THE SKINNY ON FATS

If your blood cholesterol level is high, cholesterol and other fatty substances are more likely to collect on the walls of blood vessels. Over time these deposits may restrict or even block blood flow to the heart (heart attack) or to the brain (stroke).

LIPID PANEL: The blood test to determine cholesterol levels - a snapshot of our risk for heart disease. The closer we are to optimal, the less risk of heart attack and stroke, **significantly less risk! (OPTIMAL levels below)**

Total Cholesterol	less than 200	
LDL (bad) Cholesterol	less than 100	(low density lipoprotein)
HDL (good) Cholesterol	more than 60	(high density lipoprotein)
Triglycerides	less than 150	(storage form of fats)
T. Chol/HDL Ratio	5 or less	

CHOLESTEROL: We eat cholesterol, and we make cholesterol in our bodies - primarily in the liver. Cholesterol is only found in animal foods: meat, poultry, seafood, egg yolks, and dairy products. There is **NO** cholesterol in plant foods like nuts, vegetables, fruits, and grains.

THE FAT WE EAT: We eat fats from plants and fats from animals. Plant fats are *primarily* unsaturated fats, and animal fats are *primarily* saturated fats (related to the chemical make-up of the fat). But there are always exceptions. Let's make some sense of the subject of fats.

1. Saturated Fats
2. Unsaturated Fats
    - Monounsaturated
        - Omega-9 Fatty Acids
    - Polyunsaturated
        - Omega-6 Fatty Acids
        - Omega-3 Fatty Acids
3. Trans Fatty Acids

 **SATURATED FATS:** Usually solid at room temperature and primarily found in animal foods such as meats, poultry, seafood, whole dairy products (milk, yogurt, ice cream, cheese, cottage cheese), butter, lard, sour cream, and cream cheese. ***EXCEPTION:*** Also found in tropical oils like coconut, palm, and palm kernel oils. Many manufacturers use these oils in numerous foods. They are cheap and extend the shelf life of the product.

Saturated fats raise total cholesterol, LDL and HDL levels.

 **UNSATURATED FATS:** Usually liquid at room temperature and primarily found in plant foods. ***EXCEPTION:*** *Omega-3 fatty acids in fatty fish.*

Monounsaturated Fats: (Omega-9 FA) Primarily found in plant oils like canola, olive, peanut, and in avocados, hazelnuts, and almonds. **BEST SOURCE OF FATS.** They provide the best protection from molecules in the body known as free radicals, which can cause cell damage. Replace saturated fats with these fats whenever possible.

Monounsaturated fats lower total cholesterol and LDL and *raise HDL* when part of a healthy diet (raising HDL makes monos preferred).

Polyunsaturated Fats: Primarily found in vegetable oils and fatty fish.

Polyunsaturated fats lower total cholesterol and LDL when part of a healthy diet.

Omega-6 Fatty Acids: Primarily found in liquid oils like vegetable, safflower, sunflower, corn, and soybean oils.

Omega 3 Fatty Acids: Found in both animal and plant foods. **Animal Sources:** Fatty fish like herring, salmon, sardines, and mackerel (Atlantic or Spanish), trout (rainbow), bluefish, tuna (canned white albacore or fresh), sea bass, swordfish, halibut, flounder/sole, mackerel (King), haddock, cod. (Highest amount listed first.)

Plant Sources: Flaxseed and flaxseed oil, canola oil, walnuts, soybeans, wheat germ, green leafy vegetables (including spinach, kale, leeks, broccoli), dried beans (kidney, garbanzo, pinto).

Omega-3 fatty acids may lower risk of cancer (reduce production of enzymes that promote cancer cell growth), protect against heart disease (make blood platelets flexible and less sticky and decreases incidence of second heart attack), lower triglyceride and cholesterol levels.

Ratio of Omega-6/Omega-3: Both fatty acids compete metabolically for many of the same enzymes. When the enzymes are paired with omega-3s, they produce beneficial molecules that tend to be anti-inflammatory and promote cancer cell death. The enzyme activity with omega-6s, however, promotes harmful inflammation, cell multiplication and less cancer cell death. So, try to eat more omega-3 fatty acids for a ratio closer to 4:1 instead the usual 15:1 for most Americans. Eat fatty fish 2-3 times/week and change to canola or olive oil.

