



# 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	 



# 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

Macronutrients  
are measured in  
grams (g).

**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.

Micronutrients are  
measured in  
milligrams (mg)  
and micrograms  
( $\mu$ g)

Two main groups of micronutrients:

- Vitamins
- Minerals

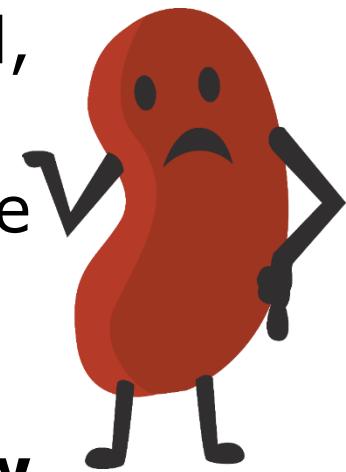




# What are nutritional deficiencies?

**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.

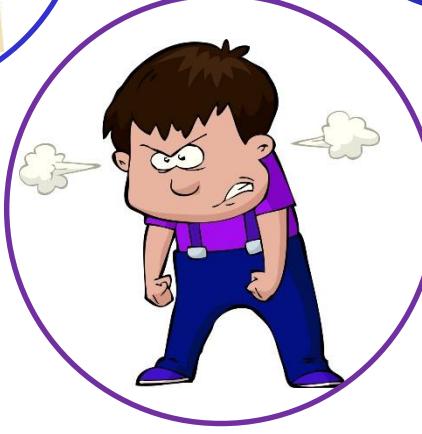


**Deficiency symptoms appear in a few days.**



## 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

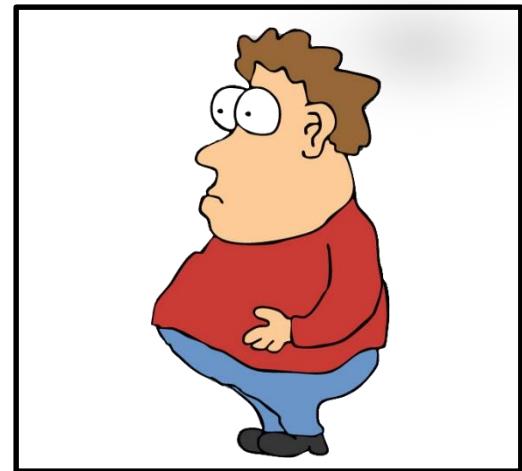
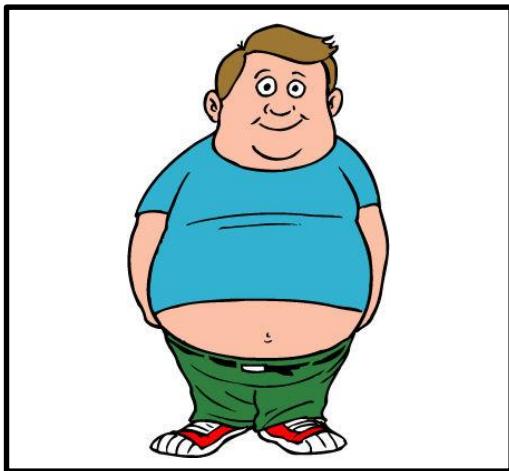
- Do you feel listless and inactive?
- Are you underweight?
- Do you look malnourished?  
If the answer to any of these questions is yes, you could be suffering from carbohydrate deficiency
- Deficiency is uncommon in India as our diet is cereal based.
- Deficiency of fiber causes constipation

