

Nutrition

Types of foods and Nutrients

<https://www.youtube.com/watch?v=yqq89jXQA58>

<https://www.youtube.com/watch?v=7CPdljtWvjc>

<https://www.youtube.com/watch?v=Kw9l1kKQsoQ>

<http://www.cbsnews.com/news/dr-dean-ornish-on-the-myth-of-high-protein-diets/>



Nutrition is not limited to food.

It covers all processes that are involved in the absorption use and elimination of substances that are necessary to keep our bodies functioning properly.

The major systems that deal with nutrition:

- ◆ Digestive
- ◆ Respiratory
- ◆ Cardiovascular
- ◆ Urinary system

Food: Any substance that is ingested and sustains life

Nutrient: A substance found in food that is used by the body to meet important needs.

6 types of nutrients:

- Proteins**
- Carbohydrates**
- Fats (lipids)**
- Water**
- Vitamins**
- Minerals**

- ❖ Proteins
- ❖ Carbohydrates
- ❖ Fats

These are all:

MACRONUTRIENTS

that our body needs to survive!

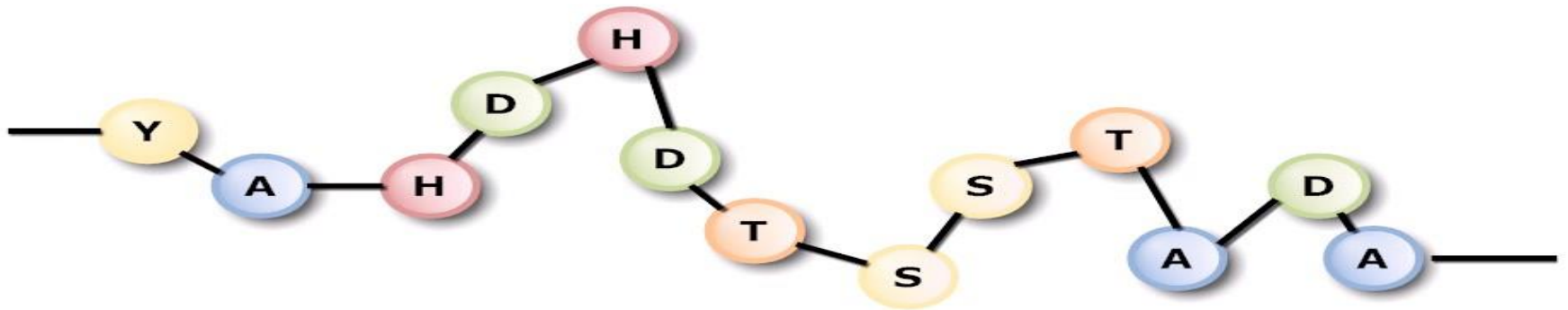
Proteins



- Many foods contain protein, but the best sources are beef, poultry, fish, eggs, dairy products, nuts, seeds, and legumes like black beans.
- Protein builds up, maintains, and replaces the tissues in your body. Your muscles, your organs, and your immune system are made up mostly of protein. Protein is used to provide energy.

Proteins are large molecules composed of chains of amino acids.

-There are 20 in total, the body can make 10 and the other essential amino acids must be consumed through dietary sources.



