



SETMA I - 2929 Calder, Suite 100
SETMA II - 3570 College, Suite 200
SETMA West - 2010 Dowlen
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Lipids Follow-Up Note

Treatment Plan and Plan of Care

Patient

Date of Birth

Age

Ethnicity

Caucasian

Sex

M

Encounter Date

04/02/10

Follow-Up Care

Your next visit should be scheduled in 3 month(s)

Referrals

Arrangements are being made for you to see other healthcare providers; it is important that you keep these appointments. If you are unable to, please contact our office to let us know you missed your appointment so that we can help you reschedule it.

Status	Priority	Referral	Referring Provider
Completed	Routine	Bone Density	
Completed	Immediate	Ong, Albert	
Completed	Routine	SETMA Ophthalmology	
Completed	Routine	PFT	

Cholesterol and Triglycerides (Lipid) Evidence-Based Measures

The current standards of care for cholesterol are based on the Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III Final Report- ATP-III)

ATP-III Classifications

Total Cholesterol

<200	desirable
200-239	borderline high
>240	high

LDL Cholesterol

<100	optimal
101-129	near optimal/above optimal
130-135	borderline high
160-189	high
>190	very high

Serum Triglycerides

<150	normal
151-199	borderline high
200-499	high
>500	very high

HDL Cholesterol

<40	low
41-59	optimal
>60	high

ATP-III addresses the following in regard to causes of elevated Triglycerides in the general population. These causes give guidance in how to improve triglyceride values:

- * Overweight and obesity
- * Physical inactivity
- * Cigarette smoking
- * Excess alcohol intake
- * Very high-carbohydrate diets (>60 percent of total energy)
- * Other diseases (type 2 diabetes, chronic renal failure, nephrotic syndrome)
- * Certain drugs (corticosteroids, protease inhibitors for HIV, beta-adrenergic blocking agents, estrogens)
- * Genetic factors

ATP-III addresses the following in regard to the cause of low HDL in the general population. These causes give us guidance in how to improve HDL value:

- * Elevated serum triglycerides
- * Overweight and obesity
- * Physical inactivity
- * Cigarette smoking
- * Very high carbohydrate intakes (>60 percent of total energy intake)
- * Type 2 diabetes
- * Certain drugs (beta-blockers, anabolic steroids, progestational agents)
- * Genetic factors

As will be seen in your Plan of Care, some of these measures have been changed to produce more aggressive reductions in cholesterol, LDL and triglycerides. New evidence is supporting these modifications to ATP-III guidelines.

The successful treatment of your cholesterol and triglycerides is dependent upon your participation in your care. Medication may be required but medication without modification of your lifestyle in regard to your weight, diet, exercise and smoking will not protect you from premature heart disease. Your LESS Initiative gives you direction about these lifestyle changes.

Treatment Goals

Whether treating, lipid abnormalities, diabetes mellitus, insulin resistance, obesity, hypertension or a full blown metabolic syndrome, lifestyle changes are imperative for successful results and for long-term health benefits. These changes include:

Dietary

Typically this is interpreted as meaning dieting but it is far more than that. Calorie moderation is important but the types of food eaten are as important as the total daily calorie count. A diet high in soluble fiber and fruits, vegetables and whole foods, and a diet low in processed foods with preservatives, trans fats, added salt and sugar, will contribute significantly to the improvement in all of these conditions.

Exercise

Including strengthening, balance, stretching and aerobic condition are imperative for the treatment of lipids. Nothing will raise the HDL as high or as effectively as consistent, vigorous aerobic conditioning. Weight reduction and the elimination of excessive abdominal fat is an important aspect of exercise but cardiopulmonary conditioning is the critical aspect. Increasing the hearts ability to utilize oxygen is the gold-standard goal.

Smoking Cessation

If a person continues to smoke, all of the medications, antioxidants, diets and exercise will not counteract the negative health consequences of smoking.

The principle reason for treating lipid abnormalities is to prevent atherosclerotic cardiovascular disease. Without significant lifestyle modifications, a patient can lower the lipids but will not achieving the maximally desired health benefits and with lifestyle changes, permanent benefit in health, longevity and well being can be achieved and maintained.

Active Medications

The following are the medications which you should be taking. Please notify your provider if you are unable to obtain your medications for any reason. Do not just stop taking your medication without calling your healthcare provider immediately.