**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

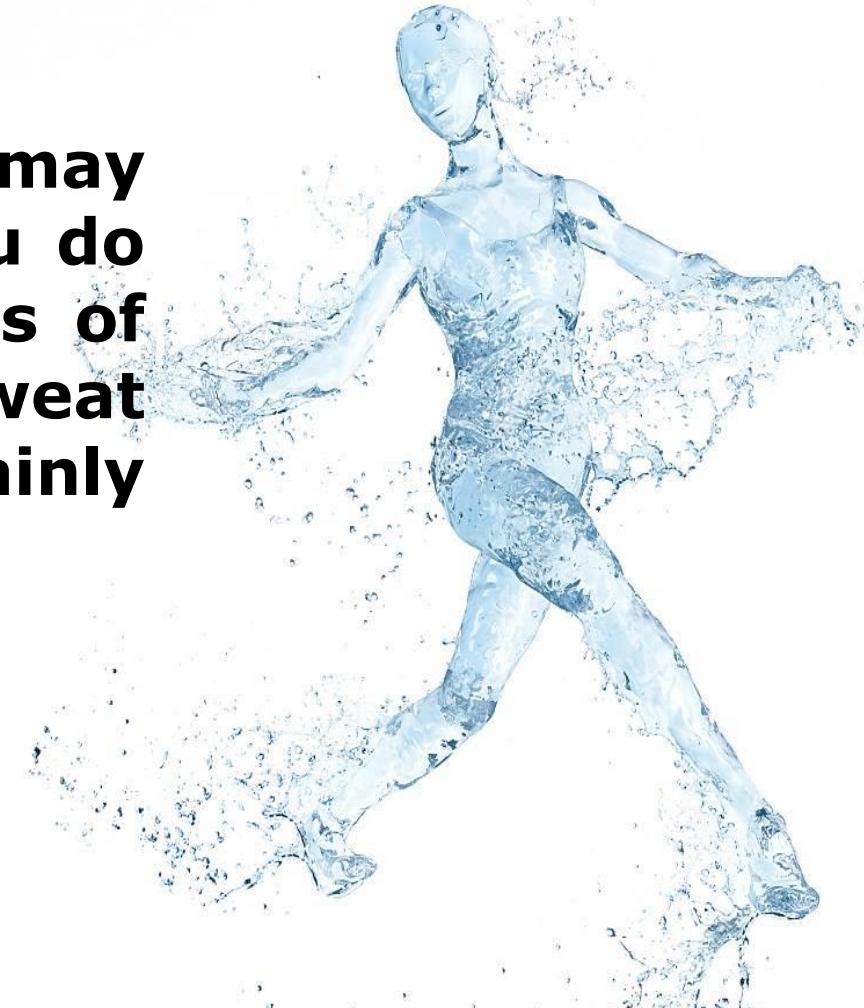
## Excessive intake

- 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...

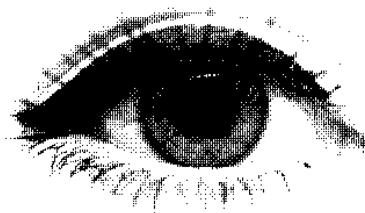


**Fat-soluble vitamins** can be stored in the body, i.e. vitamins A, D, E and K;

**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

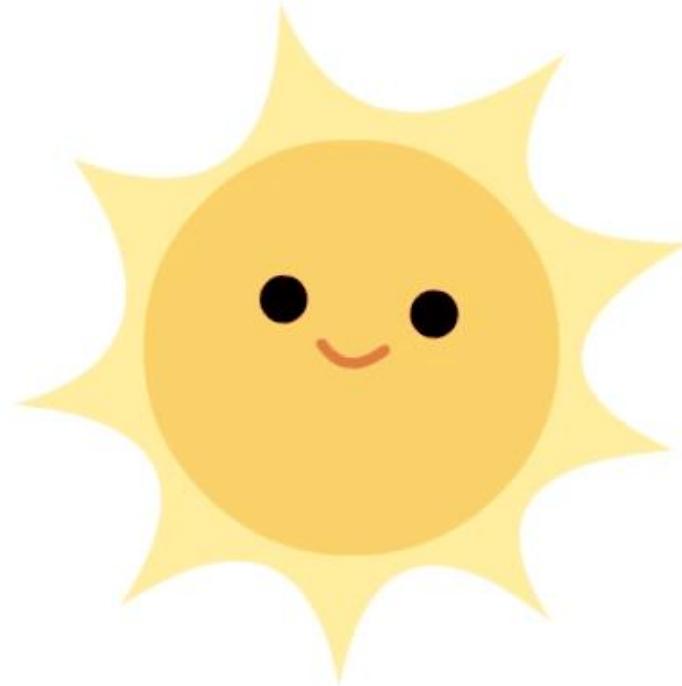
- Knocked knees/bowed legs
- Bones break/fracture easily
- Poor posture
- Pain in bones of legs and lower back
- Severe deficiency results in Rickets in children
- Osteomalacia and Osteoporosis in adults



# 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.

2 kids w/ rickets; 10 ing./yr of vitamin D prevents this.





## 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

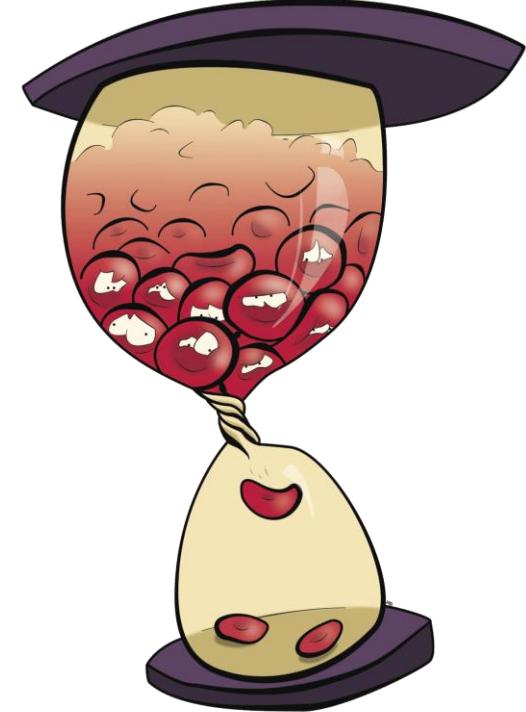
## Sources of vitamin K:

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:

