

Label Reading

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Label Terms

Serving Size: The Serving Size is somewhat arbitrary. Manufacturers will often design their labels around a small serving size (i.e., 30 g of cereal) so they can show fewer calories, less fat and sodium, etc. on the label. Therefore, be aware of how your “personal” serving size differs from their “suggested” serving size to determine the actual numbers of nutrients (i.e., calories, fat, sodium, etc.) you are eating.

Calories: Calories shown are the number of calories for a defined serving size. A calorie is a unit measure of the energy created by the body from the food eaten. It is recommended that an active adult eat 15 calories for each pound of body weight (150 lbs. active adult would therefore require 2,250 cal./day). It is recommended that an inactive adult eat 13 calories for each pound of body weight (150 lbs. inactive adult would therefore require 1,950 cal./day). One of the keys to good nutrition is to consume foods that have a high nutrient to calorie ratio. Those foods are vegetables, fruit, whole grains, and fish. Processed foods that are low calorie often also have a low nutrient value.

Calories from Fat: This is the total number of calories coming from fat. This number is misleading for two reasons. First some people assume that foods whose calories don't come from fat are not as likely to put “weight on”. A diet very high in simple carbohydrates is also a major cause of weight gain (esp., “around the middle”). To determine calories from carbohydrates multiply the total grams of carbohydrates by 4. The second reason is that how much fat we take in is not necessarily as much of an issue as what kind of fat we take in. Hydrogenated oils high in trans-fatty acids are very harmful; saturated fats and Omega-6 fatty acids are consumed at too high a quantity in our diet and can be harmful in excess.

Daily Value: The % of Daily Value defines the percentage of a particular nutrient that the FDA suggests an average adult consume in a day. As an example, of all of the foods you eat in a day, no more than 30% should come from fats. For those with hypertension and high cholesterol try to keep sodium and cholesterol for each serving around 5% of FDA standards, but no more than 20% (The daily total should not exceed 100%).

Total Fat: This statistic can be somewhat misleading. It tells you the total amount of fat in a product, but leaves out the important information about the type of fat. It is more important to know the level of trans-fatty acid, Omega-6 fatty acids, and Omega-3 fatty acids. Still for someone challenged with obesity this number should remain low, but not too low. My suggestion when trying to lose weight is to eat low fat alternatives, not no-fat alternatives. A diet that is too low in fat can sometimes lead to eating excess quantities of carbohydrates due to a decrease in the level in satiation. It is important to eat whole foods, and non-fat food is missing an important component...the fat (as well as enzymes and some vitamins and minerals). Whole foods contain the right combination of nutrients for our body to assimilate food properly. The FDA suggests a diet containing about 30% fat; 20-25% is probably wise for most people.

Saturated Fat: Saturated fat is listed as a separate component of fat, because high saturated fat diets are implicated as a risk factor in heart disease and stroke. Many people need to eat less saturated fat, but it is important to recognize that it is even more important to eat less hydrogenated fats (a synthetic saturated fat). To find out the number of saturated fat calories in a product, multiply the number of grams by 9.

Unsaturated Fat: This nutrient is voluntarily reported. Unsaturated fat comes in two kinds: poly-unsaturated (i.e., soy, corn, and flax), and mono-unsaturated (i.e., olive, peanut, and canola). Unsaturated fats are often thought to be better, and less linked to heart disease and stroke. This is often true, however they are less stable, and more susceptible to deterioration, and to being turned into trans-fatty acids or synthetic polymers (esp., poly-unsaturated oils). The two main culprits are storage and heating. Poly-unsaturated oils should be stored in the refrigerator or freezer, and not heated above 120 degrees (NO frying with corn or soy oil!). Mono-unsaturated oils should be stored in a cool place or in the refrigerator, and should not be brought over 320 degrees (If you want to sauté with olive oil, use a water sauté method).

Cholesterol: Cholesterol is a type of lipid like fats. Cholesterol is crucial for proper functioning of the brain, liver, and hormonal systems. While it is true that too much cholesterol can lead to high blood cholesterol, which can lead to higher risk of heart disease or stroke, it is important not to cut cholesterol out of your diet completely (unless you have a heart or stroke condition which is grave). There are two types of blood cholesterol we look at HDLs (thought to

be beneficial), and LDLs (thought to be potentially harmful). Saturated fats and hydrogenated oils can increase LDL levels; while mono and poly-unsaturated can increase HDL levels.

