



EU-India Capacity Building Initiative for Trade Development (CITD)



Train the Trainers in Food Safety and Nutrition



Overcoming Nutritional Deficiencies

Activity

My healthy body check list - Signs of Good Physical Health

| S. no. | Body part/ Characteristic | Signs of Good Health | Checklist |
|--------|------------------------------|---|-----------|
| 1 | Hair | Shiny, scalp clean | |
| 2 | Skin | Smooth, slightly moist, healthy glow | |
| 3 | Eyes | Bright, clear, no dark circles | |
| 4 | Lips | Good colour, moist | |
| 5 | Tongue | Pink colour without lesions | |
| 6 | Gums | Firm, no bleeding or swelling | |
| 7 | Teeth | Straight, no discolouration or cavities | |
| 8 | Abdomen | Flat | |
| 9 | Legs/ feet | No pain or swelling/ no knocked knees or bow legs | |
| 10 | Nervous control | Good concentration, not irritable or restless | |
| 11 | Weight | Normal for height, age and body build | |
| 12 | Posture/ muscles | Stands straight with tummy in & chest out | |
| 13 | Appetite/ Digestion | Good/ normal regular bowel movements | |
| 14 | Sleep | Sound sleep, wakes up refreshed | |

Y N



Nutrients and Deficiency Symptoms



- **Malnutrition** (mal means faulty) is an impairment of health resulting from a deficiency, excess or imbalance of nutrients.
- A deficiency of calories and/or one or more nutrients in the diet is called **Under-nutrition**. Undernourished children are underweight and prone to infection.
- **Over-nutrition** refers to an excess of calories and/or one or more nutrients in the diet.
- An excessive intake of calories results in overweight which can lead to **Obesity**.



Both under-nutrition and over-nutrition are called Malnutrition and are harmful to the body



| Underweight | Normal | Overweight | Obese | Severely Obese | Morbidly Obese |
|------------------|------------------|------------------|------------------|------------------|----------------|
| BMI 18.5 or less | BMI 18.5 to 24.9 | BMI 25.0 to 29.9 | BMI 30.0 to 34.9 | BMI 35.0 to 39.9 | BMI 40 or more |

FOOD AND NUTRIENTS

Food is eaten and digested in the body to allow the absorption of energy and nutrients.

There are two different types of nutrients:

- **Macronutrients**
- **Micronutrients**

Three **Macronutrients** that are essential for health.

- Carbohydrate
- Protein
- Fat

Micronutrients are needed in the body in tiny amounts. They do not provide energy, but are required for a number of important processes in the body.

Two main groups of micronutrients:

- Vitamins
- Minerals



Macronutrients are measured in grams (g).

Micronutrients are measured in milligrams (mg) and micrograms (μg)

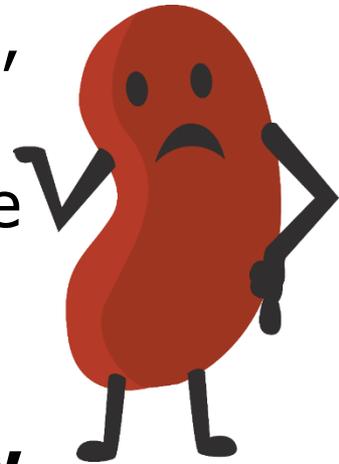




What are nutritional deficiencies?

When the diet is inadequate in one or more nutrients, deficiencies occur

- Typical deficiency symptoms appear after prolonged deficiency of the nutrient.
- Some nutrients like Vitamins A and D are stored in the body. If stores are good, deficiency symptoms appear gradually.
- Vitamins C and B-complex are water soluble and excess intake is excreted by the body.

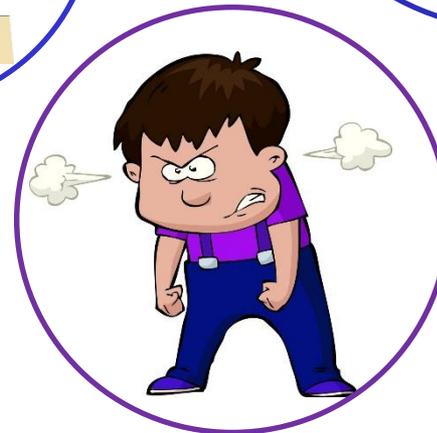


Deficiency symptoms appear in a few days.



DO YOU HAVE ANY OF THESE SYMPTOMS OF MILD NUTRIENT DEFICIENCY?

1. Lassitude
2. Loss of appetite
3. Easy fatigue
4. Pallor
5. Irritability



Nutritional deficiencies - Protein



Deficiency Symptoms:

Loss of weight, fatigue, anaemia, lowered resistance to infection, poor healing of wounds and oedema.

Kwashiorkor results from a severe protein deficiency.

Symptoms of Kwashiorkor:

- Puffy or moon-shaped face
- Oedema on hands and feet
- Poorly developed muscles
- Pot belly
- Weak hair and nails
- Easy pluck ability of hair
- Growth is retarded

Are you a victim of Protein deficiency?

- Do your nails break easily?
- Does your hair fall when you comb or wash it?
- Do you fall ill often?



Deficiency of Carbohydrates



Answer the following questions

- Do you feel listless and inactive?
- Are you underweight?
- Do you look malnourished?

If the answer to any of these questions is yes, you could be suffering from carbohydrate deficiency

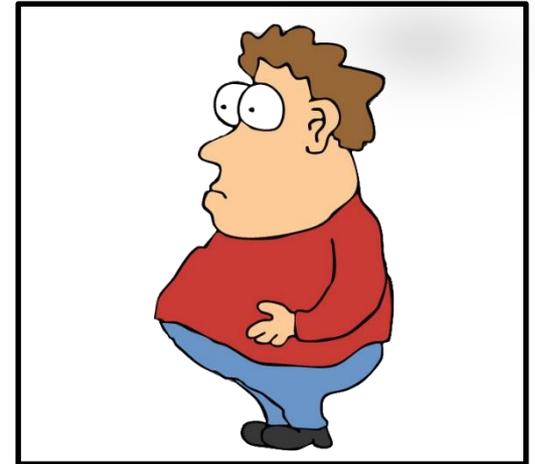
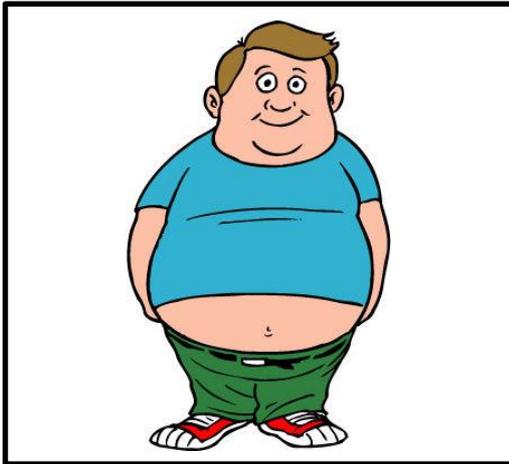
- Deficiency is uncommon in India as our diet is cereal based.
- Deficiency of fiber causes constipation

Marasmus results from a severe food deficiency and is seen in starvation and deficiency of carbohydrates.

Other nutrients may also be deficient.



**Do you eat excess
Carbohydrates?**



Deficiency of Fats

Fat provides fat-soluble vitamins A, D, E and K, and is necessary for their absorption. Contain essential fatty acids the body cannot make.