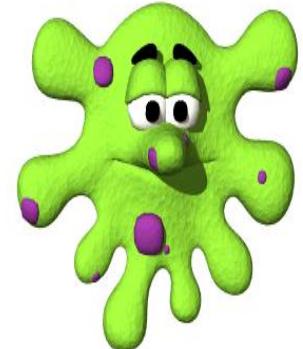
- Bleeding tendency in infants



# 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!?

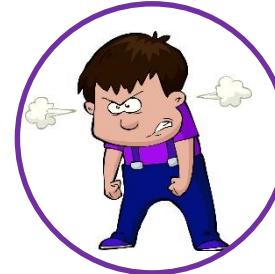


Lime juice  
helps in  
iron  
absorption  
and can  
prevent  
Anaemia





# 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



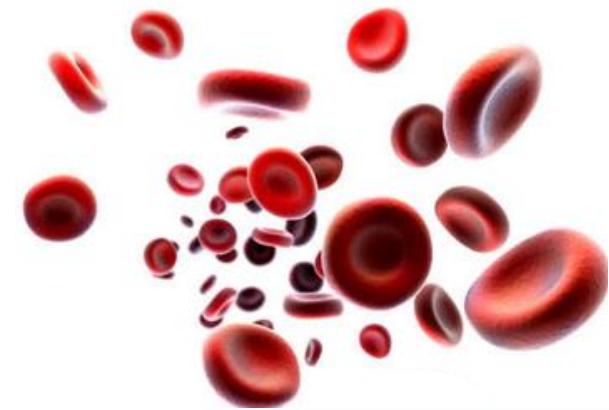


# Water soluble Vitamins B-complex

## Deficiency of Vitamin B-12

### Deficiency Symptoms

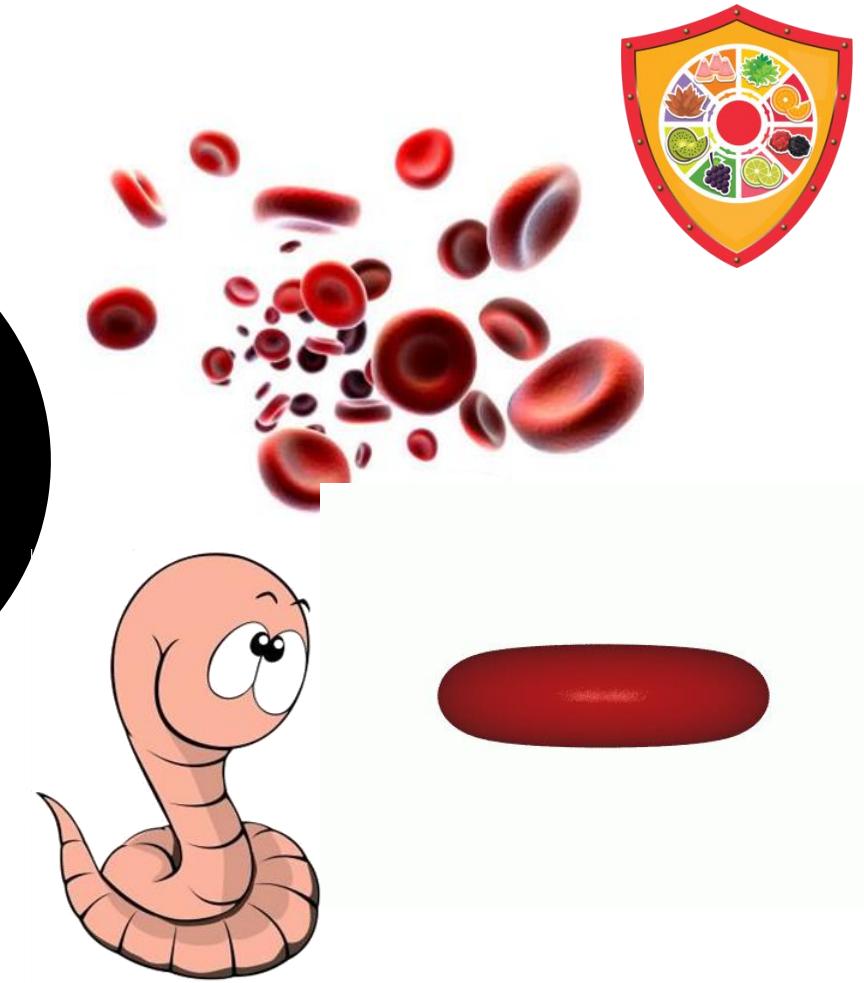
- Anaemia
- Pallor
- Mouth ulcers and sore mouth
- Tingling and numbness in hands and feet
- Hyperpigmentation/darkening of knuckles



# 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.

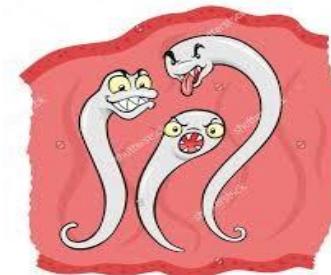
Worms are spread through poor personal hygiene and through the faecal- oral route. Proper hand washing can prevent re-infestation and break the cycle.