Sodium: Sodium is an important mineral in our bodies. It is needed for many functions. In certain forms like Sodium Chloride (table salt) sodium has been implicated in increased blood pressure, a major culprit in heart disease, stroke, diabetes, kidney disease, and many other degenerative disorders. For this reason sodium level should not be too high. The FDA suggestion is no more than 2,400 mg per day.

Total Carbohydrate: This figure represents the total number of carbohydrates. Most food pyramids suggest that carbohydrates represent the vast majority of caloric intake. It is important that much of this intake come from complex carbohydrates (vegetables, fruits, and WHOLE grains). A diet high in refined carbohydrates (white flour and rice, refined sugar and other refined sweeteners (i.e., high fructose corn syrup, and many pastas and breads) is associated with hypoglycemia, diabetes, obesity, and cardiovascular problems. Excess carbohydrates (esp., simple) are a risk factor in obesity and can cause rapid mood swings. Optimally 50-70% of the diet should come from complex carbohydrates.

Dietary Fiber: Dietary Fiber has been found to reduce the risk of heart disease and cancer (esp., colon cancer). Vegetables, fruits, whole grains, and legumes are excellent sources of fiber. Processed foods typically have fiber added to them to increase this “nutrient”.

Sugars: This figure represents the content of not only added sweeteners, but also of simple sugars that are naturally occurring. This is another good number to keep low. It is important to get most of your carbohydrate intake from complex carbohydrates and less from simple sugars. The majority of simple sugar intake should come from fresh fruits.

Protein: Protein is an extremely important nutrient. The amino acids in protein are the building blocks of our cells. There are 20 amino acids that our body utilizes. Twelve of those amino acids our body can produce on its own. The other eight are called essential amino acids and we must get them from our food. Good sources of protein are legumes, nuts and seeds, animal products, and in fact plants contain many of the essential amino acids. The most complete source is animal products, however by eating a varied vegetarian diet all of the essential amino acids can be obtained (this is typically done by eating both

legumes and whole grains). The typical American diet has far too much protein in it. Some researchers say that we need only 4 oz. of concentrated protein per day, and that more than 8 oz. can cause some deleterious effects (like leaching of Calcium, causing osteoporosis; and high blood acidity). However some people (esp., vegetarians) can get protein deficiency, causing symptoms like fatigue, hypoglycemia, and decreased immune function. Legumes, whole grains, and wild fish are among the best sources of protein.

Vitamins & Minerals: It is important to get a balance of all the necessary vitamins and minerals. The best way to do that is to eat a varied, balanced whole foods diet.

Recommended Daily Allowance (RDA): The recommended daily allowance is the minimum daily intake of a particular nutrient before your body would be deficient in that nutrient. It is NOT the optimal level of a nutrient, but the MINIMAL level.

Organic: The term "Organic" is defined by the 600+ page Federal Organic Standards Act document, which addresses both plant and animal farming practices. Growing plants organically means that among other things: Harmful chemicals; Genetic engineering; and Irradiation may not be used; and Crop rotation must be used. Raising animals organically means among other things that animals are: raised on organic vegetable feed, without hormones and anti-biotics and are raised humanely with room to move.

Wild Fish: Wild fish is not farm raised. Farm raised fish will usually have: higher levels of Saturated fats and Omega-6 fatty acids; lower levels of Omega-3 fatty acids; anti-biotics; artificial coloring (esp., salmon); hormones; be genetically modified; have some health problems (due to sea lice and crowded conditions); and cause deleterious effects to the surrounding environment.

Hydrogenated and Partially hydrogenated oils: Hydrogenation of fats alters their chemical structure. Turning a poly-unsaturated or mono-unsaturated oil, into a synthetically saturated oil. This has a good effect and a number of bad effects. On the positive side, the oils won't spoil as easily (a major issue for poly-unsaturated oils); some say hydrogenated oils have an unlimited shelf life. On the negative side:

1) these oils have no nutritive value - their essential fatty acids have been destroyed; 2) they often contain trace amounts of nickel and aluminum which are by-products of the refining process; 3) they contain trans-fatty acids, which effect cholesterol levels raising LDLs and lowering HDLs; 4) they inhibit the

Liver's detoxification function; 5) they change the permeability of cell membranes -which among other things may increase allergic reactions and decrease immune function; 6) and lastly they may reduce the Heart's ability to function because trans-fatty acids breakdown more slowly, and the Heart uses the by-products of synthesized essential fatty acids as its favorite fuel. Trans-fatty acids appear to be such a large problem that the country of the Netherlands has banned the sale of all margarine containing trans-fatty acids

Additives to avoid:

Hydrogenated Oils: Already discussed above.