Deficiency Symptoms

- Deficiency of essential fatty acid - linoleic acid which is present in oils will lead to toad skin.
- Skin becomes rough, dry and papular, on forearms.
- Poor growth & low body weight.
- Deficiency of all fat soluble vitamins can occur

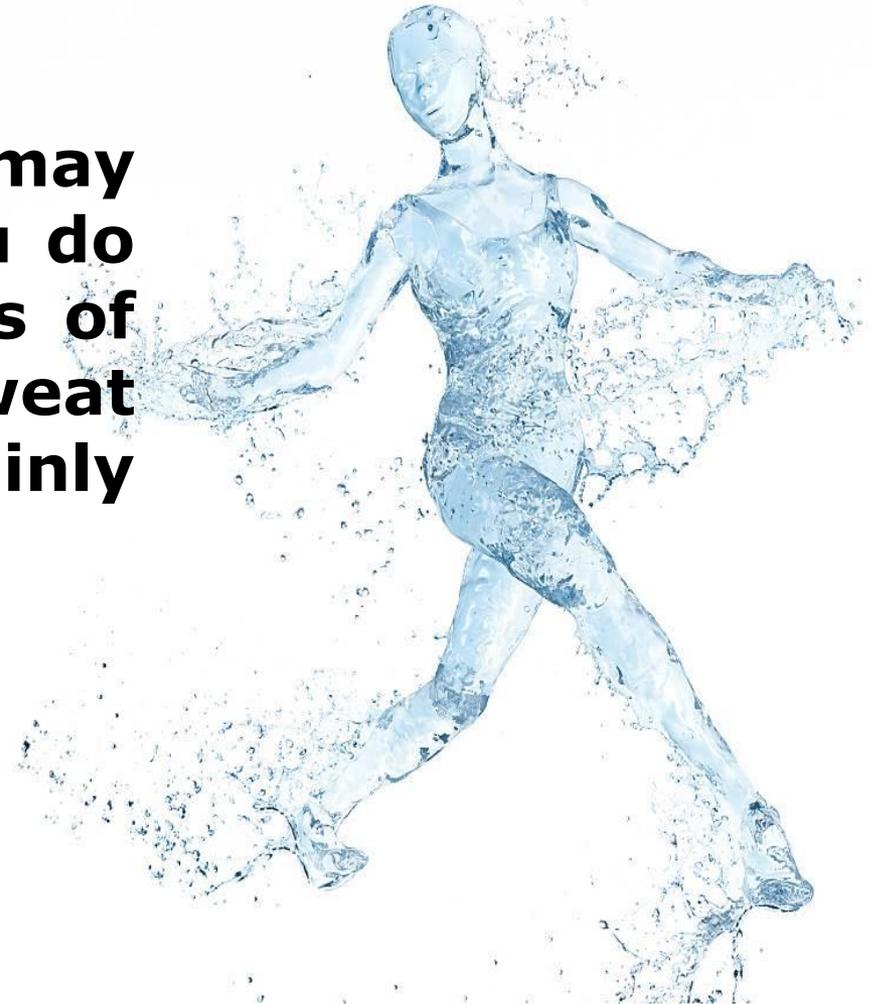
Excessive intake

- Causes overweight (body weight 10 % or more than desirable weight) or obesity (body weight 20 % or more than desirable weight)
- High intakes of saturated fats and cholesterol increases risk of cardiovascular diseases.



Deficiency of Water

A deficiency of water may sound funny, but if you do not drink 6 – 8 glasses of water everyday, or sweat profusely, it is certainly possible



DID YOU KNOW!?



To stay healthy,
you need to
drink 6 – 8
glasses of water
everyday!

Water
deficiency
is serious!





The word for
water deficiency
is
DEHYDRATION!

Dehydration
symptoms are...

- Dry mouth, Sunken eyes, and Skin when pinched remains elevated.
- Restlessness & Irritability
- Lethargy
- Unconsciousness in extreme cases



Vitamins...

Fat-soluble vitamins can be stored in the body, i.e. vitamins A, D, E and K;

Water-soluble vitamins cannot be stored in the body and are therefore needed by our body from food sources i.e. B vitamins and vitamin C.



Fat soluble Vitamins - Deficiency of Vitamin A



Vitamin A can be obtained in two forms:

- Preformed as Retinol from animal sources
- Carotenoids (e.g. beta carotene) from plant sources, which is converted to retinol in the body.



Vitamin A deficiency harms your eyes!

Here's how you can see if you have Vitamin A deficiency

Does the glare of the incoming traffic momentarily blind you at night?

Do you find any difficulty in seeing things in dim light?

Do you have any of these

Deficiency Symptoms

- Night blindness
- Eyeball dry and lusterless
- Eyes sensitive to bright light
- Skin rough, dry & scaly
- Growth failure and stunted bones

Effect of Excessive intake

- Hypervitaminosis or high doses of Vitamin A are toxic.
- It is stored in the body and results in symptoms of toxicity like nausea, vomiting etc.



DID YOU KNOW!?



Difficulty in seeing things in dim light is Night Blindness!
Night blindness is both preventable and curable

Vitamin A deficiency can cause permanent Blindness.



Fat soluble Vitamins - Deficiency of Vitamin D

Vitamin D is needed for:

- absorption of calcium and phosphorus
- the maintenance of normal bones and teeth

Deficiency Symptoms

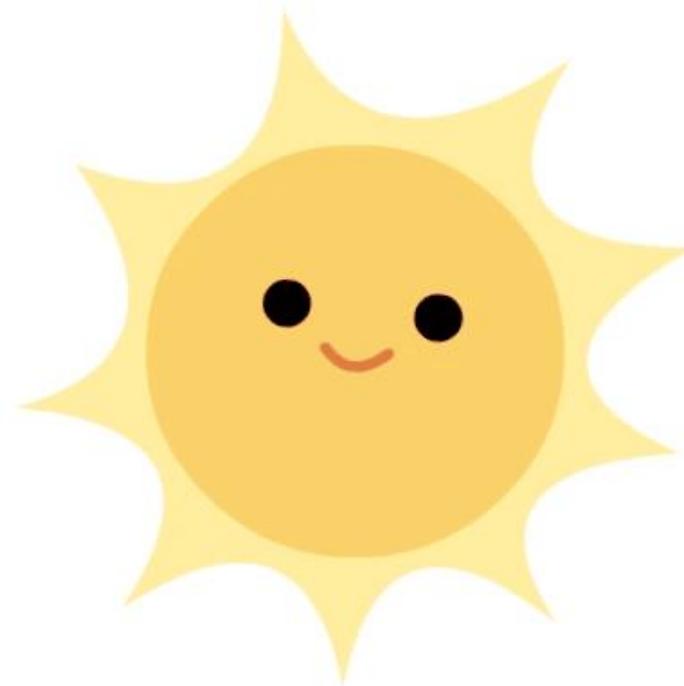
- Knocked knees/bowed legs
- Bones break/fracture easily
- Poor posture
- Pain in bones of legs and lower back
- Severe deficiency results in Rickets in children
- Osteomalacia and Osteoporosis in adults



DID YOU KNOW!?



We depend on
sunlight for our
requirement of
Vitamin D



DID YOU KNOW!?

Strong bones are needed to be able to take the weight of our body. Weak bones can bend and get deformed. Calcium and Vitamin D are required for strong bones



Lack of Vitamin D causes Rickets!

Remember to get enough Sunlight

Rickets



A **deficiency** disease resulting from a lack of Vitamin D or from insufficient exposure to sunlight. Characterized by softening of developing bone, bow legs, malnutrition, and enlargement of the liver and spleen.





Fat soluble Vitamins - Deficiency of Vitamin E

Vitamin E is an antioxidant and is required to protect cells against oxidative damage.

Deficiency Symptoms

- Deficiency is uncommon.
- Vitamin E is present in many foods
- Severe deficiency may result in premature ageing, Acne and skin problems





Fat soluble Vitamins - Deficiency of Vitamin K

Vitamin K is needed for:

- Normal blood clotting

Sources of vitamin K:

Green leafy vegetables, cauliflower, tomatoes, meat, dairy products and eggs.

