

Animal Nutrition

Lesson: 7.1: Diet

Diet

Animals can only feed on other organisms, unlike plants. The food an animal eats every day is called a diet. Usually, most animals need seven types of nutrients for their diet:

1. **Carbohydrates:** They provide you with energy and gives the brain high energy demands.
2. **Proteins:** help your body repair cells and make new ones.
3. **Fats:** gives your body energy and to support cell growth.
4. **Vitamins:** helps shore up bones, heal wounds, and bolster your immune system. They also convert food into energy and repair cellular damage.
5. **Minerals:** keeps your bones, muscles, heart, and brain working properly.
6. **Water:** required for digestion, absorption, transportation, dissolving nutrients, and elimination of waste products.
7. **Fiber:** important for our digestive health and regular bowel movements, also helps you feel fuller for longer, can improve cholesterol and blood sugar levels, and can assist in preventing some diseases such as diabetes, heart disease, and bowel cancer.



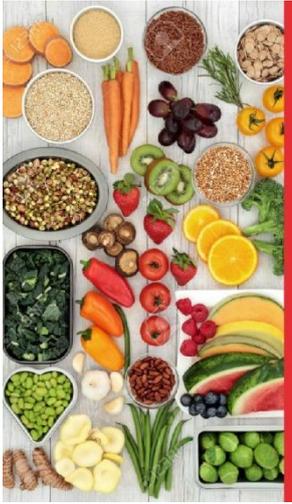
Balanced diet: A diet that contains all the main nutrients (carbohydrate, fats, protein, vitamins, minerals, fiber & water) in the correct amounts and proportions.

Energy Needs

Energy is used up every day. The amount of energy you use depends on your age, what gender you are, and what job you do. The energy you use every day comes from the food you eat. If you overeat some of the extra will be stored as fat, however, if you eat less, you won't be able to obtain enough energy you need which will make you feel weak.

Dietary requirements depend on your age, sex, and activity:

- The amount of energy needed is provided by our carbohydrate and fat intake
- The amount of energy we need tends to increase as we approach adulthood.
- The energy needs of adults go down as they age.
- Active people tend to need more energy than sedentary people.
- Females tend to have lower energy requirements than males.
- Pregnant women need extra nutrients for the development of the fetus (unborn offspring)



Nutrients

Food doesn't only provide you with energy. To be sure you eat a balanced diet you must feed in carbohydrate, fat, and protein. You will also need different types of vitamins and minerals, along with fiber and water. These substances are called nutrients. To have a well-functioning body you will need all the nutrients in the correct amount of proportion.



Vitamins

They are not digested or broken down for energy. Mostly, vitamins are not built into body structures. They are essential in small quantities for health, and is needed for chemical reactions in the cells, working in with enzymes.

1. Vitamins C:

- Other names: anti-scorbutic agent, ascorbic acid, calcium ascorbate, dehydroascorbic acid, sodium ascorbate.
- The importance of this vitamin is that it prevents scurvy
- Scurvy is caused by the lack of vitamin C in the diet. Symptoms include bleeding under the skin, swollen, and bleeding gums and poor healing of wounds
- Acts as a catalyst in cell respiration.
- Scurvy only occurs when fresh food is not available
- Cannot be stored in the body; daily intake needed

Vitamin D:

- The importance of this vitamin is that it prevents rickets
- Vitamin D helps the absorption of calcium from the intestine
- Natural fats in the skin are converted to a form of vitamin D from sunlight



Fiber

Fiber consists of material in food that cannot be digested, in particular cellulose from plant cell walls.

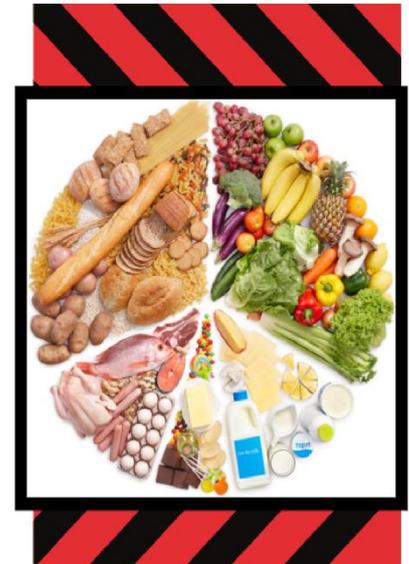
Sources of fiber include:

- Fruit
- Vegetables
- Cereals

Dietary fiber is important because it provides bulk, which helps the walls of the intestine move food and feces along the gut. Lack of dietary fiber can lead to constipation.

Special Requirements

- **Baby Needs:** The **calcium, phosphorus,** and **vitamin D** help to build up bones, and the **proteins** help the baby grow rapidly.
- **Young Children Needs:** Young children need **high energy** for muscular activity and **proteins** for growth.
- **Old People Needs:** Senior people need **vitamins** in order to stay healthy (fruits and vegetables), and **roughages** to activate their intestines.
- **Female Needs:** Females need more **iron** to replace the blood they lose during menstruation, and during pregnancy they need more **calcium, iron, phosphorus** and **proteins** to grow the embryo.
- **Male Needs:** **Proteins,** to build more muscles.
- **Heavy Worker's Needs:** People who work hard need **fats** and **carbohydrates** to produce energy they need for work.
- **Cold Countries:** For those who live in cold countries, they will need **fats** and **carbohydrates** to maintain body temperature.



Malnutrition

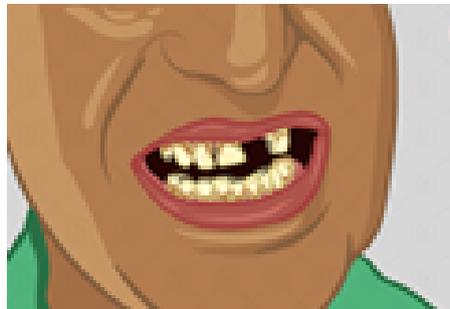
A condition caused by eating an unbalanced diet (food lacking one or more types of food or an increase in quantities of one or more types of food).

The effects of malnutrition in:

- **Starvation:** An expression refers to a massive lack of food of all types.
- **Heart Disease:** Eating too many fats which are rich in saturated fatty acids and cholesterol, may lead to a heart attack.
- **Obesity:** Eating too many fats and carbohydrates lead to their storage in the body mainly in the form of fats and this causes an increase in body weight.
- **Scurvy:** Not enough of vitamin C.
- **Constipation:** Due to malnutrition, the person is not getting enough indigestible material called roughages thus, resulting in lack of peristalsis leading to constipation.



Malnutrition in obesity example



Malnutrition in scurvy example



Malnutrition in starvation