Artificial Colors: Many are carcinogenic and allergenic; and may contribute to hyperactivity, learning deficiencies, and difficulty concentrating.

Nitrites and Nitrates: These are preservatives that can be converted to nitrosamines in the body, a highly carcinogenic classification of compounds

Sulfites: Another preservative (typically used in cut potatoes, fruits and wine). Can cause allergic reactions in some people (esp., those with asthma).

Sugar and Sweeteners: Already discussed. Please note that the more refined sweeteners (refined sugar, and high fructose corn syrup) are somewhat more of a concern than the more natural sweeteners (Rapadura sugar, maple syrup, honey, molasses, brown rice syrup, barley malt syrup, date sugar, fruit juice concentrate, and fructose).

Artificial Sweeteners: Most commonly used are Saccharin and Aspartame. Saccharin is linked with cancer and genetic mutations in laboratory animals. Aspartame is newer and not as widely studied, but has been linked to brain tumors, and liver abnormalities in laboratory animals. Aspartame is contraindicated in people with PKU (phenylketonuria), pregnant women, and children under seven. A new sweetener, Acesulfame K (Sunette or Sweet One), has been found to cause brain tumors in laboratory animals.

MSG: Is a flavor enhancer, which can give symptoms such as headaches, agitation, increased heart rate, tightness in the chest, and tingling muscles or skin.

Other Preservatives: (i.e., BHA, BHT, and EDTA) These are typically used to help prevent rancidity in oils and grain products. They may be toxic to the liver and kidneys. They are known to cause allergic reactions and neurotoxic

effects in some people. In research studies BHA and BHT have been shown to cause cancer. BHT is banned in England.

Artificial Flavors: This is the most numerous of all of the food additive categories. Their only use is as a cost cutting measure. Some people have exhibited behavioral changes and had allergic reactions to some flavorings.

Refined Flour: While not technically a food additive this processed food is so rampantly used, and is the main cause of obesity when overused. Due to its low fiber content it can be responsible for constipation and diverticulitis.

Salt: (in excessive amounts) Salt is essential to the proper functioning of the human body, however eating too much can cause fluid retention, increase blood pressure, influence a woman's menstrual cycle, and possibly cause emotional irritability.

Olestra: Olestra is a synthetic fat substitute. It is not absorbable by the body and passes through. Olestra can give digestive symptoms including cramping, diarrhea, and fecal incontinence when ingested.

External Food Additive Issues:

Food Waxes: Food waxes on produce are problematic, because they may contain potentially harmful pesticides which are difficult to wash off. **Food**

Packaging: My primary concern with food packaging is plastics (esp., plastic wrap). Plastics can leach and "off-gas" chemicals into food (esp., when heat is applied to the food wrap, or when a product like water or a soft drink has been sitting in a plastic bottle for a long time).

Additionally

There are three additional concerns I would like to mention. First, it is important to note that there are some hidden food additives. They are called "indirect additives" and aren't labeled in the ingredients. These contaminants occur from "pre-prepared" ingredients, chemicals used in processing and from packaging. Secondly, additives are tested by themselves, not in combination. A 1976 study published by the Journal of Food Science tested lab animals (rats) given three additives. When they were given the additives separately there were no remarkable changes. When two of the substances were given in combination the animals became ill. When the three additives were given together all of the test subjects died. Lastly, between 1949 and 1982 26 additives were banned by the FDA. However, since 1982 ZERO additives have been

banned. I think it is wise to ask ourselves, "Why over the last twenty years when our technology has advanced so much were there no new discoveries of harmful chemicals?" Are they really all safe, or is there a conflict of interest when executives of chemical companies are appointed to important positions at the FDA.

References

Haas, E.M. (1999). The Staying Healthy Shopper's Guide. Celestial Arts, Berkeley.

Steinman, D. & Epstein, S.S. (1995). The Safe Shopper's Bible. MacMillan, New York.