- Deficiency is very rare
- Widely available in the diet
- Bacteria in the gut supply half the daily need.

Deficiency Symptoms:

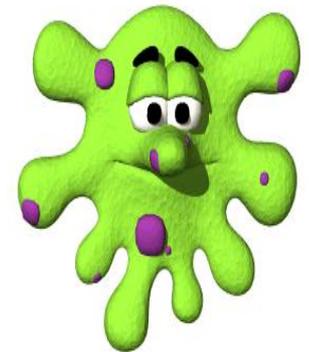
- Bleeding tendency in infants



DID YOU KNOW!?



The good bacteria which live in the gut can synthesize some B-complex and K Vitamins. When we take antibiotics these bacteria are destroyed. Vitamin supplements should be taken for a few days along with antibiotics.





Water soluble Vitamins - Deficiency of Vitamin C

Vitamin C is needed to make collagen, the cementing substance that keeps cells together.

Required for the structure and health of skin, cartilage and bones.
Helps heal cuts and wounds.

Deficiency Symptoms

- Bleeding gums
- Frequent colds and fever
- Low resistance to infection
- Easy bruising
- Slow healing of Wounds



Severe deficiency causes Scurvy and Anaemia



DID YOU KNOW!?

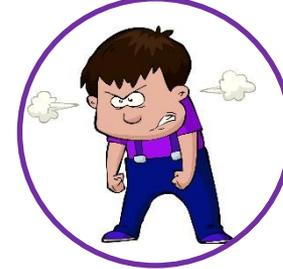


Lime juice helps in iron absorption and can prevent Anaemia





Water soluble Vitamins - Deficiency of B-complex



B-complex Vitamins which are commonly deficient in our diet include:

- Vitamin B 1 or Thiamine
- Vitamin B 2 or Riboflavin
- Vitamin B 3 or Niacin
- Folic acid or Folate
- Vitamin B 12 or Cobalamin

General Symptoms for all B-complex vitamins in mild deficiency

- General apathy
- Irritability
- Depression
- Loss of appetite
- Indigestion
- Tiredness/fatigue





Water soluble Vitamins B-complex - Deficiency of Vitamin B1

Vitamin - B1 Thiamine

Deficiency Symptoms

- Beri-beri or rice eaters disease
- Tingling and numbness in hands and feet
- Muscle weakness
- Cramps

Effect of Excessive intake

All water soluble vitamins are not stored in the body and excess is excreted by the kidneys



DID YOU KNOW!?



Rice contains B1 which is lost when rice is polished. The rice we eat is polished rice. Parboiling of rice before milling helps to retain B-complex vitamins





Water soluble Vitamins B-complex - Deficiency of Vitamin B2

Vitamin – B2 Riboflavin

Deficiency Symptoms

- Eyes sensitive to bright light
- Cracks at angles of mouth
- Swollen lips and tongue
- Sore mouth



DID YOU KNOW!?



Vitamin B2 is a yellowish pigment. The colour of urine turns yellow when we take B-complex tablets because excess is excreted by the kidneys





Water soluble Vitamins B-complex - Deficiency of Vitamin B3

Vitamin –B3 Niacin

Deficiency Symptoms

- Sore and swollen tongue
- Confusion
- Poor memory
- Depression.

Severe deficiency causes Pellagra

- **Diarrhoea**
- **Dermatitis** or symmetric lesions on skin exposed to light
- **Dementia** or hallucinations and if untreated
- **Death**





Water soluble Vitamins B-complex - Deficiency of Folic Acid

Vitamin – B-complex – Folic Acid

Deficiency Symptoms

- Anaemia
- Weakness
- Loss of weight
- Sore mouth
- Pallor
- Low hemoglobin levels



**Some bacterial synthesis takes place in the
intestine**



DID YOU KNOW!?

Apart from Iron,
Anaemia can
also be caused
by a deficiency
of Vitamins
B12, Folic acid,
Protein &
Vitamin C

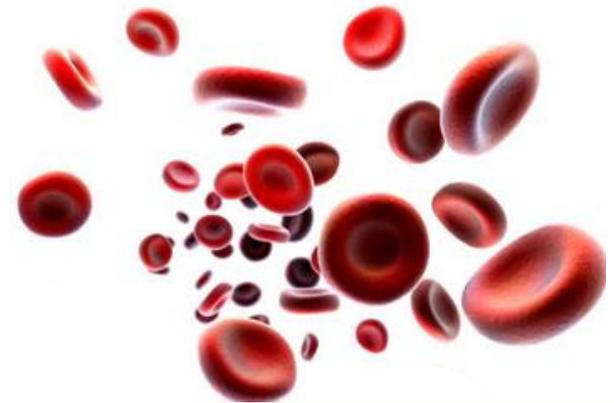




Water soluble Vitamins B-complex Deficiency of Vitamin B-12

Deficiency Symptoms

- Anaemia
- Pallor
- Mouth ulcers and sore mouth
- Tingling and numbness in hands and feet
- Hyperpigmentation/darkening of knuckles



DID YOU KNOW!?



Anaemia
can also
be caused
by
intestinal
worms



DID YOU KNOW!?



Worm infestation is common in children and is one of the important causes for Anaemia and malnutrition.



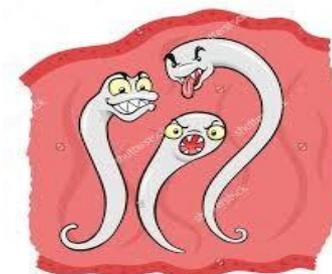
Worms are spread through poor personal hygiene and through the faecal- oral route. Proper hand washing can prevent re-infestation and break the cycle.



Round worms



Pin worms



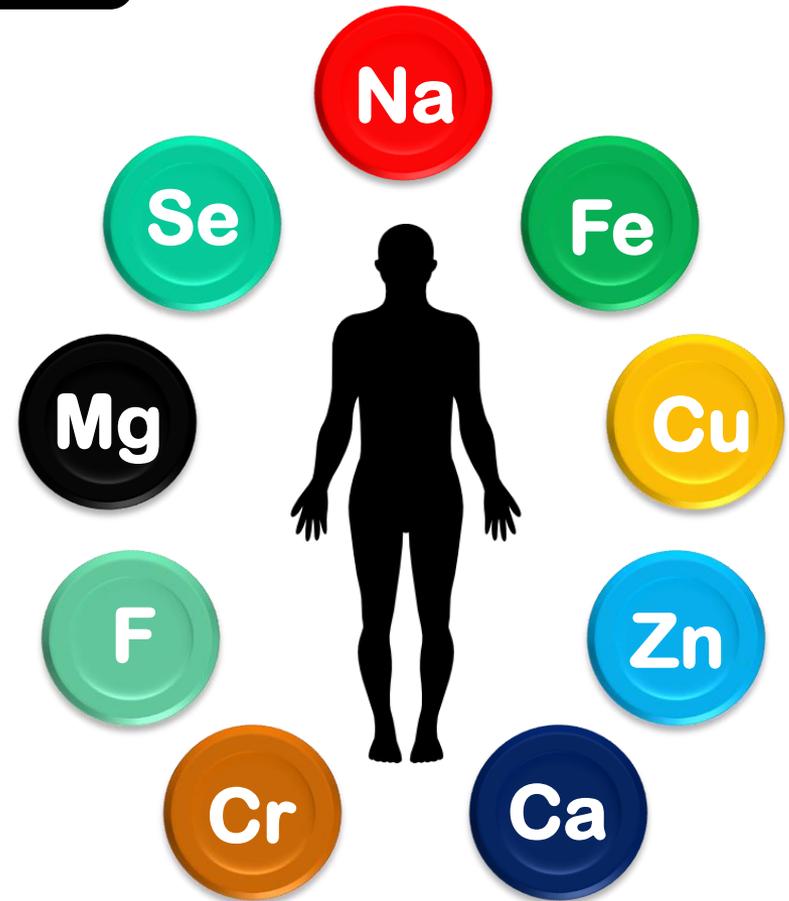
Worms feed on nutrients in the large intestine



Minerals

The body requires different amounts of each mineral.

