

Diabetes & Healthcare with a Nutrients Diet

Abstract

A healthy diet is a diet that maintains or improves overall health. A healthy diet provides the body with essential nutrition: fluid, macronutrients such as protein, micronutrients such as vitamins, and adequate fibre and food energy.

A healthy diet may contain fruits, vegetables, and whole grains, and may include little to no processed food or sweetened beverages. The requirements for a healthy diet can be met from a variety of plant-based and animal-based foods, although a non-plant source of vitamin B12 is needed for those following a vegan diet. Various nutrition guides are published by medical and governmental institutions to educate individuals on what they should be eating to be healthy. Nutrition facts labels are also mandatory in some countries to allow consumers to choose between foods based on the components relevant to health.

Introduction

Nutrition for kids is based on the same ideas as nutrition for adults. Everyone needs the same types of things, such as vitamins, minerals, carbohydrates, protein and fat. These are called nutrients. Children need different amounts of specific nutrients at different ages [1].

The best eating pattern for a child's growth and development considers the child's age, activity level and other characteristics. Check out these nutrition basics for kids, based on the latest Dietary Guidelines for Americans [2].

Food packed with nutrients with no or limited sugar, saturated fat, or salt added to it is considered nutrient dense. Focusing on nutrient-dense foods helps kids get the nutrients they need while limiting overall calories [3].

Human nutrition deals with the provision of essential nutrients in food that is necessary to support human life and good health. Poor nutrition is a chronic problem often linked to poverty, food security, or a poor understanding of nutritional requirements. Malnutrition and its consequences are large contributors to deaths, physical deformities, and disabilities worldwide. Good nutrition is necessary for children to grow physically and mentally, and for normal human biological development [4].

A balanced diet

Eating a healthy, balanced diet is an important part of maintaining good health, and can help you feel your best. This means eating a wide variety of foods in the right proportions, and consuming the right amount of food and drink to achieve and maintain a healthy body weight.

This page covers healthy eating advice for the general population.

People with special dietary needs or a medical condition should ask their doctor or a registered dietitian for advice.

1. Eat at least 5 portions of a variety of fruit and vegetables every day (see 5 A Day)
2. Base meals on higher fibre starchy foods like potatoes, bread, rice or pasta
3. Have some dairy or dairy alternatives (such as soya drinks)
4. Eat some beans, pulses, fish, eggs, meat and other protein

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5. Choose unsaturated oils and spreads, and eat them in small amounts
6. Drink plenty of fluids (at least 6 to 8 glasses a day)

Oils and spreads

Some fat in the diet is essential, but on average people in the UK eat too much saturated fat.

It's important to get most of your fat from unsaturated oils and spreads [5,6].

Swapping to unsaturated fats can help lower cholesterol.

Remember that all types of fat are high in energy and should be eaten in small amounts.

Nutrients

The seven major classes of nutrients are carbohydrates, fats, fiber, minerals, proteins, vitamins, and water. Nutrients can be grouped as either macronutrients or micronutrients. Carbohydrates, fats, and proteins are macronutrients, and provide energy. Water and fiber are macronutrients but do not provide energy. The micronutrients are minerals and vitamins [7,8].

The macronutrients (excluding fiber and water) provide structural material (amino acids from which proteins are built, and lipids from which cell membranes and some signaling molecules are built), and energy. Some of the structural material can also be used to generate energy internally, and in either case it is measured in Joules or kilocalories (often called "Calories" and written with a capital 'C' to distinguish them from little 'c' calories). Carbohydrates and proteins provide 17 kJ approximately (4 kcal) of energy per gram, while fats provide 37 kJ (9 kcal) per gram, though the net energy from either depends on such factors as absorption and digestive effort, which vary substantially from instance to instance [9,10].

Vitamins, minerals, fiber, and water do not provide energy, but are required for other reasons. A third class of dietary material, fiber (i.e., nondigestible material such as cellulose), seems also to be required, for both mechanical and biochemical reasons, though the exact reasons remain unclear. For all age groups, males on average need to consume higher amounts of macronutrients than females. In general, intakes increase with age until the second or third decade of life.

Types Nutritional diet

Vitamin

A vitamin is an organic compound required by an organism as a vital nutrient in limited amounts. An organic chemical compound (or related set of compounds) is called a vitamin when it cannot be synthesized in sufficient quantities by an organism and must be obtained from the diet. The term is conditional both on the circumstances and on the particular organism. For example, ascorbic acid (vitamin C) is a vitamin for anthropoid primates, humans, guinea pigs and bats, but not for other mammals. Vitamin D is not an essential nutrient for people who get sufficient exposure to ultraviolet light, either from the sun or an artificial source, as they synthesize vitamin D in skin. Humans require thirteen vitamins in their diet, most of which are actually groups of related molecules, "vitamers", (e.g. vitamin E includes tocopherols and tocotrienols, vitamin K includes vitamin K1 and K2). The list: vitamins A, C, D, E, K, Thiamine (B1), Riboflavin (B2), Niacin (B3), Pantothenic Acid (B5), Vitamin B6, Biotin (B7), Folate (B9) and Vitamin B12. Vitamin intake below recommended amounts can result in signs and symptoms associated with vitamin deficiency. There is little evidence of benefit when vitamins are consumed as a dietary supplement by those who are healthy and have a nutritionally adequate diet.

Minerals

Minerals are the exogenous chemical elements indispensable for life. Four minerals – carbon, hydrogen, oxygen, and nitrogen – are essential for life but are so ubiquitous in food and drink that these are not considered nutrients and there are no recommended intakes for these as minerals. The need for nitrogen is addressed by requirements set for protein, which is composed of nitrogen-containing amino acids. Sulfur is essential, but for humans, not identified as having a recommended intake per se. Instead, recommended intakes are identified for the sulfur-containing amino acids methionine and cysteine. There are dietary supplements that provide sulfur, such as taurine and methylsulfonylmethane.

Conclusion

The essential nutrient minerals for humans,

listed in order by weight needed to be at the Recommended Dietary Allowance or Adequate Intake are potassium, chlorine, sodium, calcium, phosphorus, magnesium, iron, zinc, manganese, copper, iodine, chromium, molybdenum, selenium and cobalt (the last as a component of vitamin B12). There are other minerals which are essential for some plants and animals, but may or may not be essential for humans, such as boron and silicon. Essential and purportedly essential minerals are marketed as dietary supplements, individually and in combination with vitamins and other minerals.

Although as a general rule, dietary supplement labeling and marketing are not allowed to make disease prevention or treatment claims, the U.S. FDA has for some foods and dietary supplements reviewed the science, concluded that there is significant scientific agreement, and published specifically worded allowed health claims. An initial ruling allowing a health claim for calcium dietary supplements and osteoporosis was later amended to include calcium supplements with or without vitamin D, effective January 1, 2010. Examples of allowed wording are shown below. In order to qualify for the calcium health claim, a dietary supplement must contain at least 20% of the Reference Dietary Intake, which for calcium means at least 260 mg/serving.

Acknowledgement

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Conflict of Interest

None

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