Round worms



Pin worms



Worms feed on nutrients in the large intestine

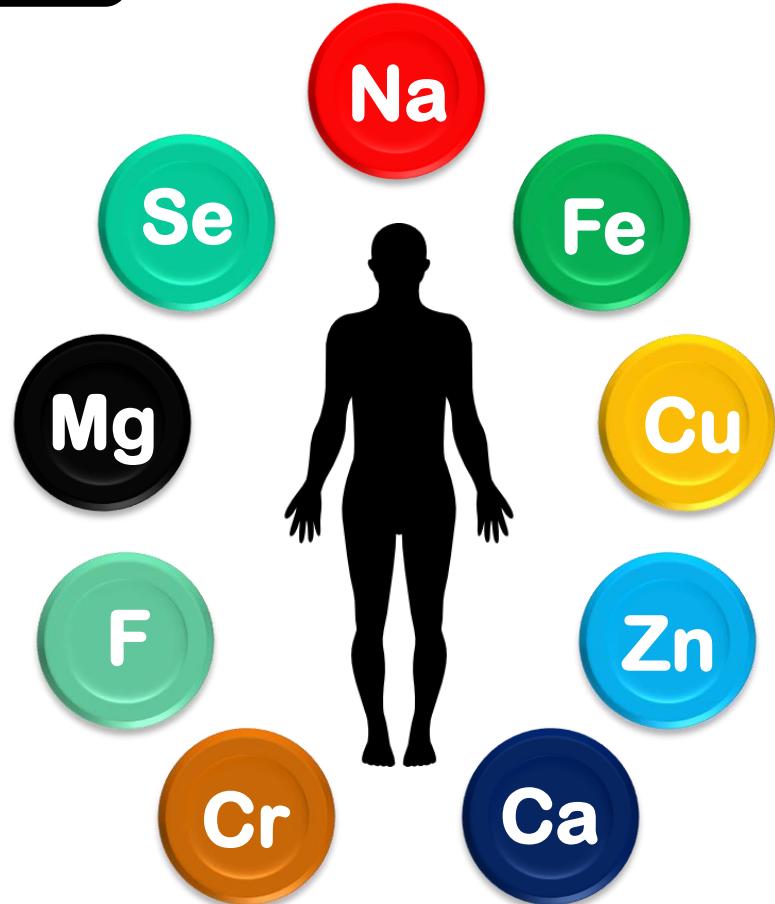




# Minerals

The body requires different amounts of each mineral.

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

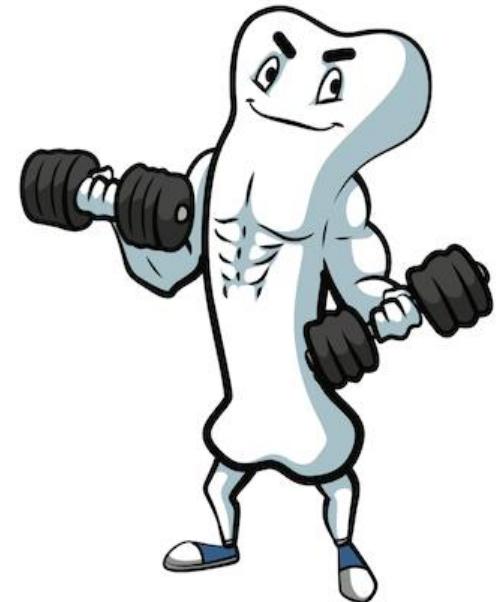




## Minerals - Calcium

**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



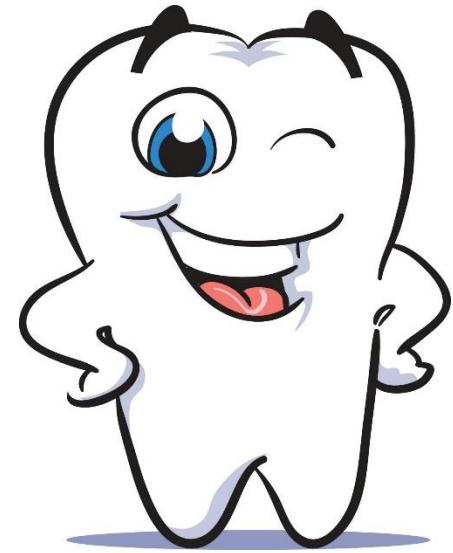
Normal  
legs



# DID YOU KNOW!?

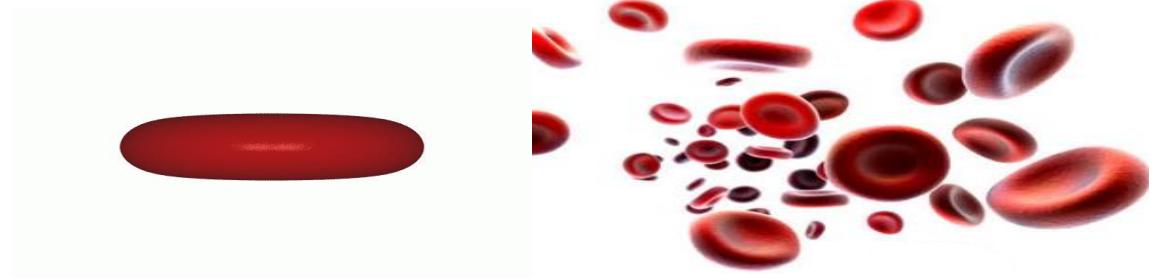


Ragi is the only cereal that is rich in the mineral Calcium. Calcium is needed for strong bones and healthy teeth. Vitamin D helps in Calcium absorption.





