply enough nutrients to nourish, promote health, and help prevent health problems.
Healthy Snack for a healthy Smile

Keep your smile healthy! In fact for everyone, and especially for children, smart snacking can lead to good oral health.

• Overcome the urge to snack frequently. Bacteria in plaque produce acids that can damage teeth in twenty to forty minutes after each exposure to carbohydrates in snacks.
• Choose snacks wisely for a well-balanced eating plan. Eat fresh vegetables, fruits (such as apples), plain yogurt, cheese, milk, and popcorn.
• Even though sugars from hard candy, cough drops, and lollipops may leave your mouth faster than snacks that stick between your teeth, go easy on sugary snacks that dissolve slowly in your mouth.
• Brush as soon as you can after snacking. This removes plaque and so stops the cavity-producing action of bacteria. Or at least rinse your mouth with water to get rid of food particles.

Did You Know?

• A planned snack can help prevent overeating.
• Watching television tends to increase snacking—particularly of high-fat, high-calorie “foods.”
• Larger snack containers add up to more calories. People eat more when the package is bigger!

Let’s Cook

Try these healthy, no-cook snacks. They are easy and fun to make and require little or no adult supervision.

• Fruit and Vegetable Kebabs. Cut raw vegetables and fruit into chunks. Skewer them onto thin sticks. (Note: To prevent discoloration, dip cut apples, bananas, or pears in orange or lemon juice.)

• Veggies sticks with curd. Cut radish, cucumbers, or carrots into sticks. Then dip them into curd.
Get Fit with Friends

Are you looking for something to do? Try these active ways to get fit with a friend and have fun, too.

• Wake up thirty minutes earlier, and take a brisk walk to start your day. Schedule your walk with your friends.
• Do something active: play tennis, cricket or enjoy dancing at a school function.
• Instead of talking on the phone, walk and talk with your friends.
• Join your school or community sports team.
• Take the stairs instead of the elevator or escalator. Walking up stairs is a great heart exerciser, calorie burner and muscle builder!
• Walk around your residence—outside or inside—during your lunch break. You'll burn energy rather than being tempted to nibble on a snack.
• Play actively with your pets. Some dogs like to play with a Frisbee as much as kids do!
• Before and after dinner, walk—and talk—with your family.
• Do some gardening. (Grow vegetables and herbs.)

SNF Funda

• **Banana Pops.** Peel a banana. Dip it in yogurt, then roll in crushed corn flakes and freeze.

• **Fruit Shakes.** Put 1/2 cup low-fat fruit yogurt and 1/2 cup cold fruit juice in a container with a led. Make sure the lid is tight. Then shake it up, and pour into a cup.

• **Sandwich Cut Outs.** Using cookie cutters with fun shapes like stars and hearts, cut slices of cheese and whole-grain bread. Then put them together to make fun sandwiches.
MY DAIRY - DOT TRACKER

Name __________________________________________________________
Class ______________________________ Section _____________________

MY DAIRY CALENDAR

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Stick 1 dot for each dairy serving. Let us see how strong you are.

SOURCE: TOOLS AND TRACKERS - ARNEY'S FITKIDS - PROMOTING HEALTHY CHILD DEVELOPMENT
INSTRUCTIONS

Track your water intake over a week by colouring one drop blue each time you drink a cup of water. (1 cup = 150 ml)

Recommended Daily Amount of total water intake (including other beverages)

- 5-6 cups for 4 to 8 years
- 7-8 cups for 9 to 12 years
- 8 to 10 cups for 13+ years

INSTRUCTIONS: Put a tick against the food item eaten in a day. You can put more than one tick in the same box if the food has been consumed more than once. See example given.
**MY UNHEALTHY FOOD TRACKER**

**INSTRUCTIONS**
Each numbered band indicates one day of monthly calendar. Match and tick the colour of the food group consumed in the day on the tracker. Ensure the consumption of unhealthy food goes down daily.