<u>Start Date</u>	<u>Brand</u>	<u>Dose</u>	<u>Sig Desc</u>
06/01/2009	Crestor	10 Mg	1 tab by mouth dialy
	Toprol XL	50 Mg	Take one capsule by mouth daily
	Plavix	75 Mg	1 by mouth daily
	Diovan	160mg	Take one capsule by mouth daily
	Dewitt's Children's Aspirin	81mg	Take one tablet daily.
	Nitrotab	0.4mg	Take as needed
	Saw Palmetto	320mg	

You are on the following medications which are "Statins": CRESTOR

These are helpful in treating your cholesterol. While there is no consensus on this in the medical literature, we would recommend that while you are on a "Statin," that you take Co-enzyme Q10 (CoQ-10). A dose of 100-200 mg in a gel cap form helps your body while you are taking these medications. Co-Q 10 is not a pharmaceutical, but is in a class of medications called "nutraceuticals" these are naturally occurring substances which are important to bodily functions. CoQ-10 can be purchased over the counter.

Another non-pharmaceutical which has great benefit in the treatment of lipid disorders and particularly triglycerides is Omega-3 Fish Oil. In the case of patients with very high triglycerides there is evidence-based studies which support the use of Omega-3 Fish Oil. However, there is good empirical evidence that Omega-3 Fish Oil supplement is beneficial in many other conditions. Patients on blood thinners such as Coumadin, Aspirin, Plavix, etc., need to be cautious with Omega-3 Fish Oil and should discuss their use with their healthcare provider. The usual dose should be 4,000 mg of a combination of DHA and EPA a day in a gel cap. Also, eating fish high in Omega-3 is beneficial such as salmon, mackerel, sardines and other cold-water fish.

Plan of Care

All of your care in regard to your cholesterol is based on three things:

1. Your Lab Values
2. National Standards of Care
3. Your Cardiovascular Risk

Your Cardiovascular Risk

Your Framingham Cardiovascular Risk Score is 13 points.

Your Global Cardiovascular Risk Score is 2.9 points. (a score below 4 is desirable)

Because the Global Cardiovascular Risk Score is based on the Framingham Data, but has the gender and age factors eliminated, it often is a more accurate estimate of your risk, particularly in the young and in the elderly.

Your risk score is moderate. While your risk score is moderate, it is still important for you to control your cholesterol and triglycerides, blood pressure, blood sugar and weight.

Your Latest Lab Results

Cholesterol	161 mg/dL	03/17/2010
Triglycerides	73 mg/dL	03/17/2010
HDL	60 mg/dL	03/17/2010
Trig/HDL Ratio	1.22	
LDL	86 mg/dL	03/17/2010

Remember, SETMA's goals for these laboratory values are:

Cholesterol	less than 120
Triglycerides	less than 90
HDL	higher than 40 for males and higher than 50 for females
Cholesterol/HDL Ratio	less than 4.0
LDL	less than 100, for those at high risk less than 70

Your plan of care is designed to help you:

- * achieve target goals for your laboratory values,
- * prevent cardiovascular heart disease and
- * improve your overall health.

The following diet information will assist you in modifying your lifestyle to work with your medication to achieve these goals.

If you would like to increase your understanding of the dietary contribution to the improvement in your cholesterol values, please request a referral to dietary for a consultation with SETMA's Registered Nutritionist. If you do not achieve your goals, your healthcare provider will initiate that referral.

SETMA's Audit of Your Care

The following measures reflect the quality of care you are receiving for cholesterol and triglycerides. None of the national agencies which establish measurement standards for performance in the treatment of specific conditions have endorsed a set of measures for the treatment of cholesterol and triglycerides. While awaiting such a standard to be established, SETMA has adopted the following standard which allows your provider to determine if you are receiving excellent care in the treatment of dyslipidemia.

You should have a lipid profile at least yearly.

You have had a lipid profile performed within the last year.

You should have a Lipid Treatment Plan created for you at least yearly.

You had had a Lipid Treatment Plan created within the last year.

You should be assessed for the presence of Cardiometabolic Risk Syndrome at least yearly.

You have not be assessed for Cardiometabolic Risk Syndrome within the last year.