# 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





# 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.

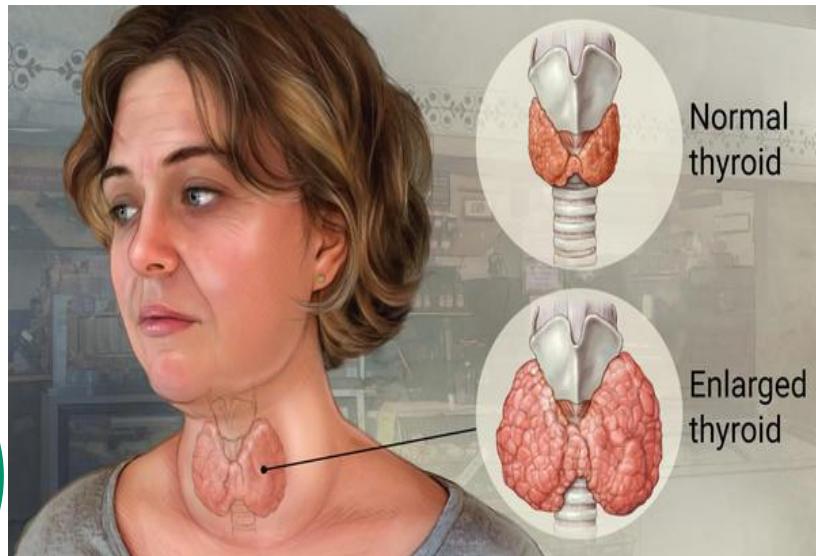


# DID YOU KNOW!?



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.



## Deficiency Symptoms

- Tooth decay/ painful cavities





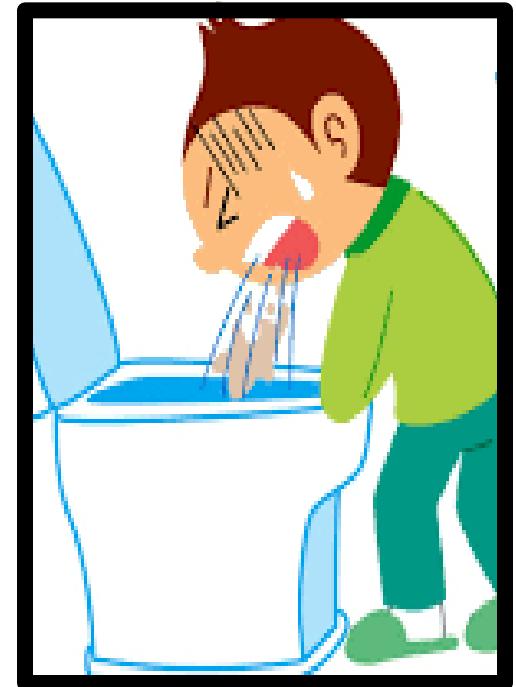
# Minerals - Deficiency of Sodium

## 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



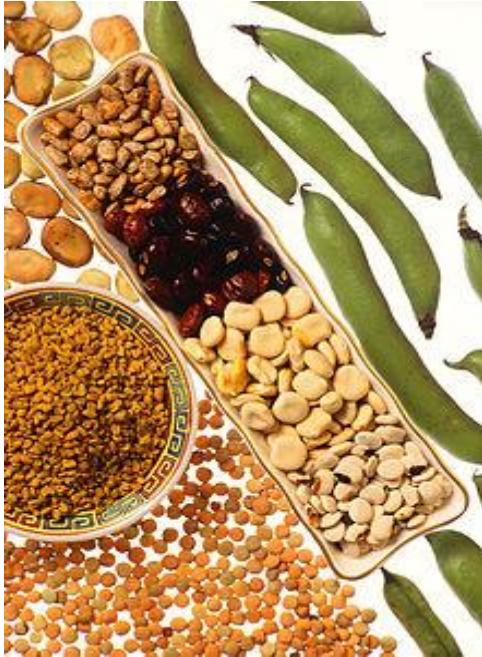
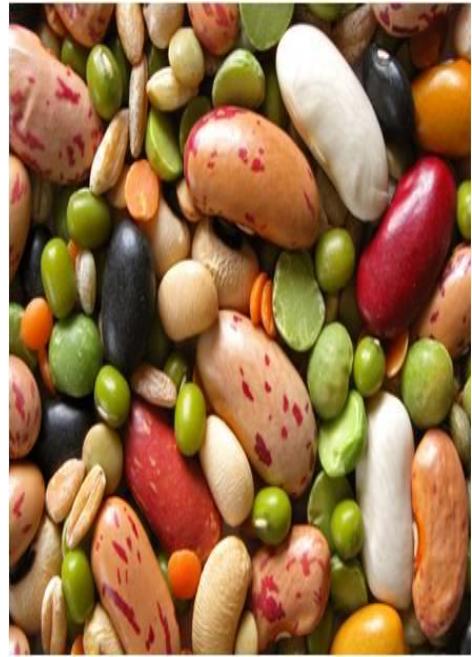


Meat | Poultry | Fish | Eggs | Milk |  
Dairy foods

**Protein is very important in our diet**

**These are sources of animal proteins!**





Soya | Nuts | Seeds | Pulses

These are  
sources of  
vegetable  
proteins!

