THE BALANCED DIET

According to nutritionists, the balanced diet has:

34% of the calories coming as cereals and grains
34% as fruits and vegetables
16% as dairy products
16% as protein-rich servings

However, it is estimated that 38.8% of the calories in the actual diets consumed in the United States come as other foods – not within the four basic food groups. These are such things as confectionary goods, snack chips, high fat and sugar-rich snack foods, and sweetened beverages.

BACK TO THE BASICS

The Building Blocks of Nutrition.

The Macronutrients
Proteins, Carbohydrates, Lipid

Protein:

- ✓ Building blocks of the major solid matter of our muscles, organs, bones, teeth, skin, nails and hair.
- ✓ Blood also contains proteins in the form of hemoglobin, enzymes, natural antibodies and hormones.
- ✓ Without protein, the building and repairing of all bodily tissues and fluids would not be possible.
- ✓ Proteins are made up of amino acids: essential and non-essential.
- ✓ Essential amino acids cannot be synthesized by the human body, so they must be obtained from the diet.
- ✓ There are two types of protein: complete and incomplete.
- ✓ Complete protein sources contain all of the essential amino acids. (Animal proteins such as meats, eggs, milk and fish.) Incomplete proteins are missing one or more of the essential amino acids. (Plant proteins such as vegetables, grains and legumes.)

Carbohydrates:

- ✓ Includes: simple carbohydrates (sugars), complex carbohydrates (starches), and the plant fibers (cellulose, hemicellulose and pectin).
- ✓ These dietary carbohydrates are the foundation of the food chain and the principal source of energy for all body functions, including that required for the absorption of other foods.
- ✓ Carbohydrates are the bodies preferred source of energy.
- ✓ Carbohydrates are the only source of energy used by the central nervous system and the retina of the eye. This is why individuals who have trouble regulating their blood sugar often experience visual and mental/emotional symptoms.
- ✓ Carbohydrates can be stored in almost unlimited amounts as body fat, and in more limited quantities as glycogen in the liver and muscles.
- ✓ Carbohydrates are responsible (with proteins) for forming substances that are essential to fighting infection, lubricating joints and maintaining the health and growth of bones, cartilage, tendons, skin and nails.

✓ **Simple carbohydrates:**

- Monosaccharides are naturally occurring sugars such as glucose and fructose.
- Glucose (a.k.a., dextrose, corn sugar, grape sugar) is the form of carbohydrate that is found circulating in the blood (blood sugar). It is also the carbo used by cells for energy and it is absorbed directly into the bloodstream when consumed as it requires no digestion.
- Fructose (levulose fruit sugar) is found in honey, ripe fruits and some vegetables (such as corn) and is not absorbed directly into the bloodstream. Consequently it is absorbed at half the rate of glucose. Fructose raises the blood sugar less dramatically, and is less insuligenic. This translates as less stress to the pancreas and blood sugar regulation mechanisms and as less fat provoking, yet fructose remains up to twice as effective in appetite suppression as most other forms of simple sugars and artificial sweeteners.
- Galactose is produced during the digestion of lactose (milk sugar) and has an absorption rate similar to that of glucose.

- ✓ **Oligosaccharides** are combinations of two or more monosaccharides.
    - Table sugar, sucrose, is two molecules of glucose.
    - The natural sources of sucrose include sugar cane, sugar beets, sorghum, molasses or maple sugar.

- ✓ **Maltose** (malt sugar) is consumed in malted beers, malted snacks and some breakfast cereals.
    - Maltose, a short chain of glucose molecules is also an intermediate product in the digestion of starch, and is commonly produced from the partial digestion of such grains as barley and rice.
    - Maltose is an excellent source of energy and, along with fructose, is commonly used in meal replacement beverages and high energy food and beverage products for athletes.
    - Because of the fermentation process used in the partial breakdown of the starches to yield the maltose, some people who are highly sensitive to yeast residues and ferments may not tolerate this source of carbohydrate well.