If your most recent LDL reading was greater than 100 mg/dL, you should be on a statin.

Your most recent LDL was below 100 mg/dL.

You should be given a list of recommended lifestyle changes that may help improve your lipid status.

You have been given a list of recommended lifestyle changes.

You should have your risk stratification for Lipids and Heart Disease evaluated at least yearly.

Your risk stratification for Lipids and Heart Disease has been evaluated within the last year.

You should have been referred for Medical Nutrition Therapy at least once.

You have been referred for Medical Nutrition Therapy.

If you are diabetic and you have an LDL greater than 70 mg/dL, you should be on a statin.

N/A you are diabetic and your most recent LDL was greater then 70 mg/dL you are taking a statin.

If you have chronic hypertension, your blood pressure should be controlled to below 140/90 mmHg.

You are hypertensive but your blood pressure is controlled to below 140/90 mmHg.

Bring this document with you to your next visit and ask your healthcare provider to explain anything that you do not understand.

James L. Holly MD

Southeast Texas Medical Associates, LLP



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A Low Carbohydrate Diet and the Glycemic Index

A lot of research has proven that dietary fat is not necessarily converted into body fat. Carbohydrates are readily converted into fat as an action of insulin. Most overweight people became overweight due to hyperinsulinemia - elevated insulin levels in the blood. When you eat a meal high in non-fibrous carbohydrates (refined sugar, fruit juice, raisins, bananas, etc) or carbohydrates which are not eaten with a small portion of "good" fat (nuts, olive oil, etc), the increased blood sugar stimulates insulin production by the pancreas. Insulin is the hormone that allows blood sugar to be used by the cells. A side effect of insulin is that it also causes fat to be deposited. It also stimulates your brain to produce hunger signals.

The measure of how quickly the carbohydrates you eat affect your blood sugar is called the "glycemic level." This measures how quickly the blood sugar goes up in response to the food you eat. For instance, a whole apple has a glycemic level lower than applesauce, which has a glycemic level lower than fresh apple juice, which has a glycemic level lower than apple juice concentrate. This makes sense in that we know that the fiber in the whole apple slows the absorption of the fructose (sugar) from the apple, while the apple juice concentrate represents the sugar content of many apples without the fiber.

Importance of Glycemic Control

When we eat foods that contain carbohydrates, the carbohydrates are digested in the stomach and intestines and are absorbed into the bloodstream, generally in the form of glucose. The glucose in the blood stimulates the pancreas to excrete a hormone--insulin--into the blood. Insulin helps the body's cells to absorb the glucose and to use it for energy; insulin levels rise and fall with the levels of blood glucose.

When the carbohydrates we eat cause the blood sugar to quickly rise to high levels, excess insulin can cause too much sugar to be absorbed by the cells. This results in a condition of low blood sugar. The subsequent stress on the body stimulates the adrenal glands to secrete hormones into the blood. Metabolism rises, glucose is manufactured from stores in the liver, and the entire body may be activated in what is called the "fight-or-flight response."

The glycemic index is a classification of carbohydrates based on their potential for raising blood glucose levels. Those foods that result in a rapid rise in blood sugar and therefore, in insulin, have a high glycemic index. Carbohydrates that are broken down slowly and cause only a moderate increase in blood sugar have a low glycemic index. Some carbohydrates fall in between.

A study from the New York Obesity Research Center shows that after eating a breakfast of oatmeal, a food with a low glycemic index, subjects were not as hungry at lunch time as those who had a breakfast of sugared cornflakes. The sugared cornflake breakfast, equal in calorie content to the oatmeal, left subjects as hungry as a control group that had only water for breakfast. These groups tended to eat more at lunch compared to those who ate an oatmeal breakfast. Oatmeal, of course, also provides benefits due to its high fiber content.

The primary goal--for not only diabetics, but for everyone--is to maintain a relatively stable blood glucose level, and thereby to prevent the "rebound" effect of insulin spikes. Chronically high or very low levels of blood glucose can be dangerous to anyone. High glycemic foods have also been shown to increase appetite and to indirectly affect cholesterol levels. In addition, a high level of insulin signals the cells of your body to absorb the extra blood sugar and to store some of it as carbohydrate in your liver and muscle cells (in the form of glycogen) and the rest in your fat cells (on the buttocks, hips, abdomen, etc.).