Vegetables  
also have  
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



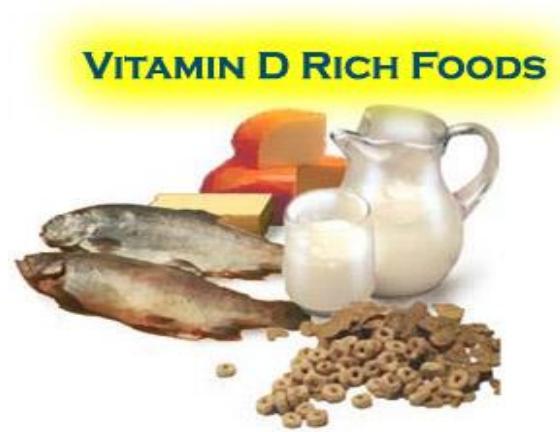
## Water



- 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 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; gardencress 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



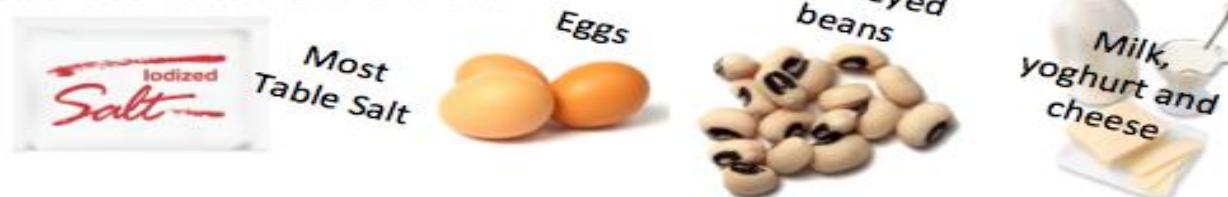


The best sources of Iodine- are found ...

## Under the Sea



### Sources outside of the sea...



### Foods that block iodine absorption, increasing the risk of deficiency

Blocks  
Iodine  
absorption



# 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



	<b>COLUMN 1</b>		<b>COLUMN 2</b>
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 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)



	<b>COLUMN 1</b>		<b>COLUMN 2</b>
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)



	<b>COLUMN 1</b>		<b>COLUMN 2</b>
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 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**

Some people think eating lots of sugar causes diabetes. Now there's a half-baked idea.



## 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.

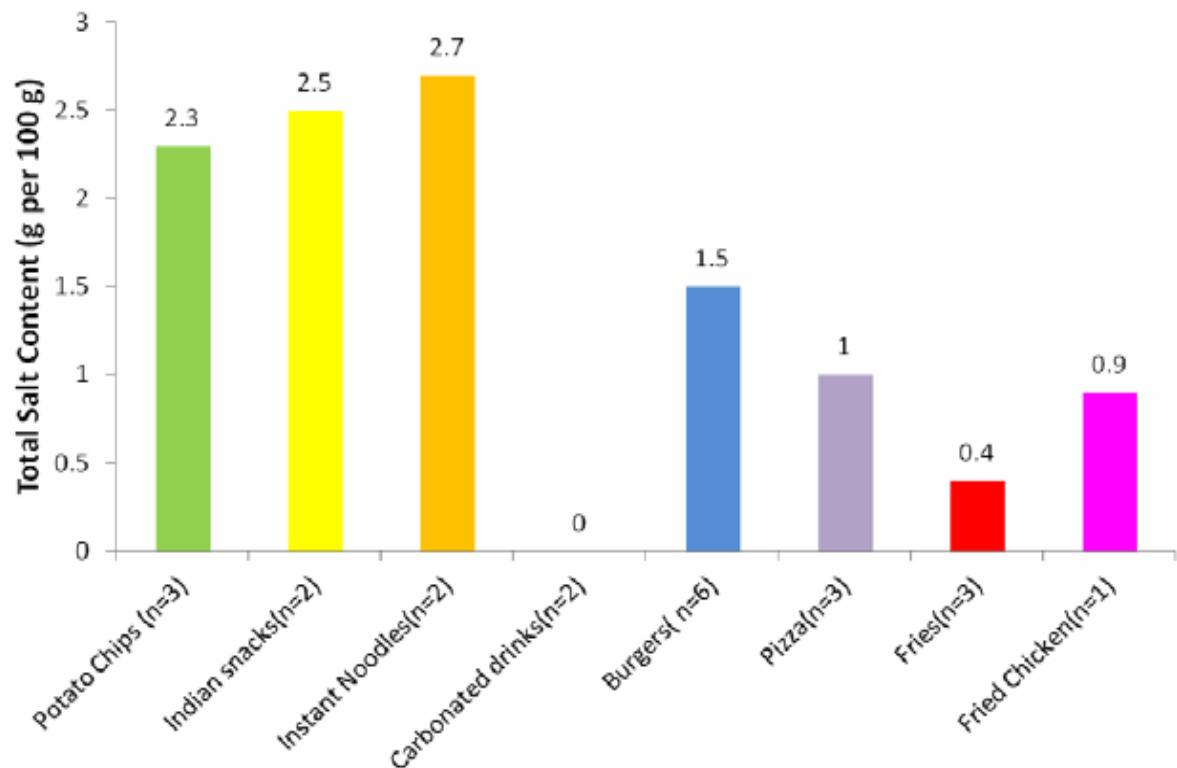
**Since the body does not get the signal that it is satiated it leads to over eating.**



# 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**.

Figure 1. Total Salt of Junk Food Samples  
(g per 100 g)