Some minerals are required in larger amounts, while others are needed in traces.

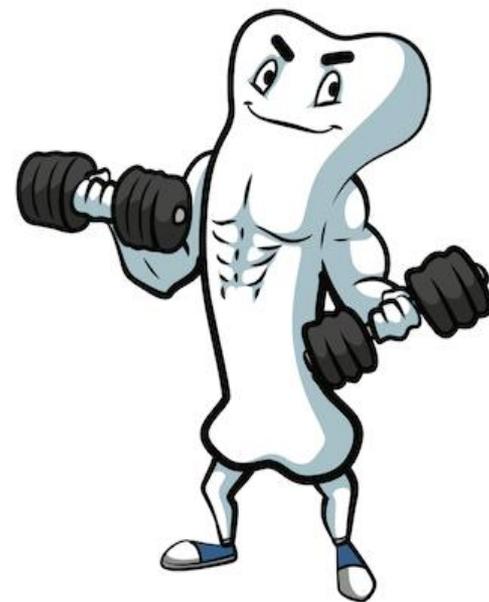




Minerals - Calcium

The body contains more calcium than any other mineral. It is essential for:

- the maintenance of normal bones and teeth
- normal blood clotting
- normal muscle and nervous system function
- normal function of digestive enzymes



DID YOU KNOW!?



The skeleton contains about 99% of the body's calcium with approximately 1kg present in adult bones.





Minerals - Deficiency of Calcium

Deficiency Symptoms

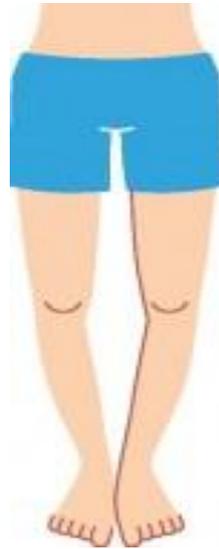
- Knocked knees/bowed legs
- Bones break/fracture easily
- Poor posture and tooth decay
- Pain in bones of legs and lower back

Severe deficiency results in rickets in children and Osteomalacia and Osteoporosis in adults

- Absorption depends on body's need.
- Acidic medium favors absorption.
- Excess minerals are excreted through the faeces



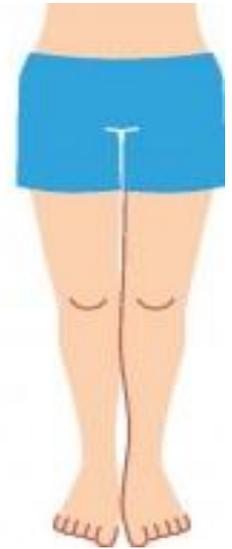
Minerals - Deficiency of Calcium



**Bowed
legs**



**Knocked
knees**

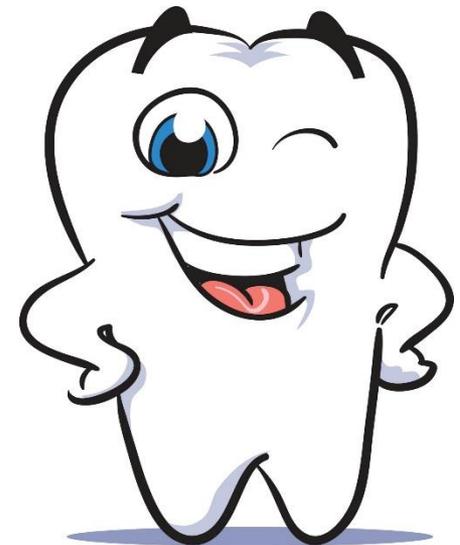


**Normal
legs**

DID YOU KNOW!?



Ragi is the only cereal that is rich in the mineral Calcium. Calcium is needed for strong bones and healthy teeth. Vitamin D helps in Calcium absorption.





Minerals - Deficiency of Iron



Deficiency Symptoms:

- Anaemia
- Pallor
- Poor performance
- Breathlessness on exertion
- General fatigue

Many factors affect the absorption of iron

- Vitamin C , proteins and gastric juice favour absorption
- Tea and coffee with meals, phytates in cereals and oxalates in green leafy vegetables hinder absorption

DID YOU KNOW!?



Anaemia is one of the most common deficiency diseases in our country.

It affects both children & adults!

Iron food sources



Dried beans



Dried fruits



Eggs



Cereals



Liver



Minerals - Deficiency of Iodine

Deficiency Symptoms:

- Goitre or swelling in the neck,
- Flabby muscles
- Dry skin
- In severe deficiency, stunted growth (cretinism) and mental retardation occurs.

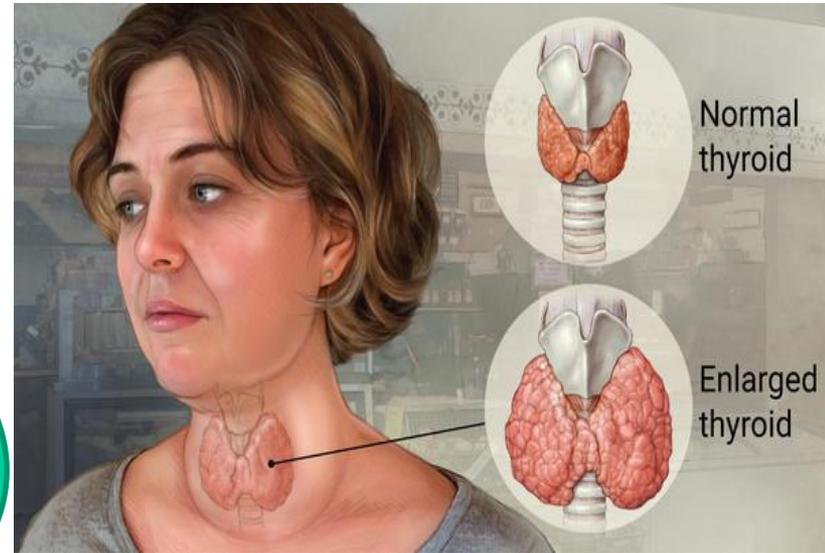


DID YOU KNOW!?



Iodine Deficiency occurs in hilly areas where iodine content of soil is low!

Use of Iodized salt can prevent deficiency of Iodine



Goiter affects the Thyroid gland in the neck





Minerals - Deficiency of Fluorine

Fluorine is needed for:

- Strengthening the enamel of the teeth

Effect of Excessive intake

- Fluorosis or mottling of teeth if drinking water contains high levels of fluorine.
- Teeth lose their lustrous appearance and get chalky white patches.



