Calories

By Bryon Verhaeghe

We are bombarded by advertisements and labels stating that a particular food is calorie reduced, low fat, weight watching, slim or light.
The underlying message is that these foods are "free" when it comes to weight gain. Eat all you can and not gain weight. This is not true. Buyers beware!

A calorie is defined as a unit of heat. **"Calor"** is Latin for heat. One calorie is defined as enough energy to raise a gram of water by one degree Celsius. Also, calories can be converted into a unit of measure called watts. We buy the electricity for our homes in kilowatts. The cost of our food is not based on calories. Some foods are expensive calories and some foods are cheap calories. Calories sustain life.

What Calories Do?

Human beings need energy to survive, to breathe, move, pump blood and they acquire this energy from food.

We store our calories in two forms; glucose and fat. Glucose in medicine may also be called dextrose and is the most important carbohydrate in body metabolism. It forms during digestion of larger sugars (polysaccharides), especially starch. In the liver these sugars are converted into glycogen under control of insulin from the pancreas. If the pancreas cannot keep up we excrete the sugars into the urine, as in diabetes. In our tissues the glucose is used up or stored as fat.

Well this looks pretty simple; just don't eat starch and lose fat. But think about it. Imagine restricting the electricity to your home, so that when you turn the stove on, all the lights go out. This is what most weight loss foods and programs are; starvation while having a full stomach. This is one of the definitions of diabetes; the cells of the body are starving while the blood is full of sugar.

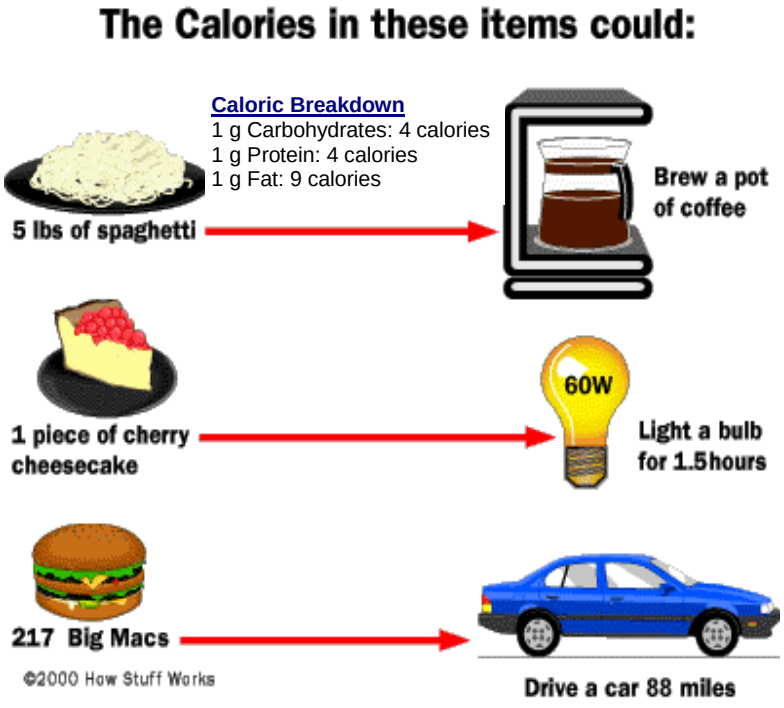
Brain fog may set in as the day progresses and we are ready for a nap in the afternoon. It doesn't take full blown diabetes to notice these effects. We could burn energy the way the oven runs up the power bill if we had the stamina to go the distance. Dancing after work instead of collapsing on the couch.

Short bursts of energy come from sugar. This is accentuated with adrenaline, another hormone. Many competitive power lifters use this fact and have someone punch them in the face to stimulate adrenaline immediately before they come out and lift six hundred pounds. Of course they can only do this once and are out of energy. Over many hours of using sugar and adrenaline for energy we develop adrenal burn out. After many months or years we may eventually develop diabetes.

