



Sports & Physical Education

Nutrition

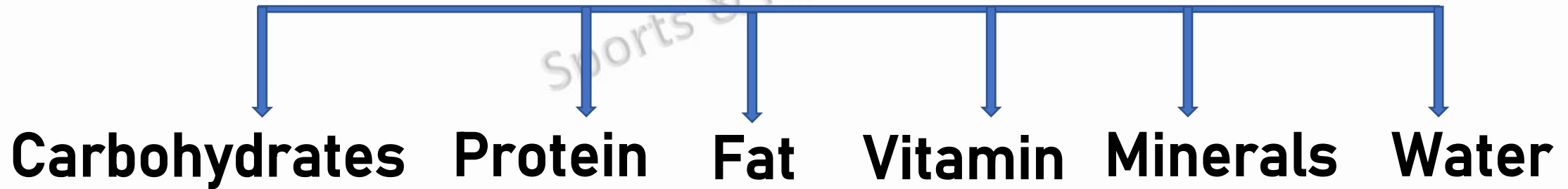
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Nutrition

Nutrition is the fuel that runs the body. It is the procedure by which the food is taken by the organism and used to generate energy for repair, growth, and maintenance of body.

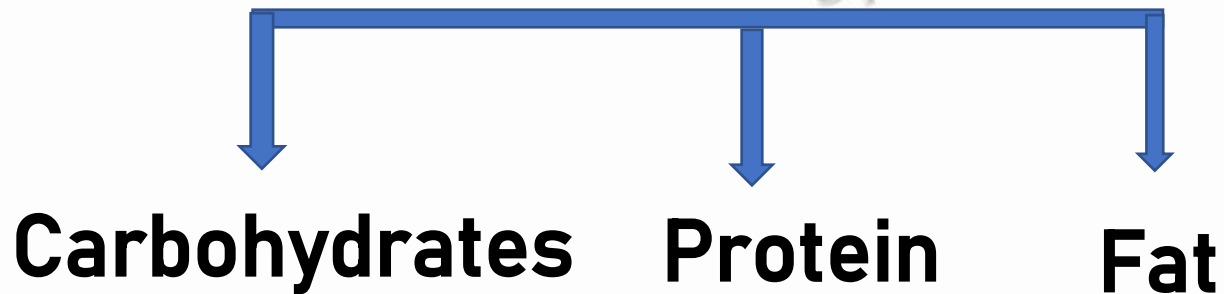




Nutrition

- **Macro Nutrition**

- Energy giving food
- Required by the body in large amount



- **Micro Nutrition**

- Protective food
- Required by the body in small amount





Carbohydrates

Carbohydrates- *Carbon, Hydrogen, Oxygen*

Ratio- *C:H:O*

1:2:1

- **50-75%- Energy**
- **1g carbohydrates = 4.1 Kcal Energy**
- **Daily consumption of carbohydrates-300g**

**Form-Glucose, Fructose, Sucrose, Maltose, Lactose,
Cellulose, Starch etc.**



Carbohydrates Function

- Instant source of energy.
- Regulation of blood glucose.
- Sparing the use of proteins for energy
- Dietary fiber etc.

➤ **Source-**

Rice, wheat, Bread, milk, Sugarcane, Pules, Fruit, Vegetables , Grain etc.



Type of Carbohydrates



Simple

Complex



Polysaccharides



Monosaccharides

Disaccharides



- Glucose
- Fructose
- Galactose

- Maltose
- Lactose
- Sucrose

- Glycogen
- Starch
- Fibers

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Type of Carbohydrates

➤ Monosaccharides- Single Sugar



- **Glucose**- Instant source of energy
- **Fructose**- Fruit Sugar (Sweetest sugar)
- **Galactose**



Type of Carbohydrates

➤ Disaccharides- Double Sugar



- **Maltose**- Glucose + Glucose
- **Lactose**- **Milk Sugar**= Glucose + Galactose
- **Sucrose**- **Cane sugar**= Glucose + Fructose



Type of Carbohydrates

➤ Polysaccharides- Many unit of Sugar



- Long Chain of sugar
- Glycosidic Bond/Linkage
- Non-Sugar(Do not taste sweet)

- Starch- Plant

- Glycogen- Animal Starch (Store in our liver)