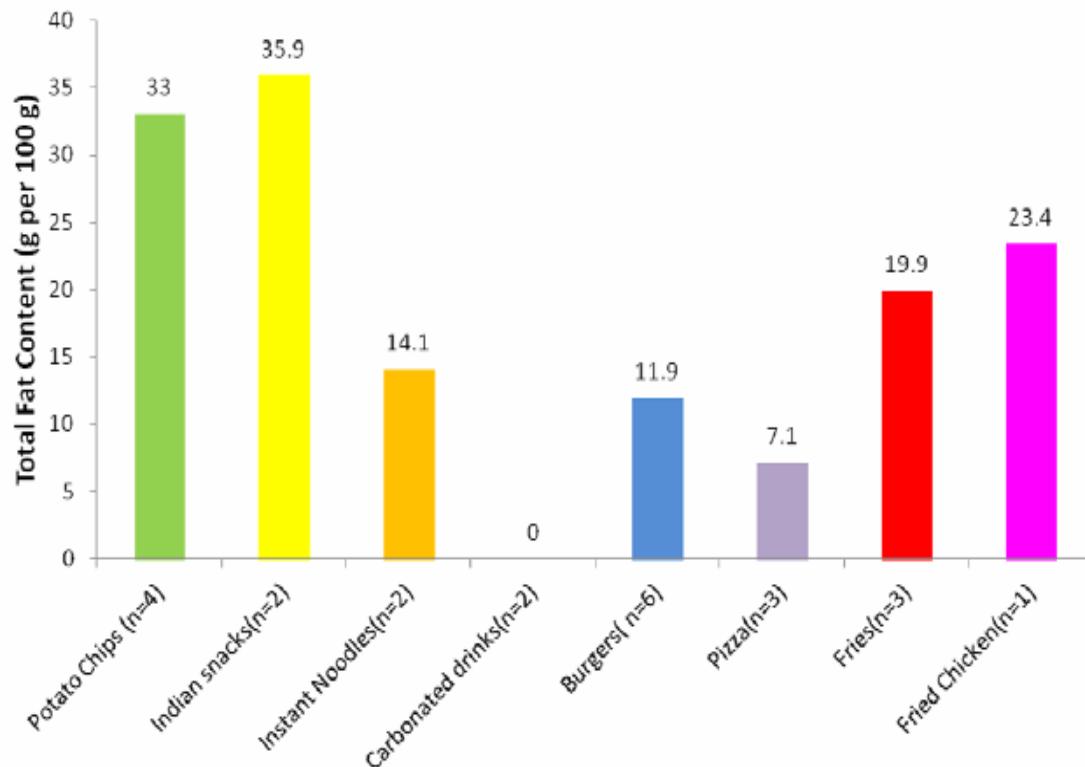


# Fat content of Junk Foods



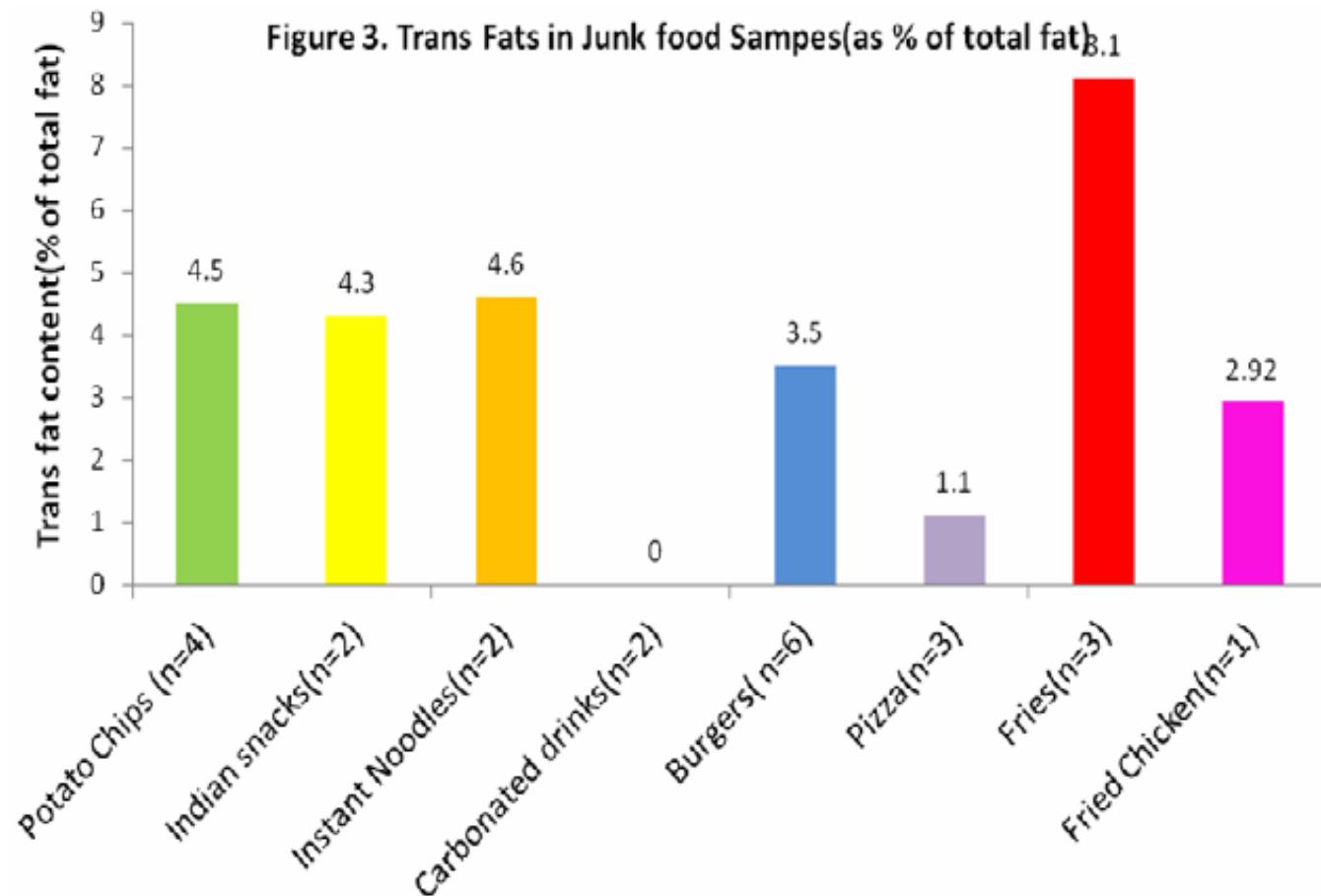
- Fats: Junk foods like potato chips, burgers, pizza, fried chicken etc. have high fats content.**
- The link between saturated fat and trans-fat and increased risk of heart disease is well established.**
- RDA for fats ranges from 25 to 30 g/day**