Carbohydrates

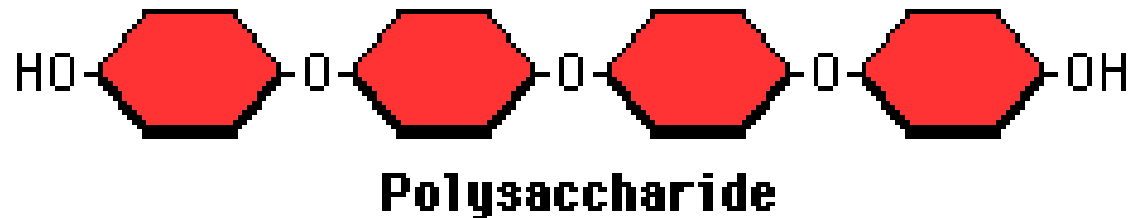
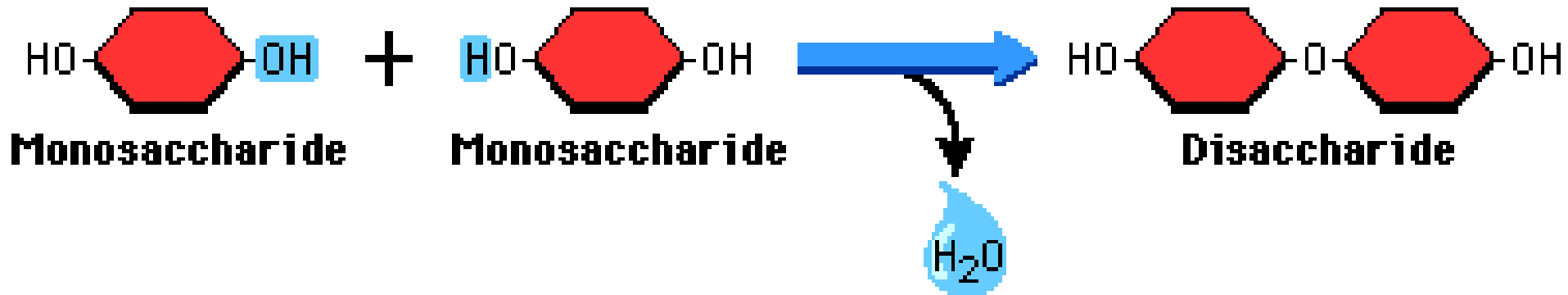
Most foods contain carbohydrates, which the body breaks down into simple sugars - the major source of energy for the body

There two major types of carbohydrates in foods: simple (mostly from refined sugar, fruits and milk)-these are easier to digest and complex (starches -bread, crackers, pasta, and rice)-these take longer to digest.



Ex. Glucose

Ex. Lactose



Complex sugars (ex. starch)

The facts about fats

- Fat is a component in food. Some foods, including most fruits and vegetables, have almost no fat. Other foods have plenty of fat.
- Store and provide energy/protect organs and insulate the body from the cold.
- They include nuts, oils, butter, and meats like beef

Types of fat:

- **Unsaturated fats**: found in plant foods and fish. these may be good for heart health.
- **Saturated fats**: These fats are found in meat and other animal products, such as butter, cheese, and all milk except skim
- **Trans fats**: These fats are found in margarine, snack foods, baked goods, and fried foods. Like saturated fats, eating too much can raise cholesterol and increase the risk of heart disease

Water

Essential to life

- Water is a major component of our body mass. We are made up of about 70% water. Without water the human body can survive only a few days. No other nutrient deficiency has such profound effects. Without water:
 - * our blood pressure rises,
 - * our heart begins to malfunction, and
 - * our kidneys shut down.



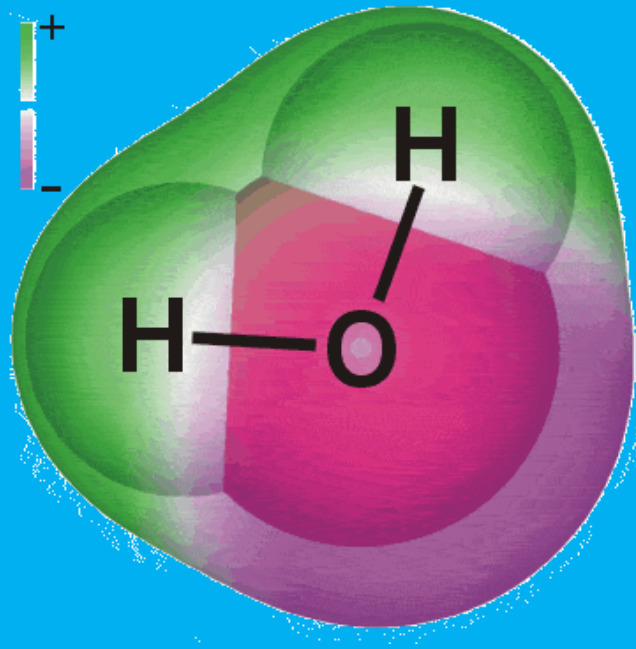
Essential functions of water:

- Transport of nutrients and waste products
- Regulates body temperature
- Essential to a number of chemical reactions
in the body

Sources: Fruits, fruit juice, soups

WATER

-A simple molecule



-Makes up about 70% of the weight of the human body.