- Cellulose- Outer layer of Plant

- Fibers



Protein

Also called-

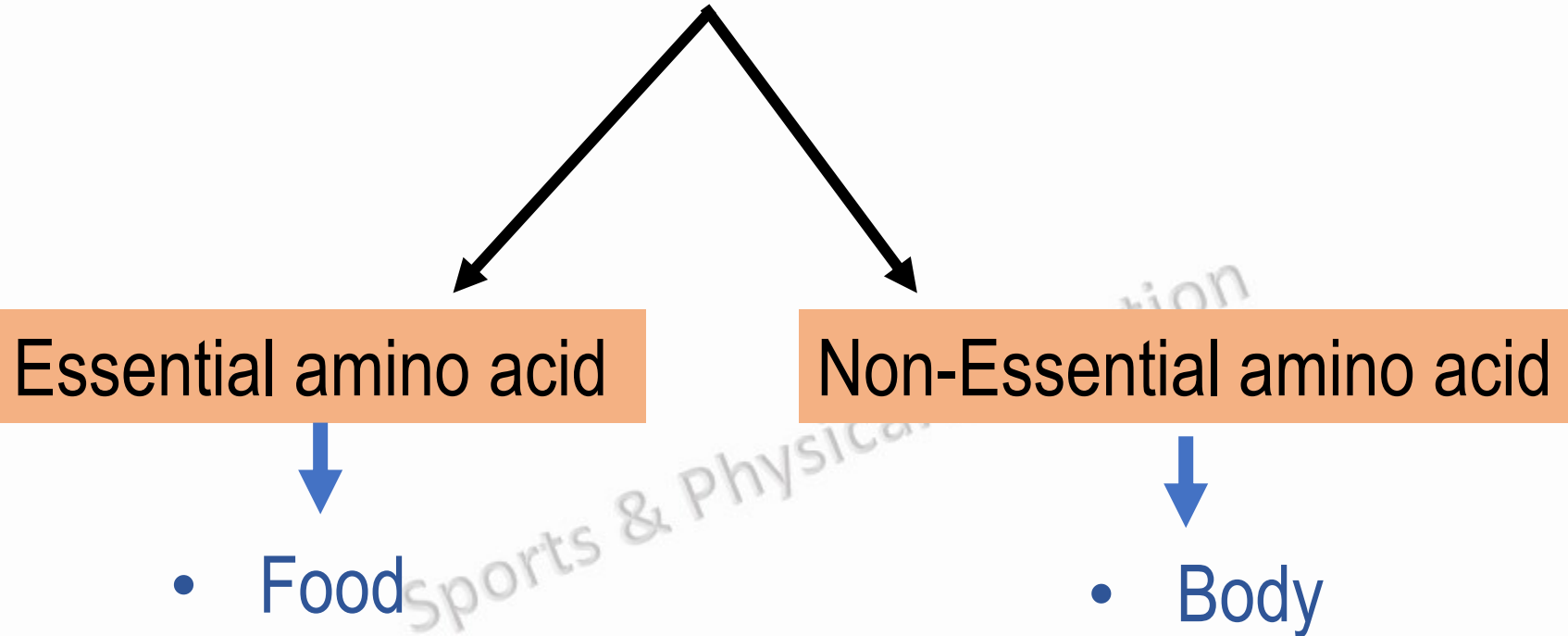
- **Body building Food.**
- **Polypeptide.**

Protein- Made of *Amino acid (20)*

- **Long Chain of amino acid**
 - **Bond- Peptide bond**
-
- **Amino Acid- *Carbon , Hydrogen, Oxygen, Nitrogen***
 - **15% of body is made by protein**



Amino Acid (20)



Leucin, Isoleucine, Lysin, Methionine, Phenylalanine, Threonine, Valine, tryptophan, Histidine

Alanine, asparagine, arginine, aspartic acid, glutamic acid, cysteine, glutamine, proline, glycine, serine, and tyrosine.



Protein

Animal Protein

Class A Protein



- Albumin
- Globulin
- Caseinogen
- Myosin
- Vitellin

Vegetable Protein

Class B Protein



- Gelatin
- Gluten
- Legumin



Protein Function

- **Help in building and repairing of body tissue.**
- **Provide energy.**
- **Physical growth.**
- **Help in formation of hormones and enzyme.**
- **Formation of antibodies.**
- **Regulation of body process.**