NORMAL



MILD



MODERATE



SEVERE

Deficiency Symptoms

- Tooth decay/ painful cavities



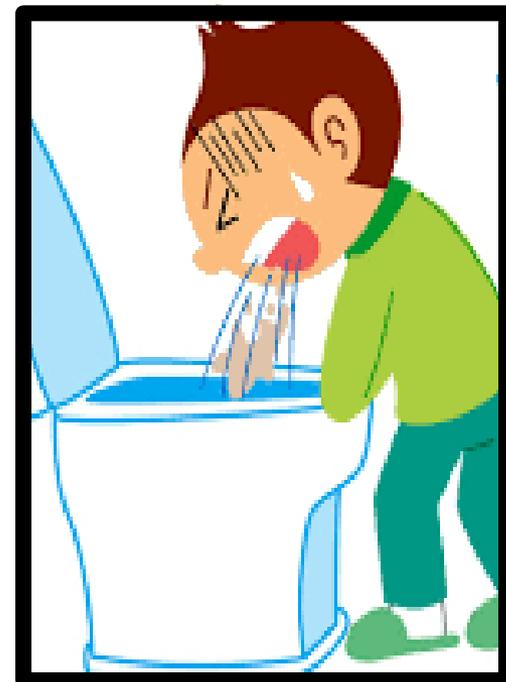
Minerals - Deficiency of Sodium

Deficiency Symptoms:

- Weakness, giddiness, nausea and muscle cramps
- Dehydration(excessive sweating/hot weather, severe vomiting and diarrhea)

Effect of Excessive intake

- Predisposes a person to high BP
- Sodium content of food additives need to be considered.



DID YOU KNOW!?



The main source of Sodium is SALT!

Always get Iodized Salt at home!





DID YOU KNOW!?

Salt is also a great food preservative!

Some Preservatives & Raising agents contain Sodium



DID YOU KNOW!?



A deficiency of salt and water can cause cramps in our calf muscles and dehydration. Saline is given to restore salt and water balance in the body.



Here are simple steps to overcome deficiencies



Balanced diet

- Eating a balanced diet with variety of fresh wholesome food
- Following proper cooking and storage practices
- Using simple measures to enhance the nutrient content of food like sprouting of grains and fermentation of cereal/pulse batters



Meat | Poultry | Fish | Eggs | Milk |
Dairy foods

**Protein is very
important in
our diet**

**These are
sources
of animal
proteins!**





Soya | Nuts | Seeds | Pulses

Vegetables
also have
proteins!

These are
sources of
vegetable
proteins!



Proteins

Simple ways
to increase the
protein content
of a vegetarian
diet



- Cereal + Pulse combinations,
- Include small serving of milk/curds in the meal
- Add processed Soya products like Textured Vegetable protein (TVP) – Nutri-nuggets etc.
- Use processed foods fortified with essential amino acids such as Lysine enriched bread and biscuits

Improving protein quality



Include a small quantity of complete protein food in every meal

- Complete proteins such as milk, curd, paneer, buttermilk and eggs used in small quantities in raita, curd rice, kadhi, french toast etc.
- Improves the protein quality of the meal while at the same time does not increase the cost significantly.



Improving protein quality



Cereal and Pulse Combinations



- Cereals and pulses eaten together complement each other.
- This is possible because the same amino acids are not missing from all plant foods.
- Example: Missi roti, Rajmah chawal, Chhole bhature, Dal rice, puran poli, chiwda and idli.

**Remember
this
equation!**



CEREAL
+
PULSES
+
GREEN LEAFY VEGETABLE
=
FLESH FOODS



Benefits of TVP

- Important substitute for animal products
- Acceptable to vegetarians
- Long shelf-life
- Equally nutritious as meat
- Low priced.

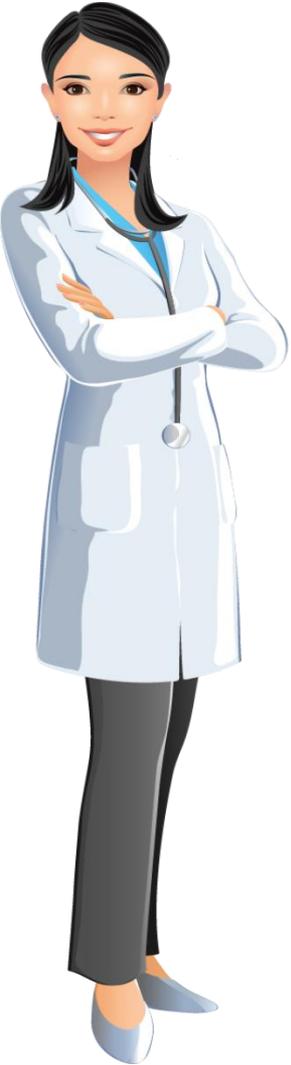


Activity 2: Combining Pulses and Grains



1. List 5 cereal pulse combinations used to prepare snacks at home
2. Recollect and list the sources of animal and vegetable proteins, which you have consumed in your diet yesterday.
3. How will you rate the protein quality of your diet
 - Excellent
 - Good
 - Satisfactory
 - Poor

Carbohydrates – Sugars, Starches & Fibre



Sugars come from – sugarcane, milk, honey, fruits.



Starches are found in abundance in cereals, pulses, tapioca, sago, roots and tubers.

Fibre is present in wholegrain cereals, bran, green leafy vegetables, mature vegetables, citrus fruits, apples & fruits with edible skin and seeds.





How to
improve
quality of
Carbohydrates
and Fats

Carbohydrates

- Whole grain cereals,
- Roots and tubers
- Fruit and jaggery
- Eat at least 3 meals/day

Fats

- Consume a variety of good fats and different oils like Clarified butter, groundnut oil, sesame oil, mustard oil
- Avoid trans fats like margarine and vanaspati which are used in fried snacks and bakery products

Water



- Drink 8 glasses of water/day
- Drink lime juice, cocum sherbet, pannah, tender coconut water, fruit juices, lassi, etc. which are refreshing and nourishing



Avoid carbonated sweetened beverages as they are hollow calorie foods



Vitamins A & D



VITAMIN D RICH FOODS



Vitamin A

- Eat yellow orange colored fruits and vegetables and green leafy vegetables rich in pigment carotene.
- Eat butter, ghee, egg yolk, liver and whole milk

Vitamin D

- Foods fortified with Vitamin D and fish liver oils

B-complex Vitamins



| | | |
|-------------------|--|--|
| Vitamin B1 | Food rich in protein and whole grain cereals | Parboiling of rice to retain B1 Enriched cereals Sprouted pulses Fermented foods |
| Vitamin B2 | Milk, cheese, liver, eggs | Avoid exposure of milk to light as B2 is destroyed. Enriched cereals Sprouted pulses Fermented foods |
| Vitamin B3 | Food rich in proteins, groundnuts | Protein (essential amino acid Tryptophan) is converted to B3 in the body Sprouted pulses Fermented foods |



Calcium & Iron

Calcium

- Drink at least 200 ml milk daily
- Ragi, green leafy vegetables, drum stick leaves, nuts and oilseeds specially sesame seeds

Iron

- Meat, egg yolk, green leafy vegetables, whole grain cereals and pulses, dry fruits like apricots, peaches, manukas, figs; garden cress seeds and niger seeds
- Use iron cooking utensils



This is how you
can improve
Fluorine!

Fluorine

- Check fluoride content of drinking water. Adding fluorine at a level of 1 ppm (1 mg in 1 liter of water)
- Use fluoridated toothpaste
- Paint the teeth with stannous fluoride



The best sources of Iodine- are found ...

Under the Sea



Seaweed



Sushi

(Thanks to the seaweed casing)



Shellfish



Fish

Sources outside of the sea...



Most Table Salt



Eggs



Black eyed beans



Milk, yoghurt and cheese

Foods that block iodine absorption, increasing the risk of deficiency

Blocks Iodine absorption



Cabbage



Cauliflower



Peanuts



Soy Products
(including soybean oil and tofu)

Iodine



How are nutrients lost while cooking?



Vitamins C and B-complex are highly soluble in water and easily destroyed during cooking.

They are lost when food is –

- Cut and exposed to air by oxidation.
- Cut and soaked in water or cooked in too much water
- Cooked, reheated and overcooked

How are nutrients lost while cooking?



- Cooked with alkali such as cooking soda as alkaline medium destroys vitamins.
- Dehydrated as vitamins are destroyed by heat and oxidation.
- Stale or stored in warm places

Fat soluble vitamins are lost by oxidation, and when food is deep fried they dissolve into the oil used for frying

Minerals are lost by leaching into the water used for washing or cooking food.

