

SECONDARY STRATEGY # 1 – FAT FRIEND OR FOE?

In the past, fat has generally been looked at as being "bad" for us. Foods that are high in fat have been thought of as being unhealthy. This has contributed to a vast array of fat-reduced and fat-free, packaged and processed food products being available in grocery stores.

However, fat is one of the six basic nutrients needed by your body for it to be healthy and well (the other five nutrients being carbohydrates, protein, vitamins, minerals and water); fat is essential for good health. Your body simply can't live without it. However, certain types of fat, as well as excessive amounts of fat, can be hazardous to your health.

The Functions of Fat:

- Fat can be used as fuel for your body to do all sorts of activities from walking to sleeping (yes, even sleeping takes energy). At 9 calories per gram, fat has more than twice the energy value of an equal amount of carbohydrates or protein (at only 4 calories per gram).
- Fat is used in the formation of blood vessels – your arteries and veins.
- Fat is an important part of the membranes of cells. Think of the cell membrane as a "casing" for the cell. Simply put, it keeps the contents of the cell together.
- Fat is involved in the transmission of nerve impulses. Nerve impulses are the signals that your brain and nervous system use to communicate with your body.
- Fat is utilized in the production of hormones. Hormones help to regulate many different processes in the body, including things like your body's growth.
- Fat is responsible for transporting several vitamins throughout the body. These vitamins – Vitamin A, D, E and K – are called fat-soluble vitamins – they need fat in order to be able to be used by the body.
- Fat is also involved inside the body in providing a cushioning layer around some internal organs.

Low-fat diets: Many people have greatly reduced the amount of fat in their diets in an attempt to reduce their risk of heart disease and high cholesterol. However, when the amount of fat is restricted to a very low level, so that even healthy fats are not being eaten, they can actually end up increasing their risk of heart disease and weight gain. This is because their diets end up being too high in starchy, carbohydrate-based foods; in other words, their diets become unbalanced.

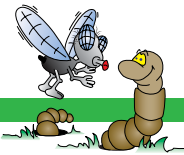
On the other hand, many people eat excessive amounts of pre-packaged foods and fast foods that are high in unhealthy types of fats. Eating this way can also increase a person's risk of heart disease, high cholesterol and certain types of cancer.

When it comes to eating fat, the secret is to eat moderate amounts of foods that contain healthy fats. This means learning to distinguish between healthy fats and unhealthy fats.

Types of Fats:

In general, fats can be divided into three main types – monounsaturated, saturated and polyunsaturated. Polyunsaturated fats are further broken down into several categories according to their molecular make-up and source. Two of these categories are Omega-3 fats and Omega-6 fats. Omega-3 fats can also be divided into two parts – fats from fish and shellfish sources (known as EPA* and DHA*) and fats from nuts, seeds and certain types of vegetables (known as ALA*).

Other types of fats include cholesterol, plant sterols, and trans fats.



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Confused? To make things easier to understand, look at the two charts below, which divide fats into healthy types and unhealthy types.

Table 1: Healthy Fats

Type of Fat	Why is it healthy?	Common Sources		
Monounsaturated Fats	<ul style="list-style-type: none"> Decreases risk of heart disease Helps maintain healthy level of HDL "good" cholesterol. Helps reduce levels of LDL "bad" cholesterol and blood triglycerides 	Canola oil Olive oil Peanut oil Peanut butter Nuts / seeds Avocado Olive		
Omega-3 fats (Polyunsaturated) EPA: eicosapentaenoic acid DHA: docosahexanoic acid ALA: alpha-linolenic acid	<ul style="list-style-type: none"> Decreases risk of heart disease Raises HDL "good" cholesterol Lowers LDL "bad" cholesterol Lowers blood triglycerides May help to reduce inflammatory responses within the body May help reduce risk of vascular 	<u>EPA / DHA</u> Fish and shellfish – salmon, tuna, sardines, lake trout, cod, cod liver oil	<u>ALA</u> Flaxseed oil Canola oil Walnuts Dark, leafy green vegetables	
Omega-6 fats (Polyunsaturated) LA: Linoleic acid GLA: gamma-linolenic acid AA: arachidonic acid	<ul style="list-style-type: none"> Reduces LDL "bad" cholesterol, <u>but</u> may also lower HDL "good" cholesterol 	<u>LA</u> Flaxseed oil Olive oil Soybean oil Sunflower oil	<u>GLA</u> Evening primrose oil Some seeds	<u>AA</u> Meats
Plant Sterols	<ul style="list-style-type: none"> Helps reduce LDL "bad" cholesterol 	Some types of margarine - check the label		

NOTE: Omega-3 and Omega-6 fats are sometimes referred to as Essential Fatty Acids or "EFAs"