**UNHEALTHY FOOD EXPLAINED**
Unhealthy is defined as "any food, which is low in essential nutrients and high in calories and sodium. These foods contain little or no proteins, vitamins or minerals but are high in salt, sugar, fats and are high in calories.

**MY HYGIENE TRACKER**

Name _____________________________
Class ______________________________ Section ___________________

- **BRUSH TEETH**
  - Morning
  - After Big Meal
  - At Bedtime
- **BATHE**
  - Morning
  - After Play
  - Before Bedtime
- **CHANGE CLOTHES**
  - After Bath
  - After School
  - Before Play
  - Before Bedtime
- **WASH HANDS**
  - Before Brushing
  - Before any Meal
  - After any Meal
  - After Play
  - After visiting the washroom
  - Before Bedtime

**INSTRUCTIONS**
1. Work on your tracker by slaying the germs with your pencil.
2. Kill one germ each time you perform the personal hygiene activity.

SOURCE: TOOLS AND TRACKERS - ARNEY’S FITKIDS-PROMOTING HEALTHY CHILD DEVELOPMENT
SOURCE: TOOLS AND TRACKERS - ARNEY'S FITKIDS-PROMOTING HEALTHY CHILD DEVELOPMENT

**FRUIT COLOUR KEY**

- Red: Apple with skin, Pomegranate, Cherries, Strawberries, Water Melon, Mango, Papaya, Pomegranate, Golden Apple, Mango.
- Orange: Pineapples, Orange, Golden Apple, Kiwi.
- Yellow: Pineapples, Golden Apple, Mango, Indian Ras-bhari.
- Green: Pears, Green Apple, Kiwi.
- Purple: Jamun, Black Grapes.
- White: Banana, Litchi, Mangosteen, Dragon Fruit.

**INSTRUCTIONS**

Each numbered band indicates one day of the calendar. Match the colour of the fruit consumed in the day on the tracker. Ensure the consumption of different coloured fruits goes up daily.

**VEGETABLE COLOUR KEY**

- Red: Tomatoes, Carrot, Beet, Red Peppers, Yellow: Bell Pepper, Yellow Squash, Sweet Corn, Yellow Tomato, Pumpkins, Sweet Potato, Purple: Spinach, Beetroot, Green Beans, Capsicum, Spring Onion, Green Pumpkin, Parwal.
- Dark: Spinach, Methi, Broccoli, Green Beans, Capsicum, Spring Onion, Zucchini, Karela, Torai, Okra, Green Pumpkin, Parwal.
- Light: Cabbage, Cucumber, Peas, Lauki, Tinda, Lettuce, Celery.
- Purple: Purple Cabbage, Brinjal, Black Olives.
- White: Potato, Mushroom, Arbi, Tumeric, Lotus Stem, Cauliflower.

**INSTRUCTIONS**

Each numbered band indicates one day of the calendar. Match and tick the colour of the vegetable consumed in the day on the tracker. Ensure the consumption of different coloured vegetables goes up daily.
Certificate of Achievement

THIS IS TO CERTIFY THAT ______________________________________ IS THE "HAND WASHING CHAMP"

DATE _____________________
SIGNATURE _____________________

15th Oct. is celebrated as Global Hand Washing Day

Certificate of Achievement

Feedback Form

Name ______________________________________
Address ______________________________________
Contact Information ______________________________________
Gender : □ Male □ Female
Name of School ______________________________________

Did you find the Yellow Book useful ? □ Yes □ No
Did you find the Yellow Book easy to read? □ Yes □ No
Would you like to know more about food safety and nutrition? □ Yes □ No

What do you think should be added to the book?
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________
What do you think should be removed from the book?
_______________________________________________________________________________________________
_______________________________________________________________________________________________
_______________________________________________________________________________________________

FSSAI
Food Safety and Standards Authority of India
Inspiring Trust, Assuring Safe & Nutritious Food