- They are not affected by oxidation, high temperature or alkali.

Activity 3:

Match the nutrients in Column 1 with their deficiency symptoms in Column 2



| | COLUMN 1 | | COLUMN 2 |
|---|-------------|---|-----------------|
| 1 | Oils | A | Night blindness |
| 2 | Vitamin A | B | Scurvy |
| 3 | Vitamin D | C | Beri-beri |
| 4 | Vitamin C | D | Rickets |
| 5 | Vitamin B12 | E | Toad skin |
| | | F | Pellagra |
| | | G | Anaemia |
| | | H | Fluorosis |

Activity 3: Answers

Match the nutrients in Column 1 with their deficiency symptoms in Column 2



| | COLUMN 1 | | COLUMN 2 |
|---|-----------------|---|-----------------|
| 1 | Oils | A | Night blindness |
| 2 | Vitamin A | B | Scurvy |
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| 4 | Vitamin C | D | Rickets |
| 5 | Vitamin B12 | E | Toad skin |
| | | F | Pellagra |
| | | G | Anaemia |
| | | H | Fluorosis |

Activity 4:

You have been told that you have a deficiency of nutrients listed in Column 1. Which foods would you select from Column 2 to help you overcome the deficiency symptoms with their rich source in column 2. (Food items listed in column 2 may be used more than once)



| | COLUMN 1 | | COLUMN 2 |
|---|-----------------|---|--------------------|
| 1 | Vitamin D | A | Garden cress seeds |
| 2 | Calcium | B | Ragi |
| 3 | Iodine | C | Rice |
| 4 | Iron | D | Vanaspati |
| 5 | Vitamin C | E | Sun light |
| | | F | Iodized salt |
| | | G | Amla |
| | | H | Milk |

Activity 4: Answers

You have been told that you have a deficiency of nutrients listed in Column 1. Which foods would you select from Column 2 to help you overcome the deficiency symptoms (Match the nutrients in column 1 with their rich source in column 2. Food items listed in column 2 may be used more than once)



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| 1 | Vitamin D | A | Garden cress seeds |
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| 3 | Iodine | C | Rice |
| 4 | Iron | D | Vanaspati |
| 5 | Vitamin C | E | Sun light |
| | | F | Iodized salt |
| | | G | Amla |
| | | H | Milk |

Activity 5:

Study the signs of good health and their deficiency symptoms listed in slides no. 3 to 53.

- Are you suffering from any of the symptoms mentioned in the deficiency column?

If yes then:

- Go through the sources given in slides no. 54 to 71 and check whether your daily diet contains food items which provide all the required nutrients.
- List the nutrients deficient in your food and write down what you propose to eat to maintain good health and overcome deficiencies.





Food Fads

- Food faddists ascribe special curative properties to certain foods.
- Claim certain foods have miraculous properties for promoting good health.
- Health conscious consumer spends more for foods with tall claims.
- Fad diets can cause permanent damage to our body.



Bottom line: All nutrients are needed in moderate amounts everyday



**Fad
Diets**

- Fad diets to lose weight or detox the body are gaining popularity
- Extreme diets and can have adverse effects in the long run.
- Can be an additional burden for vital internal organs
- Most weight loss is fluid loss and not fat loss
- **ALWAYS REMEMBER THAT A FAD DIET CANNOT REPLACE A WELL BALANCED DIET AND EXERCISE**

Have you heard of these common myths associated with food



- Fat free food is healthy
- Fish and milk should not be eaten together as it causes Leucoderma
- Drinking tea will make you dark
- Eating sugar causes Diabetes
- Eating salt raises Blood Pressure
- Fresh fruit should not be eaten at night
- Food cravings are a sign of nutrients missing from your body
- Highly processed vegetable oils are healthy
- Eat dry fruits in winter only
- Foods like meat, eggs and dals are 'hot foods' and produce heat and boils.
- Fruits, vegetables and milk are 'cold foods' and should not be given during a cold or sore throat



Why food fads are harmful?

FOOD FADS, MYTHS AND FAULTY FOOD HABITS ARE THE MAIN CAUSE OF MALNUTRITION AMONGST THE VULNERABLE AGE GROUPS



Activity 6:

- Have you heard of any fads or myths related to food.
- List down any such beliefs which people have and discuss with your teacher if there is any scientific basis to the belief.
- How can you contribute towards educating people and removing such myths from society





**What is
Junk
Food?**

Junk Food is defined as “any food, which is low in essential nutrients and high in particular in calories and sodium. Junk foods contain little or no proteins, vitamins or minerals but are rich in salt, sugar, fats and are high in energy (calories). For e.g. highly salted chips, food high in refined carbohydrates (empty calories) sugars -like candy, soft drinks and high in saturated fats like cake and chocolates.” (CSE,2012)

Junk Food is Popular but....



Although it is tasty
it lacks essential
vitamins and
minerals and
is.....

It is
UNHEALTHY!



High in Fat

High in Sugar

Low in Fiber





Why is
junk food
bad?

“**Unhealthy diet** is one key cause of the growing global burden of disease.”
WHO.

Changing Diet- low on nutrients and high on salt, sugar and fat (HFSS), are directly indicated to disease.

Junk food is responsible for rising cases of obesity and non communicable diseases(NCD's) like cardiovascular diseases and diabetes.

Changing Diet & NCD's





Health Implications of Junk Food

Studies have shown that despite being unhealthy, junk food **induces gorging that leads to obesity.**

The **fat from fatty acids affects the brain.**

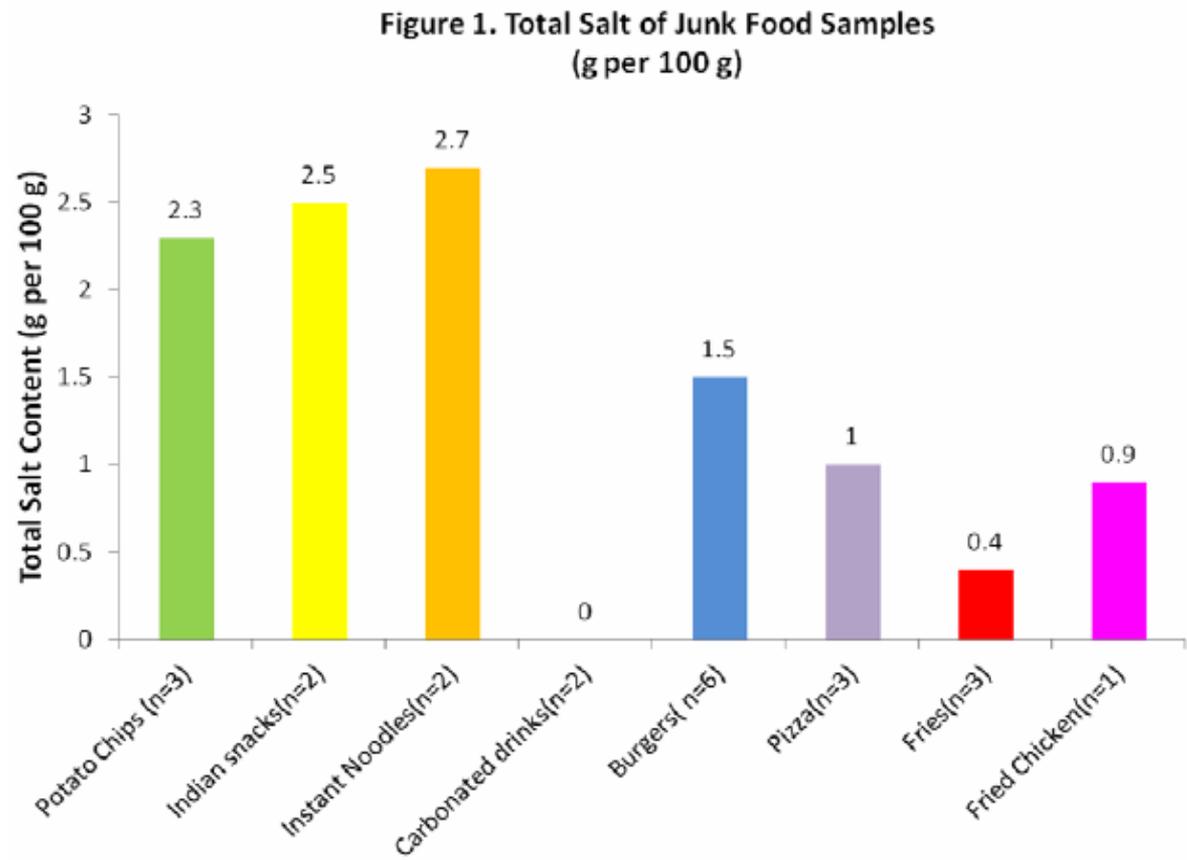
When we eat something high in fat, the brain gets 'hit' with the fatty acids, and the **fat molecules cause the brain to send messages to the body's cells, warning them to ignore the appetite-suppressing signals from leptin and insulin,** hormones that are involved in weight regulation.