-Transports nutrients and waste products

-Regulates body temperature

-Is essential in numerous chemical reactions in the body

Vitamins and Minerals are

MICRONUTRIENTS that your body
need
to survive

Don't forget to take your vitamins!

- **Vitamins** and minerals are substances that are found in foods we eat. Your body needs them to work properly, so you grow and develop just like you should. When it comes to vitamins, each one has a different role. For example:
- **Vitamin D** in milk helps your bones.
- **Vitamin A** in carrots helps you see at night.
- **Vitamin C** in oranges helps your body heal if you get a cut.
- **Vitamin E** in oils and leafy green vegetables help protect red blood cells.
- **B vitamins** in leafy green vegetables help your body make protein and energy.

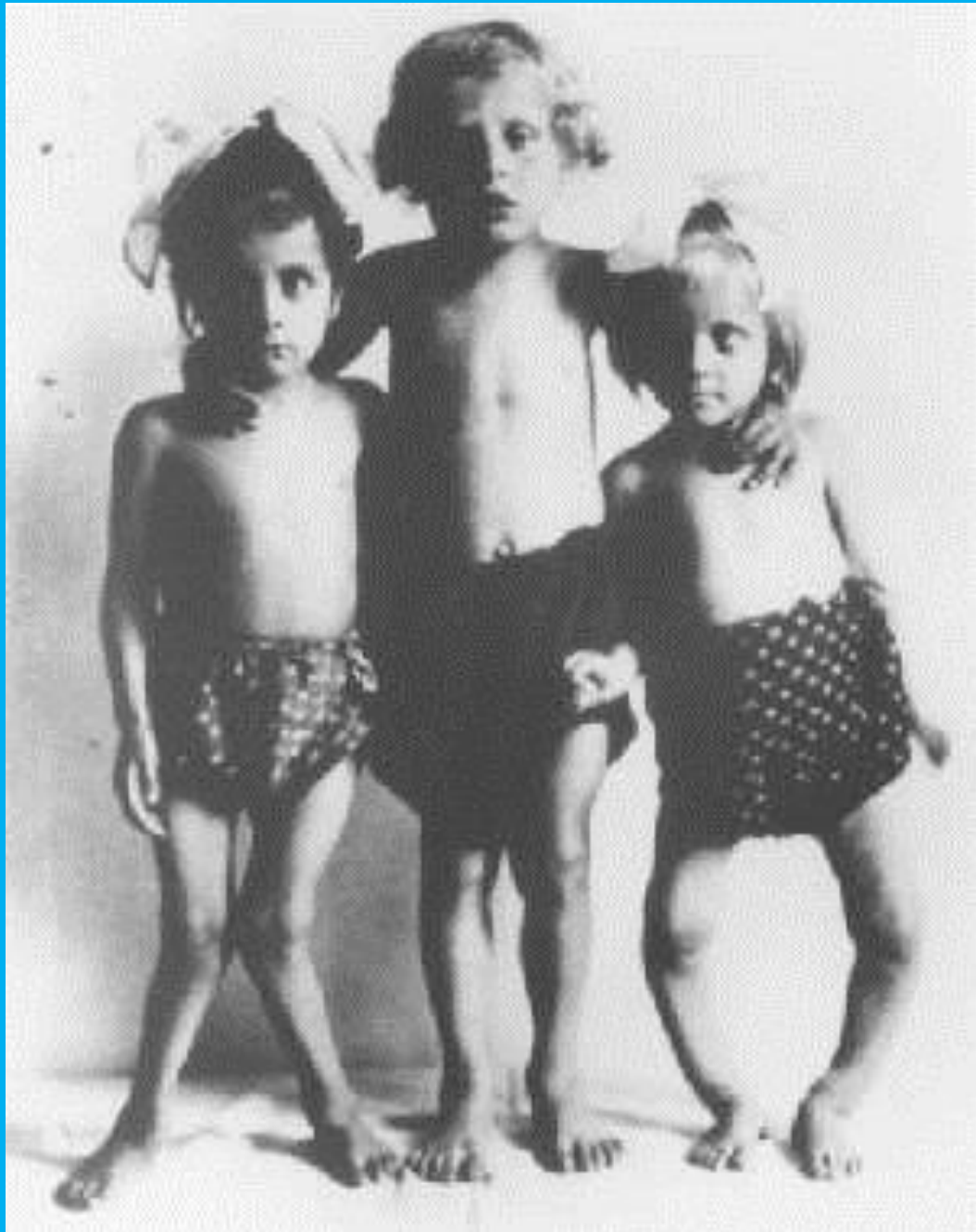


TABLE OF DEFICIENCY DUE TO VITAMIN

VITAMINS	DISEASES	SYMPTOMS
VITAMIN A	NIGHT BLINDNESS	POOR NIGHT VISION,LOSS OF NIGHT VISION
VITAMIN B	BERI-BERI	NERVOUSNESS,PARALYSIS,WEAK MUSCLES
VITAMIN C	SCURVY	BLEEDING OF GUMS ,SWELLING OF JOINTS
VITAMIN D	RICKETS	WEAK BONES,DECAYING TEETH
VITAMIN K	HAEMORRHAGE	CLOTTING OF BLOOD AFFECTED

Minerals

- Just like vitamins, minerals help your body grow, develop, and stay healthy. The body uses minerals to perform many different functions - from building strong bones to transmitting nerve impulses. Some minerals are even used to make hormones or maintain a normal heartbeat.



Calcium

- This mineral helps build strong bones. It also helps build strong, healthy teeth, for chomping on tasty food.

Foods are rich in calcium?

- dairy products, such as milk, cheese, and yogurt
- canned salmon and sardines with bones
- leafy green vegetables, such as broccoli

Iron

- The body needs iron to transport oxygen from your lungs to the rest of your body. Your entire body needs oxygen to stay healthy and alive

Foods rich in iron?

- meat, especially red meat, such as beef, tuna and salmon
