

Essential Nutrients

Let's look at the basics of nutrition. Remember, when we talk about nutrition it must be based on food. Food provides both building blocks and energy to maintain all body cells. These building blocks are called *nutrients*. Getting necessary nutrients obtained from food prevents an imbalance of nutrients since often nutrients work together for maximum absorption. Nutrients are needed from infancy to adulthood for growth, maintenance and repair.

What is a *Nutrient*? A nutrient is a chemical substance obtained from food and used in the body to promote growth, maintenance and/or repair.

Generally they:

1. provide energy,
2. provide materials and factors for growth and maintenance,
3. act to regulate chemical processes in body.

When a nutrient is *essential* this means that the body cannot make the nutrient by itself or cannot make in a sufficient quantity and therefore must obtain that nutrient from food. These are *essential for life*. There are about 40 nutrients which are known to be essential.

For each essential nutrient there are a specific set of symptoms which define its characteristic deficiency disease. If the deficient nutrient is added back to the diet before permanent damage or death occurs, health returns to normal. For instance, a Vitamin C deficiency is called Scurvy which causes breakdown of tissues evidenced by spots on the skin, bleeding gums, loss of teeth, lethargy, depression, jaundice fever, and ultimately death. However if the person suffering from scurvy ingests a small amount of Vitamin C before it gets too bad the scurvy can be cured. Most nutrients were discovered when a cure for the deficiency disease was sought.

Essential nutrients are grouped into six classes including: carbohydrate, protein, fat, vitamins, minerals and water. Three of these groups are the energy-yielding nutrients or nutrients which when broken down produce energy for the body to use. The energy yielding nutrients are carbohydrate, protein and lipids which provide energy as measured in calories as follows:

- Carbohydrate produces 4 calories per gram of carbohydrate
- Protein produces 4 calories per gram of carbohydrate
- Fat produces 9 calories per gram of fat

The other three groups, vitamins, minerals and water, do not provide energy but they are essential to perform many other functions including getting the energy out of the energy yielding nutrients. Within each group of nutrient there are several individual nutrients such as the vitamin group has thirteen different essential nutrients. Remember, all *essential nutrients* are essential for life.



Cheryl C. Komline, MS, RD
Bernards Township Health Department
Basking Ridge, NJ 07920
P. 908.204.3069 F. 908.204.3075
www.bernardshealth.org

Contractual Health Agency for:
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