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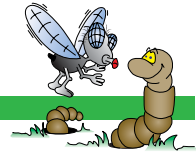


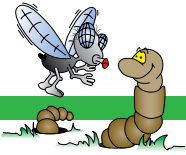
Table 2: Unhealthy Fats

Type of Fat	Why is it unhealthy?	Common Sources
<p>Saturated Fat (There are various types of saturated fats, some of which may provide a health benefit)</p>	<ul style="list-style-type: none"> Increases risk of heart disease Raises total blood cholesterol levels Raises LDL "bad" cholesterol 	<p>Butter Fat from pork, beef (hard, white fat found around outside of and throughout meat) Chicken/turkey (yellowish-colored fat from skin and around meat) Cheese, cream, ice cream, high-fat dairy products Cocoa butter Coconut, palm oils Hydrogenated vegetable oils Shortening, lard Bacon, sausages, cold cuts (except lean or fat-reduced varieties)</p>
<p>Trans Fat (This type of fat is formed during the manufacturing of certain processed foods when vegetable oils are hydrogenated. Hydrogenation increases the "shelf-life" of the product, but also the "unhealthiness" of it.)</p>	<ul style="list-style-type: none"> Increases risk of heart disease Lowers HDL "good" cholesterol Raises LDL "bad" cholesterol 	<p>Partially hydrogenated vegetable oils and tropical oils (such as coconut and palm oils) Some types of margarine - check labels Store-bought crackers, cookies, cakes, donuts Fried foods (French fries) Other processed snack foods - check labels</p>
<p>Cholesterol (also see LunchBox # 1 in Secondary Strategy # 1 in The Back-To-Basics Healthy Eating Guide™)</p>	<p>In excessive amounts, cholesterol may raise LDL "bad" cholesterol and increase risk of heart disease</p>	<p>Butter Egg yolks Lard Organ meats (liver, kidneys, etc.) High-fat meats Shellfish High-fat dairy products</p>

Still confused?

OK, here are a few simple rules to follow when it comes to eating fat:

- 1) BE A PROTEIN "PRO" (Foundation Strategy #4): Choose lean (lower fat) meats as often as possible, and try some non-meat sources of protein such as tofu or legumes.
- 2) CHOOSE CALCIUM EVERY DAY (Foundation Strategy #1): Focus on getting enough calcium-rich foods in your daily eating. Since many of the foods that are rich in calcium are dairy products – milk, cheese, yogurt – the idea is to choose lower-fat versions of these foods such as skim or 1% milk, or low-fat yogurt.
- 3) CHOOSE HEALTHIER SNACKS (Foundation Strategy #6): Choose nutritious snacks more often. Snacks like cakes, cookies, muffins, donuts, pastries that are store-bought are often higher in fat (especially unhealthy hydrogenated and/or trans fats) and low on nutrition. Other snacks that fit in this



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category include potato chips, candy bars and other kinds of chips (cheese, nachos, tortilla and so on).

- 4) Talk with your family about some other sources of fat that you may be eating. Butter and margarine should be used sparingly. Try having sandwiches without it. Use low-fat parmesan cheese on your potatoes or popcorn. Butter is 100% fat, and most of that fat is the saturated kind which isn't heart-friendly. Use butter only in small amounts. As for margarine, it is also 100% fat, but the type of fat varies depending on the type of margarine. Choose margarine that is low in saturated fat and contains no hydrogenated fat or trans fat – check the labels. You could also try a type of margarine that contains plant sterols (see Table 1 above).
- 5) Whatever cooking oil is used for, use it sparingly. Often recipes that need oil don't need as much as suggested. The amount in the recipe can usually be cut back by as much as 50%. Do not fry foods in oil; invest in a good-quality non-stick frying pan. Bake, broil or grill foods instead of frying. Besides using as little oil as possible, your family should also choose a "healthy" kind of oil such as olive oil or canola oil.
- 6) Beware of added sources of fat like salad dressings, mayonnaise, butter, sauces, dips, gravy and so on; these types of foods can often contain unhealthy types of fats. They should be used sparingly or as little as possible. In some cases, there are lower-fat (or even fat-free) versions – check the labels.

Generally, you need to be sensible about how much fat you eat.

Both the type and the amount of fat you eat is important. Fat should make up only a small amount of all of the food you eat each day. Technically speaking, fat should make up less than 25-30% of your total calories. But don't worry about counting calories or grams of fat, as long as you are choosing moderate amounts of healthy fats each day and following some of the guidelines above.

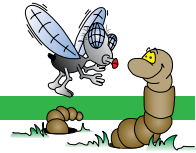
What could happen to my health if I eat too much fat?