Since the body does not get the signal that it is satiated it leads to over eating.



Salt Content of Junk Foods

- The amount of dietary salt is an important determinant of blood pressure levels and overall cardiovascular risk.
- Salt intake should not be more than **5 g per person per day**.

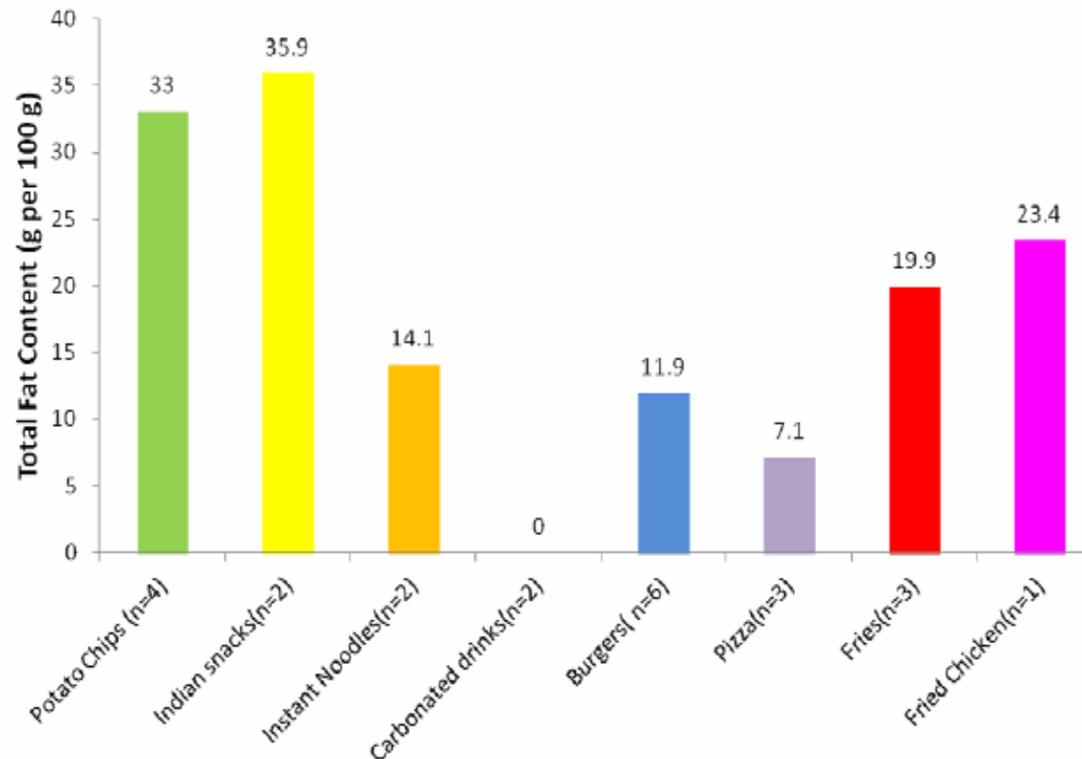


Fat content of Junk Foods



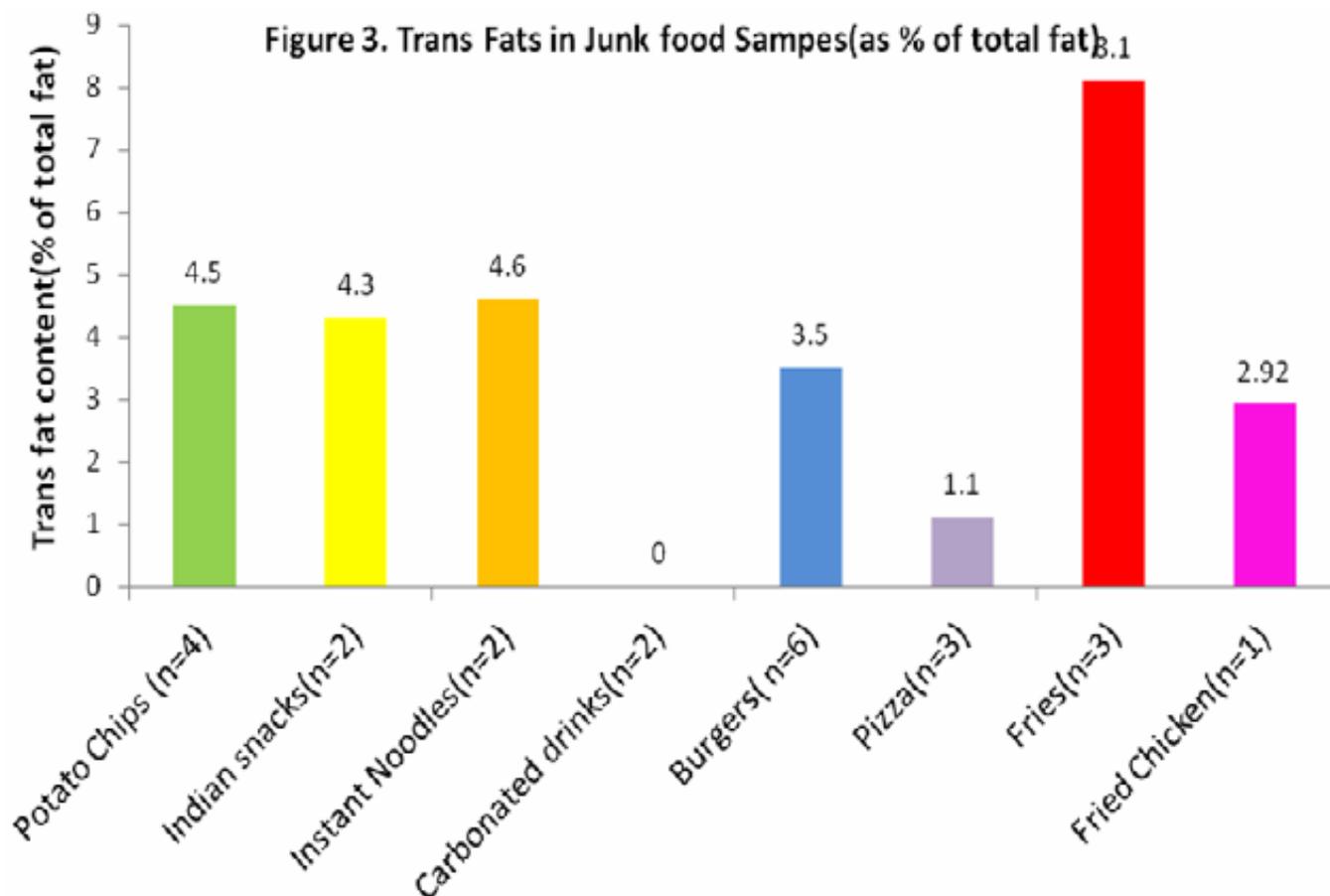
- **Fats: Junk foods like potato chips, burgers, pizza, fried chicken etc. have high fats content.**
- **The link between saturated fat and trans-fat and increased risk of heart disease is well established.**
- **RDA for fats ranges from 25 to 30 g/day**