TRANS FATTY ACIDS: Primarily found in stick margarine, salad dressings, packaged cookies, crackers, chips and commercially fried foods like doughnuts and French fries.

Trans fatty acids are thought to be the most harmful to the heart. They raise LDL and total cholesterol and <u>lower HDL levels</u>.

Trans fatty acids are produced because of a process called hydrogenation. Hydrogenation is the process of changing the chemical makeup of a polyunsaturated fat. It converts liquid oils to a semisolid form for more uses. For example, vegetable oils are hydrogenated to produce shortenings or margarines. Hydrogenation: 1) Increases the stability of a fat or oil which is important for frying at high temperatures. 2) Extends a product's shelf life (that is why crackers, if not opened, will still taste good at 6 months or more).

IMPROVING THE LIPID PROFILE

Improve Total Cholesterol & LDL:

- Limit overall fat intake by cutting down on added butters, margarines, sauces, gravies, dips, dressings; choose loin or round cuts of meats (limit red meat to 18 oz per week, or six 3-oz servings per week). Limit whole eggs to 6 per week, 2 per week for Diabetes. Choose skim or 2% milk, low-fat cottage cheese, fat-free Greek yogurt, and natural ice cream. Italian cheeses like Mozzarella, Provolone or Parmesan are USUALLY lower in fat; look for 5 gm fat per serving (or less).
- Try "clean" cream cheese, sour cream, and mayonnaise w/no artificial ingredients. But use sparingly! They are animal fat. Sour cream has fewer calories-- 25 cal/Tbs and butter is about 125 cal/Tbs.
- Eat more monounsaturated fats than saturated fats by choosing a peanut butter* sandwich instead of a meat sandwich, replacing cheese with avocado on a crisp corn or wheat tortilla, using real butter w/canola oil or olive oil, sautéing vegetables in olive oil instead of butter. *Low-fat peanut butter replaces heart-healthy fat with sugar. Choose regular PB with the word "Natural" on front label.
- Increase Omega-3 fatty acids by changing to canola oil or olive oil; eating more walnuts and green leafy vegetables; eating at least 2 servings per week of salmon, sardines, trout, tuna, or other fatty fish.
- Limit trans fatty acids by choosing real butter w/canola or olive oil, no margarine (especially stick), limit doughnuts and French fries/fried foods at restaurants, limit use of packaged snack foods like cookies and chips, choose baked chips. Choose oil & vinegar or Italian salad dressing. Beware of fat-free salad dressing. For most commercial dressings, sugar replaces the removed fat. The fat is primarily trans fats. But replacing one harmful substance (trans fats) with another (sugar) is not usually recommended. Remember, the fat does not raise blood sugar, sugar does.
- Be careful of fat free cookies. Generally, the fat is removed but replaced by sugar. Compare the regular label with the low fat or fat free label.

Improve HDL:

- Increase physical activity in both structured exercise (total of 30 minutes/day, may be accumulated), and daily movement (increase everyday movements, park farther, take the stairs, etc.). HDL is most affected if activity is consistent - every day.
- Increase your ratio of monounsaturated fats per day. See above.
- Limit of one alcoholic beverage* for women, two for men has been shown to increase HDL levels (one drink is 12-oz beer, 5 oz wine, 1.5 oz hard liquor).
- An increase in HDL will improve the T. Chol/HDL ratio, an important indicator of heart health.

Improve Triglycerides:

- Limit simple carbohydrates (white stuff, most desserts). Change grains made with white flour like white bread, crackers, rice, pasta, and tortillas to whole grains. Look for first ingredient to be a **WHOLE** grain and 10% or more fiber.
- Increase Omega-3 fatty acids by eating 2 servings per week of salmon, sardines, tuna, or other fatty fish; eat more walnuts and green leafy vegetables, dried beans, change to canola oil.
- High intake of alcohol raises triglycerides. Limit alcohol consumption* to one drink per day for women and two drinks per day for men (one drink is 12-oz beer, 5 oz wine, 1.5 oz hard liquor).
- Lose 5-10% of current weight.

*Talk with your doctor about alcohol use; be careful with prescription medications and alcohol consumption and/or the possibility of substance abuse tendencies.

Note: Discuss cholesterol-lowering medications with your doctor.