In general, eating too much of any type of fat is not good for you, but this is especially true when you eat too much unhealthy fat. Too much unhealthy fat, in the form of saturated, partially hydrogenated fat, or trans fat, can put a person at risk for several diseases including heart disease, stroke and some varieties of cancer (for example, breast cancer and colon cancer). In relation to heart disease, too much saturated fat has been linked to a condition called atherosclerosis – a.k.a. hardening of the arteries. This disease, which can start at a very young age (maybe even as young as 5 or 6 years old), involves build-ups or deposits of fatty material on the inside walls of your arteries, especially the coronary arteries. They are the "heart" arteries that supply blood and vital oxygen to the heart muscle itself – without this blood and oxygen, the heart would stop working! In atherosclerosis, fatty deposits can build up on the inner walls of the artery which, if it becomes large enough, could disrupt the flow of blood through the artery (or worse, block the flow of blood completely). If the blockage or the deposit of fatty material was to occur in a coronary artery, the result is usually a heart attack!! This could kill you or severely damage your heart muscle should you survive. Heart disease is the number-one killer of people in Canada and the United States.

Eating a lot of high-fat foods has also been linked to certain types of cancer – especially colon cancer (one of the leading types of cancer for men) and breast cancer (one of the most common types of cancer for women). These are terrible diseases that cause thousands of deaths each year. As with heart disease, there are many other factors that can increase the risk of cancer but by learning a healthier and more well-balanced way of eating, including a healthier level of fat intake, you are taking a step in the right direction towards lowering your risk of cancer.

Besides heart disease and cancer, there is one other disease that is worth mentioning in this section. Obesity, or what a lot of people refer to as being "overweight." This disease is also becoming more and more common in North America, especially among children and young people. However, it can affect people of all ages. It has been linked to a host of other health problems including diabetes, heart disease, high blood pressure, cancer, and

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arthritis. It can have a significant impact on people's lives in terms of the health of their body but also their mental health and self-esteem. The cost of treating this disease and the many health problems that are linked to it is estimated to be many hundreds of millions of dollars each year. Some researchers and doctors feel that obesity (and the various health problems that seem to go with it) will be one of the biggest health problems in North America over the next couple of decades.

Obesity is defined differently depending on who you ask. In general, a person is obese when their percentage of body fat increases over a certain level. For females, a healthy level of body fat is approximately 14-24%; for males, a healthy level is approximately 12-20%. Perhaps a better term for obesity would be overfat – or having more than a healthy amount of body fat.

The issues surrounding obesity and excess body weight/fat are ones that many people struggle with. It is estimated that over 50% of adults and approximately 1 in 3 young people in the United States and Canada could be considered obese.

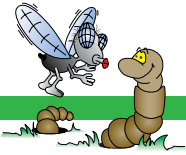
So, what makes people obese?

The answer to this question is not a simple one. There are a wide variety of factors that can contribute to a person's weight reaching an unhealthy level. Scientists and health researchers are investigating many of these factors and other questions on an ongoing basis. Many of these researchers are especially interested in how hormones and other body substances interact and how this plays a role in weight gain and obesity. More research will be needed before there will be a clearer understanding of the causes of weight gain and obesity. However, for most people who are overweight or obese, there are three main factors that seem to be common:

- **Genetics and Family Background** - It seems that a person's family background - their genetics - plays a role in the development of obesity. The body size and shape, including body weight levels, of a person's parents and closest relatives seems to indicate how that person's body size and shape will develop. This seems to be the case for other physical characteristics as well, such as height.

Some estimates suggest that genetics and family background may account for about 25% of the factors contributing to obesity.

- **Eating Habits** - This factor is probably the most significant one. Basically, if a person overeats - that is, they eat more calories (energy "in") than they expend (energy "out"), they will likely experience a weight gain. When a person eats more calories than their body needs, the extra calories are stored as fat. Body fat is nothing more than stored energy. Many people gain weight a few pounds each year for several years or more, with the overall result being a substantial increase in their body weight over the course of many years. Consuming excessive amounts of high-fat food can easily contribute to a person's weight gain because these types of foods are also high in calories. However, eating too many low-fat foods may also result in a weight gain if a person consumes more energy than they expend. Foods containing a lot of "empty" calories (that is, they are high in fat or sugar or both but low in nutrition), can contribute significantly to gaining weight because these foods can pack a lot of calories into a relatively small quantity. There are other types of foods that can lead to weight gain, particularly refined, starchy types of foods (carbohydrates). When excessive amounts of these types of foods are eaten, it can lead to rapid rising of blood sugar levels and food energy being converted to body fat. For more information on refined carbohydrates, read LunchBox # 1 in Foundation Strategy # 3 -Be a Grain "Gourmet." Eating a balanced diet, with healthy choices from all food groups, eaten in a moderate way (in other words, without overeating all the time) is one of the best ways to prevent weight gain and obesity
- **Lack of Physical Activity and Exercise** - This factor can also lead to weight gain and obesity. Being physically active on a regular basis, through exercise and other activities, as opposed to being inactive, or sedentary, most of the time, helps maintain healthy body weight and body fat levels. When a person is not physically active



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enough, they do not "burn off" or expend the energy they take in from the foods they eat. As mentioned, excess energy is converted to body fat and stored.