Figure 2. Total Fat of Junk Food Samples (g per 100 g)



Trans Fat content of Junk Foods

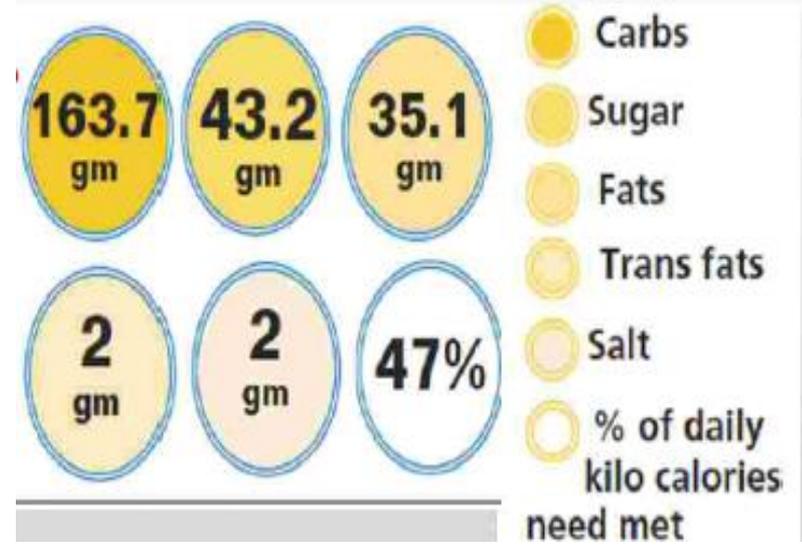
Trans Fat- High levels of TFA are a public health concern due to some evidence associating TFA with coronary heart disease.





A junk food
combo is
UNHEALTHY!

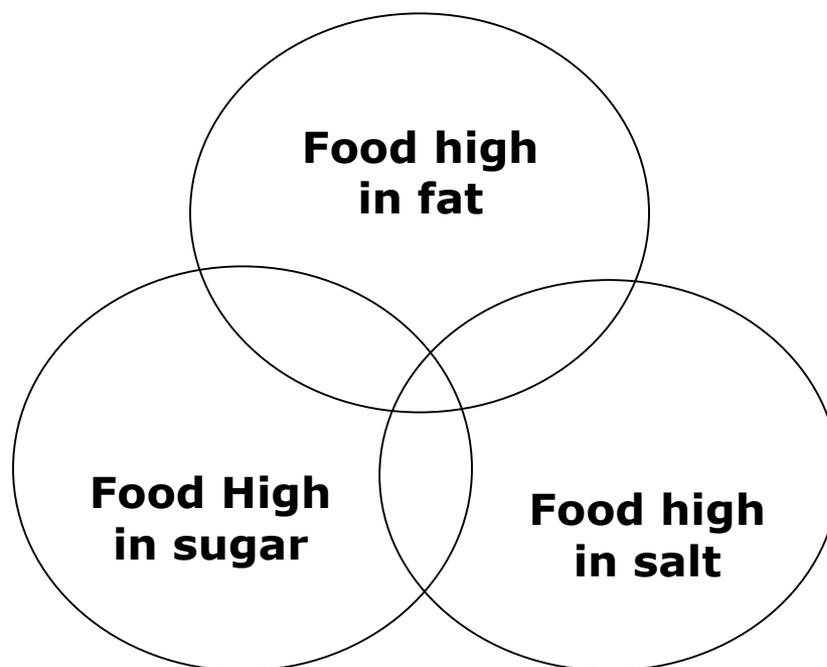
Think About
it!
Stay healthy!



Activity 7: Snack Attack

Student
name:
Date:

Fill the Venn
diagram with
commonly eaten
snacks.
Use food labels and
the traffic light
guide below to
determine where
the food should go.



| | Low | Medium | High |
|-------|----------------------|-----------------------|----------------------|
| Fat | Less than 3.0 g/100g | 3.0 – 20.0g/100g | More than 20.0g/100g |
| Sugar | Less than 5.0g/100g | 5.0 – 12.5g/100g | More than 12.5g/100g |
| Salt | Less than 0.3g/100g | 0.3g/100g – 1.5g/100g | More than 1.5g/100g |





What are Lifestyle related Diseases?

- Also known as Non Communicable Diseases (NCD) are the main diseases of our times.
- They occur due to a change in our lifestyle.
- Not contagious or communicable.
- Early onset and lifelong consequences.
- NCD's can be effectively prevented at no or minimal cost, but prevention needs to be started early in life



The main NCD's include the following disease groups:

- Cardiovascular(heart) diseases (CVD's)
- Diabetes
- Cancer
- Obesity
- Chronic obstructive pulmonary (lung) diseases

Other important NCD's that particularly affect school children include the following:

- Dental caries or tooth decay
- Injuries
- Mental diseases, Depression

Which diseases are included as NCD's ?





**What
causes
NCD's?**

- Globalization
- Rapid Urbanization
- Mechanization
- Marketing

All these factors have led to changes in living conditions, lifestyles and consumption patterns



Children are exposed to a set of key risk factors responsible for causing most NCD's.

KEY RISK FACTORS:

1. Unhealthy Diet
2. Physical Inactivity
3. Use of Tobacco
4. Harmful use of Alcohol
5. Inadequate precautions for injury prevention and Medical treatment
6. Lack of Oral Hygiene

Key Risk factors responsible for NCD's





**How can
NCD's be
prevented?**

NCD's can be prevented by controlling the key risk factors and maintaining a basic annual health record for the child.

We have learnt about lack of oral hygiene and physical inactivity in Module 2 on Personal hygiene.

Let us now learn how we can select safe and healthy food.





A healthy diet along with regular physical activity, staying away from tobacco and alcohol and keeping our surroundings safe, will go a long way in reducing the risk of contracting NCD's.



Selection of Safe and Healthy Food



General guidelines for good health

- Purchase food from licensed outlets
- Read food labels, check ingredients and 'Best before date'
- If you have to eat out and are unsure about safety of food then
 1. prefer foods which need to be freshly prepared like eating a dosa instead of a burger
 2. Select fruits which need to be peeled like bananas and oranges
 3. Choose foods with a protective covering like boiled eggs in shell
- Eat as much natural fresh foods as possible and less of processed foods
- Prefer intact whole fruits to fruit juices
- Do not purchase food sold by unauthorized hawkers or vendors outside the school gate



Selection of Safe and Healthy Food



- Consume local, seasonal, traditional and affordable foods as far as possible
- Avoid foods with excessive salt, spices and additives
- Avoid too many sweets, especially sugar
- Reduce the consumption of foods rich in refined cereals and high in fats like bakery products
- Eat foods that contain starch and fibre like whole grains
- Select foods rich in protein like milk, lean meat, eggs, fish and sprouted pulses
- Use a variety of oils for cooking food as well as in salads like groundnut, mustard, gingelly, olive, soya bean and sunflower
- Consume ample amounts of fresh vegetables both cooked and raw
- Eat a variety of foods for all food groups



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Thank you