Back to Low Carbohydrates

When you eat high glycemic index foods which stimulate insulin production, you become hungry quicker and naturally, you then eat more carbohydrates, and the cycle repeats itself. Over time, your cells become resistant to insulin, meaning that your pancreas has to work overtime, producing up to four or five times as much insulin as it normally does just to keep up with the high demand for it. It's been shown that high levels of insulin have a harmful effect on the body. How does premature aging strike you?

Limiting the intake of carbohydrates puts an end to this cycle. When you reduce your carbohydrate intake, your insulin levels decrease and the levels of glucagon increase. Glucagon is the hormone that causes body fat to be burned and cholesterol to be removed from deposits in the arteries.

What is a low carb diet?

People diet for two reasons, to lose weight, or to improve overall health - or both. Keep in mind that the carbohydrates recommended in any healthy eating plan are the ones contained in whole grains, fruits, and vegetables. However, even those who are healthy and who are not overweight can maintain their health and vitality by living a low carbohydrate lifestyle.

The diet that strikes at the real cause of obesity, high cholesterol, high blood pressure, hypoglycemia, and type 2 diabetes is the low carbohydrate way of life.

When you move to a low carbohydrate way of life, you replace high glycemic carbohydrates with low glycemic carbohydrates and increase the "good" fats in your diet, while maintaining the necessary proteins to maintain your lean body mass. Your doctor can tell you how many grams of protein you need on a daily basis for this purpose.

As Americans, we've been told for years to eat a low-fat, high-carbohydrate diet. Americans are now the fattest people on the planet - and we're getting fatter at an alarming rate! Adult-onset diabetes is becoming a problem and we know better than to think that fat is the problem high glycemic carbohydrates are.

On a low-carb diet, you can eat until you're full. You can eat meats, fish, poultry, eggs, and cheese, plus high fibrous green vegetables (asparagus, spinach, and broccoli) and fresh, high fiber fruits.

Since on a low carbohydrate diet you are eating good fats, oils, protein and fibrous carbohydrates, you're rarely ever hungry. In general, foods high in fat are very satisfying. Eating high levels of fat will actually cause you to burn fat faster than if you were fasting! During a fast, your body goes into starvation mode. This is a very high efficiency state of metabolism. It actually slows down weight loss. A high fat diet combined with low amounts of non-fibrous carbohydrates tells your body it isn't starving, and your metabolism maintains a normal level. While consuming fat is a requirement for a healthy diet, limit consumption of trans-fats like margarine. Use real butter. It's a good fat. Good fats are found in olive oil, flax seed oil, and oils found in nuts.

Is it healthy? On a low carb diet, you can lose weight consistently, lower your insulin levels, lower cholesterol, lower blood pressure, and stabilize your blood sugar (great for diabetics).

Have you been consistently subjected to a diet high in sugar or refined carbohydrates? Your body recognizes only one carbohydrate -- sugar. All carbohydrates you eat, except fiber, are converted into sugar. Eating a diet that's 70% carbohydrate means that most of what you eat is sugar. When you eat a serving of mashed potatoes, your body sees it as a "lump of sugar" because it has the same affect on the body as a small bowl of sugar.

That type of diet is unbalanced. The purpose of a low-carb diet is to bring your body chemistry and insulin sensitivity back into balance. In order to accomplish this, you'll need to eat a diet that is unbalanced in the opposite direction of they way you've been eating all your life.

Once the weight is gone, and your blood chemistry, blood pressure, and energy levels are back in the normal range, then you may be able to start adding some more complex carbohydrates back into your diet.

The key to a low carbohydrate diet is to learn the glycemic index of foods. Avoid the high glycemic foods and eat the low glycemic ones. Generally, foods with a glycemic index over 40 should be avoided.

There is one more concept about a low carbohydrate diet which you must learn. That is: glycemic load. If you take the glycemic index of a food and multiple that times the number of non-fiber grams in the portion of food you are eating, it will give you the glycemic load which you are eating.

To change your lipids, blood sugar and body composition with your diet, you need to limit your glycemic load at any give meal to 4,000 or less. A can of Coca Cola has a glycemic load of 4,600. That means if you have a hamburger, French fries, a coke and a pastry, your glycemic load is exceed just by the drink. It is no wonder that we are fat and unhealthy in America.