Regular exercise and physical activity can also help to maintain a higher resting metabolic rate, which can be helpful in maintaining healthy body weight and fat levels.

There are other factors and reasons why some people become obese - these can include metabolic or hormonal imbalances, and other medical reasons. Although this information is only very general, one thing is clear, both eating habits and regular physical activity are factors that each individual has total control over - each person can choose to make healthy, balanced food choices, and be physically active each day. These are choices that can develop into healthy habits and become a big part of a person's healthy lifestyle. Genetic factors cannot be controlled (you can't choose your parents). ~~The main message here then, is to make healthy choices in order to maintain healthy body weight levels.~~

Lunchbox # 1: Cholesterol

Cholesterol is a compound that is required by the body for good health. It functions in the body in several ways:

- It is a part of cell membranes (these are like the outer coverings or "casings" of the cells in your body).
- It is used by the body to produce vitamin D (which is important for healthy bones)
- It is involved in conducting nerve impulses (nerve impulses are the signals your brain, spinal cord and nerves use to pass messages back and forth).
- Cholesterol is also used by your body in the making of various hormones.

Most of the cholesterol needed by your body can be made in your liver; only a small amount is actually obtained from the foods you eat. Cholesterol is transported through the body in the blood. A certain amount can be stored in the liver or broken down.

There are two main "types" of cholesterol:

- High Density Lipoprotein (HDL) cholesterol is sometimes referred to as "good" cholesterol because it transports cholesterol through the blood to be stored in the liver.
- Low Density Lipoprotein (LDL), or "bad" cholesterol, transports cholesterol from the liver to the bloodstream. When the level of LDL cholesterol becomes too high, it can be unhealthy for your heart.

Cholesterol is found only in food from animal sources – especially egg yolks (the yellow part of the egg), shellfish (for example, shrimp or lobster), cheese, and meat.

In the past, it was thought that eating foods that are high in cholesterol could lead to high levels of cholesterol in the blood, which can increase a person's risk of heart disease and stroke. However, it is now known that it isn't really the amount of cholesterol that you eat that the problem, it's the amount of saturated and other unhealthy fats. When a person consumes too much unhealthy fat, it contributes to raising their cholesterol levels. Although it still makes sense to eat only moderate amounts of high-cholesterol containing foods (like eggs and shellfish), these foods are not the culprits that lead to high blood cholesterol levels.

Hydrogenated fats and oils: These fats are found in many pre-prepared or processed foods – particularly snack-type foods such as cakes, cookies, donuts, chips, candy bars, and muffins. Fat is added as an ingredient to many of these types of foods. In order to keep the fat in these processed foods from going bad while it sits on the shelf at your local grocery store, it is treated by a process called hydrogenation. This helps to give the food a longer shelf life. Hydrogenated fats are not good for you. Eating a lot of highly processed foods that contain hydrogenated fat isn't very heart-healthy, and it may increase a person's risk of certain types of cancer.

Trans fats: In relation to hydrogenated fats, many processed foods can also contain another type of fat called trans fat. This fat forms during the process of hydrogenation. Eating foods that contain a lot of trans fat is also potentially hazardous to your health – especially your heart health. The key to recognizing these fats is to read the list of ingredients on all processed and manufactured foods. If you see the words hydrogenated, or partially hydrogenated, that product contains unhealthy, trans fat. Eat foods containing this fat in only small amounts and try to find products that contain little or no trans or hydrogenated fats.

Lunchbox # 2: What is a calorie?

A calorie is a way of measuring the energy value of food. When you eat, you are providing energy, or fuel, for your body. All foods, except for certain ones that are labeled calorie-free, contain energy. When you read the Nutrition Information shown on a food label, the first thing that is usually listed is the amount of energy the food provides. For example, 250ml (1 cup) of 1% milk provides approximately 110 calories of energy. The calorie level, or energy value, of a food depends on what the food is made up of. For example, foods that are high in fat are also usually high in calories. This is because each gram of fat (whether it is healthy or unhealthy) contains 9 calories of energy; in this way, fat is considered energy-dense. In comparison, a gram of carbohydrate or protein contains only 4 calories of energy.