- eggs, beans, baked potato with skins
- leafy green vegetables, such as broccoli
- whole and enriched grains, like wheat or oats

Potassium

- Keeps your muscles and nervous system working properly. Your blood and body tissues, such as muscles, contain water. Potassium helps make sure the amount of water is just right
- **Foods rich in potassium:**
 - bananas
 - broccoli
 - tomatoes

Zinc

- Zinc helps your immune system, which is your body's system for fighting off illnesses and infections. It also helps with cell growth and helps heal wounds, such as cuts.
- **Foods rich in zinc:**
 - beef
 - pork
 - lamb
 - legumes

Mineral	Deficiency disease	Symptom
Iron	Anaemia	Weakness
Iodine	Goitre	Swollen glands of neck, weight loss
Calcium	Decay of bones and teeth	Disability in children, weak bones, decay of teeth

Energy requirements

- Measured in Joules, Kilojoules or Calories
- 1 calorie = 4000 Joules = 4 Kilojoules
- We are always using energy so we need to replenish it!
- First source: Carbohydrates and Fats
- If there is not enough of the 1st source to meet energy needs, the body will turn to proteins.
- Water, Vitamins and Minerals are not energy sources.

Nutrient

Energy Content

Carbohydrate

9 Calories/gram

Fats

9 Calories/gram

Proteins

4 calories/gram

Water/Vitamins/Minerals

0 calories

Caloric Intake

Depends on many factors...age, weight (size), metabolism, physical activity, etc.

Physical Activity: the more active you are the more calories you require

Metabolism: faster metabolism will use up more calories

Size: A person of bigger size will require more calories

Caloric Intake

- Age: As we age we require less calories as our metabolism starts to slow down

Teenage girl: between 1800 and 2400 Cal (7200-9600 kJ)

Teenage boy: : between 2200 and 3200 Cal (8800-12800 kJ)

- Men require more calories than women.

Food Industry-Misleading the Public

- https://www.youtube.com/watch?v=kUKOt_SvTQc