The following gives some of the glycemic levels of common foods:

Beans

baby lima 32
baked 43
black 30
brown 38
butter 31
chickpeas 33
kidney 27

Cookies

Graham crackers 74
oatmeal 55
shortbread 64
Vanilla Wafers 77

Crackers

Kavli Norwegian 71

Grains

barley 22
brown rice 59
buckwheat 54
bulger 47
chickpeas 36
cornmeal 68
couscous 65

lentil 30
navy 38
pinto 42
red lentils 27
split peas 32
soy 18

Breads

bagel 72
croissant 67
Kaiser roll 73
pita 57
pumpernickel 49
rye 64
rye, dark 76
rye, whole 50
white 72
whole wheat 72
waffles 76

Cereals

All Bran 44
Bran Chex 58
Cheerios 74
Corn Bran 75
Corn Chex 83
Cornflakes 83
Cream of Wheat 66
Crispix 87
Frosted Flakes 55
Grapenuts 67
Grapenuts Flakes 55
Life 66
Museli 60
NutriGrain 66
Oatmeal 49
Oatmeal, 1 min. 66
Puffed Wheat 74
Puffed Rice 90
Rice Bran 19
Rice Chex 89
Rice Krispies 82
Shredded Wheat 69
Special K 54
Swiss Museli 60
Team 82
Total 76

rice cakes 82
rye 63
saltine 72
stoned wheat thins 67
water crackers 78

Desserts

angel food cake 67
banana bread 47
blueberry muffin 59
bran muffin 60
danish 59
fruit bread 47
pound cake 54
sponge cake 46

Fruit

apple 38
apricot, canned 64
apricot, dried 30
apricot jam 55
banana 62
banana, unripe 30
cantaloupe 65
cherries 22
dates, dried 103
fruit cocktail 55
grapefruit 25
grapes 43
kiwi 52
mango 55
orange 43
papaya 58
peach 42
pear 36
pineapple 66
plum 24

hominy 40
millet 75
rice, instant 91
rice, parboiled 47
rye 34
sweet corn 55
wheat, whole 41
white rice 88
white rice high amylose 59

Juices

agave nector 11
apple 41
grapefruit 48
orange 55
pineapple 46

Milk Products

chocolate milk 34
ice cream 50
milk 34
pudding 43
soy milk 31
yogurt 38

Pasta

brown rice pasta 92
gnocchi 68
linguine, durum 50
macaroni 46
macaroni & cheese 64
spaghetti 40
spaghetti, prot. enrich. 28
vermicelli 35
vermicelli, rice 58

Sweets

honey 58
jelly beans 80
Life Savers 70
M&M's, peanut 33
Skittles 70
Snickers 41



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Low Cholesterol Diet

Fat is a major energy source for the body. However, it is not the body's only source of energy, and too much fat in the diet can be harmful. It is especially bad for the circulatory system because it raises blood cholesterol levels that can contribute to heart attack or stroke. These diets are designed to reduce fat and cholesterol to levels recommended by the National Cholesterol Education Program (NCEP). NCEP is made up of 40 private and governmental groups coordinated by the National Heart, Lung, and Blood Institute. Both diets have the following goals:

- * decrease total dietary fat, especially saturated fat
- * decrease dietary cholesterol
- * limit sodium intake
- * increase intake of fiber and complex carbohydrates
- * decrease calories if needed to reach a healthy body weight

The Step-1 diet is the first level of treatment for high blood cholesterol in most adults and children over the age of two. The Step-2 diet is more restrictive, and is used when a person now has or did have any of the following:

- * a high blood cholesterol, even after following a Step-1 diet for 6 to 12 weeks
- * evidence of atherosclerosis (fatty deposits in the arteries)
- * a heart attack or stroke

Nutrition Facts

These diets are designed to meet the National Research Council's Recommended Dietary Allowances (RDA). For those who require weight reduction, the RDA can be met on a daily calorie level of 1200 for women and 1500 for men. However, if the patient requires a lower daily calorie intake, the physician may prescribe a multiple vitamin supplement.