✓ **Complex carbohydrates:**

- Polysaccharides are the complex compounds also known as starches.
- They are composed of sugars, but are not sweet or water soluble.
- Starch is a polysaccharide composed of a long chain of glucose units.
- Amylose, amylopectin and dextrin are types of polysaccharides.
- Glycogen (also called the animal starch) is synthesized in the human liver and in muscle tissue from glucose, where it provides an immediate source of energy when the demand arises.
- Because these carbohydrates are complex, they are absorbed more gradually than the simple sugars and as a result, they have many advantages over simple sugars as a source of food energy.

✓ **Fiber:**

- Fibers are the portions of plants which cannot be broken down by human enzymes or digestive juices.
- Fiber can be divided into two types: soluble (dissolves in hot water) and insoluble (does not dissolve in water at all).
- The net effect of the sufficient intake of these plant fibers is to enhance elimination and detoxification, lower blood fats, balance blood sugars, boost one's energy, improve immunity and minimize risk to digestive and bowel disorders and even colon (and perhaps other) cancers.
- Fiber deficiency in disease: decreased fiber intake equals an increase in the incidence of constipation, diverticulosis, colon cancer and gastrointestinal disorders. Less fiber-rich foods are more processed, packaged, convenience foods.
- You can improve your fiber intake most economically and most effectively by eating more whole, unrefined grains, legumes, seeds, sprouts, vegetables and fruits.

✓ Carbohydrates, Health and Disease

- Sedentary people who consume a large portion of their calories as simple and refined carbohydrates, will likely nurture sluggish metabolisms and therefore will encounter weight and health problems no later than the third decade of life.
- The refined food diet, typical of many children today, has produced increasing incidences of weight and cardiovascular problems at very early ages.
- Active persons, eating a diet high in natural complex carbohydrates have an active and more efficient metabolism and do not have to worry about these carbohydrates turning to fat.
- Unrefined complex carbohydrates are broken down and absorbed slowly and evenly.
- Refined carbohydrates (both sugars and processed starches) are absorbed so rapidly that it can overload the blood glucose regulating mechanisms.
- The speed of absorption of refined carbohydrates and the relative absence of the vitamin and mineral cofactors required for their proper metabolism, play pivotal roles in the production of body fat, cholesterol and declining health.

Lipids (Fats and Oils)

- ✓ Lipids are the biological substances which are least soluble in water.
- ✓ Substances classified as lipids include: triglycerides, phospholipids, cholesterol, fatty acids and prostaglandins.
- ✓ There are two major classes of dietary lipids: saturated and unsaturated.
- ✓ These terms refer to the chemistry of the molecules (hydrogen bonds).
- ✓ Saturated fats tend to aggregate, and are found in pork, beef, mutton, eggs, and dairy products. Because of this tendency to stick together, they may be deposited within cells, organs and arteries and arterioles. (Note: refined sugars and refined starches are also converted to saturated fats.)
- ✓ Unsaturated fats aggregate much less readily and have very low melting points, so they are more fluid.
- ✓ There are two classes of unsaturated fats: monounsaturated (MUFA's) and polyunsaturated (PUFA's).
- ✓ The most important MUFA is oleic acid which is found in olive, almond, canola and other seed oils. Oleic acid stimulates bile flow from the gallbladder, is thought to help control possible yeast overgrowth in the intestines and is the major fatty acid found in the secretions of the human skin follicle glands.

- ✓ The naturally occurring PUFA's are extremely important in nutrition and health and they include both of the two essential oils: linoleic acid (LA) and Linolenic acid (LNA) and their precursors, gamma-linoleic acid (GLA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).
- ✓ The best dietary sources of EFA's include: fresh seeds, fresh nuts, legumes and lentils, sprouted grains, green leafy vegetables and fresh coldwater fish.
- ✓ Essential fatty acids enhance oxygen use (energy production) in the cell. The serve as important cellular structural elements.

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