Protein

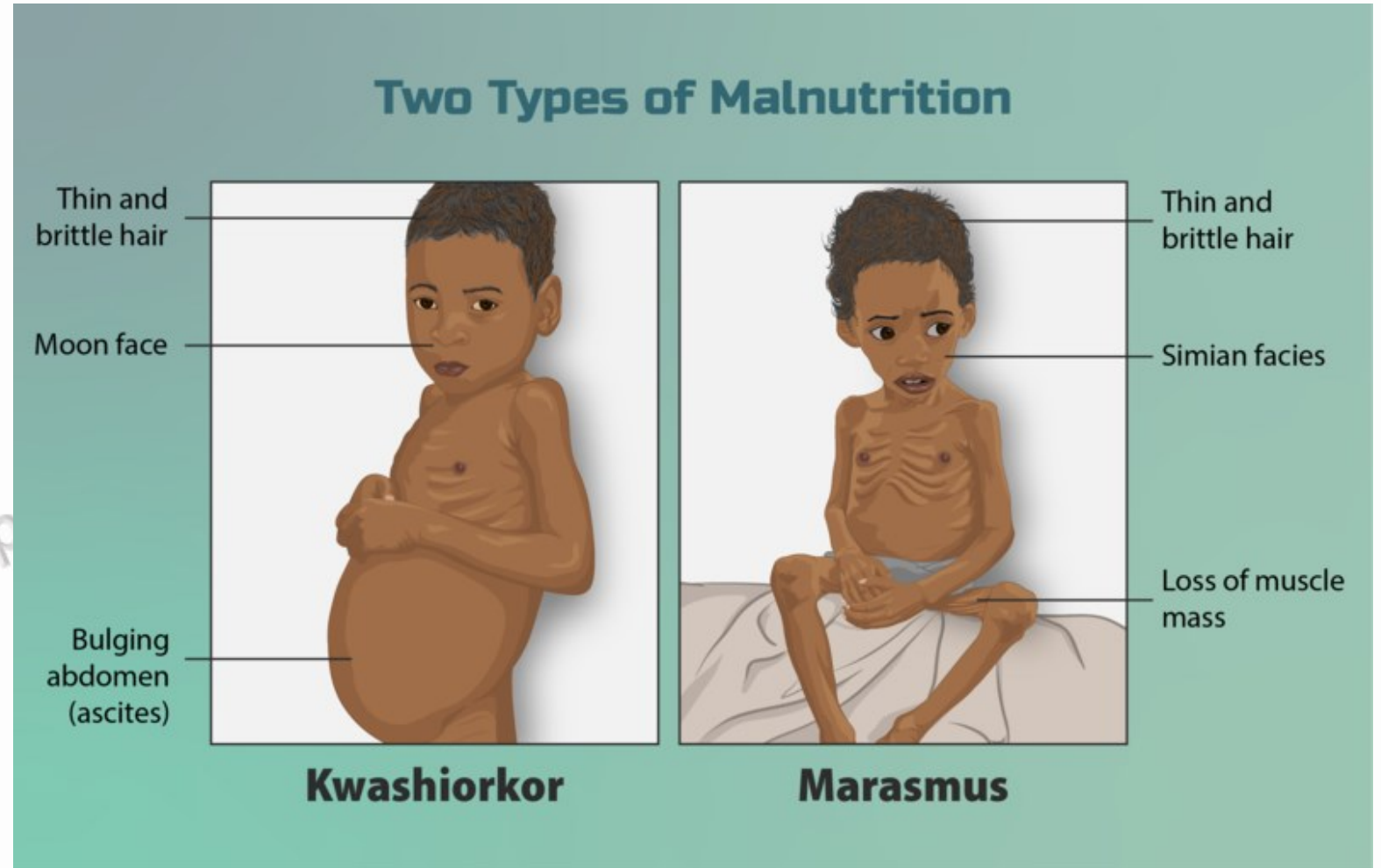


➤ Source-

- **Animal Source-** Meat, Chicken, Fish, Egg, Milk, Curd, cottage cheese
 - **Plant Source-** Soyabean, Pea, Pulses, Almond, Peanuts, other dry fruit, Wheat, **Grain, Vegetables** Etc. .
-
- Daily consumption of Protein- **60-70g**
 - 1g protein= **4.1 kcal**

Protein Deficiency

- Kwashiorkor
- Marasmus





Fat or Lipid

Fat- *Carbon, Hydrogen, Oxygen*

Less Compare to
carbohydrates

- **Ester bond of Glycerol and fatty acid.**
 - **1g Fat = 9.1 Kcal**
 - **50g** per day consumption



Fat

Saturated

Solid Form



- **Single bond** (Carbon)
- **Bad fat** (*Not easily digest*)
- **LDL** (*Low Density Lipoprotein*)
- **E,g- Butter, Ghee, Coconut oil, Palm oil, dairy product, Animal fat etc.**

Unsaturated

Liquid Form



- **Double/Tripplle bond** (Carbon)
- **Good fat.**
- **HDL** (*High Density Lipoprotein*)
- **E,g- Fish oil, Veg oil, Olive oil, almond, Cashew, peanuts.**

- Monounsaturated
- Polyunsaturated



- Omega-3 Fatty acid(linolenic)
- Omega-6 Fatty acid(linolenic)



Trans Fat

Fat that changed by a process called hydrogenation. It is mostly present in processed food pizza, burger, snacks, cookies etc. This fat is harmful to the body

➤ **Source of Fat-**

- Ghee, Butter, Fish oil , milk, cheese, dairy product, Animal fat, coconut oil, vegetable oil , nuts ,Olive oil, almond, Cashew, peanuts. etc.



Fat Function

- **Fat helps give your body energy. They can act as a larger, longer-lasting energy reserve.**
- **Regulation of body temperature.**
- **Protects your organs.**
- **Keeps cholesterol and blood pressure under control.**



Thank You for Watching



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