Long-term endurance comes more from fat and oil stored as energy. Carbohydrates are converted into oils with a few double bonds, as the double bonds increase, the oil becomes a fat. These fats are denser and also harder to burn.

Different types of fat exist and some burn more easily than others. The fats derived from vegetable and starch, are more easily burned than fat derived from gluten grains. This is why it is hard to lose weight if it is put on with pasta, but easier if it was put on with rice or potatoes.

Also we have different types of muscles; smooth and striated. Smooth as in the digestive tract, and striated as found in the legs and chest. The striated muscle fibres are also split up and described as fast twitch and slow twitch. The fast twitch muscle fibres have low stamina, as what a power lifter would develop in his legs. The slow twitch is what an endurance runner would develop in his legs. Fast twitch is bulky, slow twitch is leaner. We don't notice it but the slow twitch is darker in appearance because it contains more mitochondria. We see this in chicken breast (white) and chicken legs (dark) meat.



Many people remember mitochondria from high school studies. These are microscopic filaments inside the cells of the body. They are in every cell of the body except red blood cells. All energy for life is produced by the mitochondria and this energy molecule is called ATP. This is like a car engine generating energy and heat, except that a car engine uses only gas. We have two energy sources; fat and sugar. The more mitochondria in each cell the more stamina we have and the darker the muscle. Chicken breast has few mitochondria in each cell and it appears white. The legs of chicken contain many per cell and appear dark. When a bird flies for a long period, as in migration, their breast muscles develop slower twitch muscle fibres that contain more mitochondria, as in duck breast. It also contains more of the fat as an energy source. This is why the chicken breast is dry and the duck breast is oily. Fat is very dense; oil is less dense and easier to burn. This is one reason why salmon oil is better for us than beef fat. Many studies indicate the benefits of oils, and include the oil in duck meat.

There are some studies that find calorie reduced foods may lack nutrition. As in the term 'empty carbs'. Just like a diabetic, we have a full stomach but are actually malnourished. The French eat rich foods and yet enjoy top-notch health. Researchers found that their health was due to a reduced size of portion. So, a small piece of chicken leg is healthier than a large piece of chicken breast. This is why a chicken leg has more calories than a chicken breast; the mitochondria are rich in nutrients and calories.

Long-term consumption of the lean white chicken breast promotes the growth of muscle fibers that are low in mitochondria. Once this has happened we need a spike in adrenaline to get moving. This is not practical to our hormonal system and we run sluggish most of the time. Also during this period we are burning fewer calories and weight becomes harder to shed. This is why the Atkins diet is so successful for some people. Shifting from the nutritionally empty low calorie foods to the nutritionally rich and tasty foods helps to get us going and from this we burn more calories. The net result is weight loss. At least while we watch the volume of these super rich foods. **The most nutritious foods for humans are nuts and seeds.** These foods are also higher in calories Hemp seeds have marvelled the medical researchers for their balanced omega oils and protein profiles.

Calorie reduced diets promote healthy bodies. But be careful not to fill up with empty calories. Fruit may have fewer calories, but we run on empty. Starch is the main source of our energy, just don't over do it. It is a help to the liver, pancreas and hormones if we combine the carbs with some fat to slow down digestion and absorption. The high fat and low volume of sour cream fits perfectly. This is why sour cream (24% fat) is used sparingly with beet borsht, potato perogies, baked potatoes, cabbage rolls etc. The fat keeps the food longer in the stomach acids, which helps for better particle breakdown and slower release into the blood. Also the rise of blood sugars is modest and insulin doesn't spike. Once insulin spikes in the morning the whole day is a roller coaster, as what happens when we eat fruit for breakfast. There is a benefit to blood sugar control by putting a little fat with each meal. The French are known for tasty foods, and surprise, good health. A puritan might simply have a couple of walnuts or almonds with each meal, almond chicken anyone? I like a teaspoon of sour cream with a baked potato and lots of chives along with the real tasty Italian salad dressing. I like to leave the calorie reduced and nutrition void stuff in the store.