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



# Trans Fat content of Junk Foods

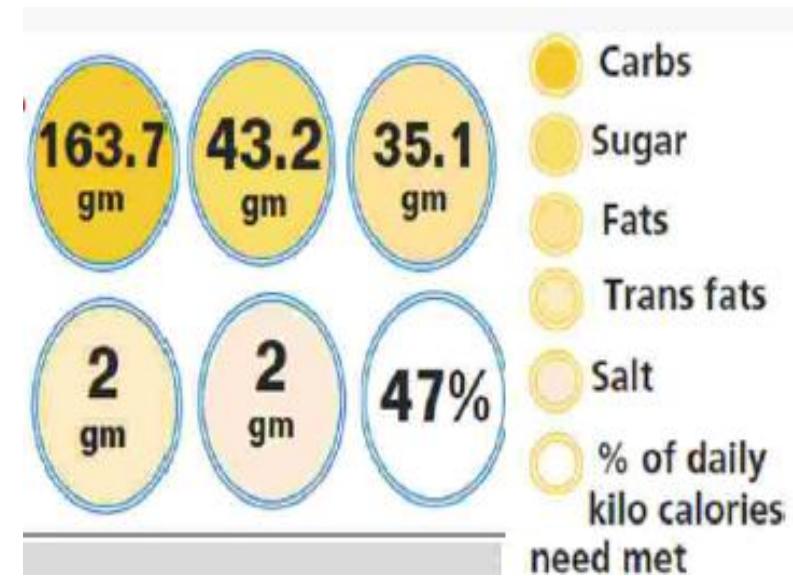
**Trans Fat- High levels of TFA are a public health concern due to some evidence associating TFA with coronary heart disease.**





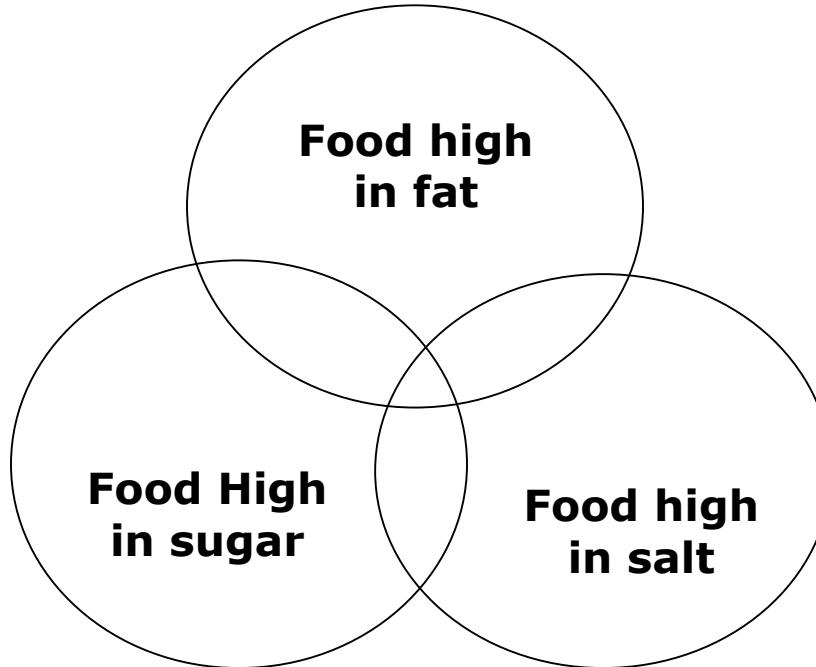
A junk food  
combo is  
**UNHEALTHY!**

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

**Which  
diseases  
are  
included as  
NCD's ?**



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

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





- 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