Cholesterol

The heart pumps blood through blood vessels called arteries. This blood carries vital oxygen and nutrients needed by tissues and organs throughout the body. The heart itself is supplied with blood vessels called coronary arteries. When cholesterol levels rise above normal limits and stay high, some cholesterol is left behind in the arteries. Over the years, a hardened, waxy substance called cholesterol plaque builds up on the artery walls, and reduces or blocks blood flow. Organs supplied by these arteries then become damaged because they cannot get the oxygen and nutrients they need. For example, when blood flow to the brain is blocked, a stroke occurs. When plaque completely blocks a coronary artery, a heart attack takes place.

Cholesterol in the body comes from two sources. Most cholesterol is made by the liver from various nutrients and especially from saturated fats. The liver makes just about all the cholesterol the body will ever need. Since all animals can make their own cholesterol, some cholesterol in the human body comes directly from eating animal products. These foods include meats, egg yolks, organ meats, whole milk and milk products. This cholesterol is absorbed through the intestines and added to what the liver makes. It is also known that a diet high in saturated fat seems to increase cholesterol production in the body. Therefore, reducing dietary cholesterol and fats helps to keep blood cholesterol levels within a healthy range.

Fats in the Diet

Dietary fats can be saturated or unsaturated. An easy way to remember the difference is that saturated fats solidify or remain solid at room temperature. Unsaturated fats do not; they are liquid at room temperature. To reduce blood cholesterol levels, it is especially important to limit saturated fats. Saturated fats are found mainly in meats and dairy products made with whole milk.

Unsaturated fats (polyunsaturated and monounsaturated) are found mostly in plants, and are less likely to raise blood cholesterol levels. In fact, there is evidence that monounsaturated fats (olive, peanut, or canola oils) may even help to lower

blood cholesterol. There are a few vegetable fats such as coconut oil, palm oil, and cocoa butter (found in chocolate) that act like saturated fats in the body, so they should be avoided.

The term hydrogenated vegetable oils appears often on food labels. Hydrogenation is a manufacturing process for making vegetable oils solid at room temperature. Therefore, they are saturated even though they are vegetable oils. Hydrogenated oils are frequently used in baked goods, snack foods, and margarine. Remember that all fat in the diet must be reduced, but it is especially important to avoid saturated fats.

The amount of fat and cholesterol recommended for a healthy diet depends on the daily calorie requirements. Following are the guidelines used to determine the amount of fat and cholesterol allowed in the Step-1 and Step-2 diets.

Those people who like to do their own math can determine their daily fat allowance by using the following formula.

- * To determine what is 30% of calories, multiply the total day's calories by 0.30. Example: $1800 \text{ calories} \times 0.30 = 540$ fat calories allowed for a person eating 1800 calories per day.
- * To determine how many grams of fat = 540 calories, divide the calories from fat by 9, because each gram of fat = 9 calories. Example: $540 \text{ calories from fat} \div 9 = 60$ grams of fat allowed per day.
- * To determine how many of those 60 grams of fat may be saturated fat in a Step-1 diet, take $1/3 \times 60$. So, 20 grams of the total fat allowance may be saturated fat. On a Step-2 diet, take $1/4 \times 60$. Less than 15 grams of the total fat allowance allowed should be saturated fat.

Special Considerations

1. Limit sugar and alcohol. They provide few nutrients but many calories. Therefore, they contribute to high cholesterol by increasing body weight. An overweight body contains excess fat that is saturated.
2. Certain habits, such as cigarette smoking and a sedentary life, can increase the risk of heart disease. Cigarette smokers should quit. Regular aerobic exercise (at least 20 to 30 minutes, 3 times a week) can lower cholesterol levels and help to prevent the build-up of cholesterol plaque. It can also reduce stress that may cause high blood pressure, another heart disease risk.
3. Fish should be eaten often, 3 or more times per week. Research indicates that certain deep-sea fish -- mackerel, salmon, herring, albacore tuna, lake trout -- contain an oil called Omega-3 fatty acid. This oil may help to lower blood cholesterol. Fish oil supplements, however, are not recommended because they add too many calories.
4. Avoid high sodium content in foods. Some patients with high cholesterol also have high blood pressure. Reducing sodium can help to keep blood pressure within normal limits. Table salt is about 1/2 sodium. Sodium is also an ingredient in many commercially processed foods. Common medications such as antacids, laxatives, and cough remedies can contain large amounts of sodium. Read product labels and use products with no more than 300 mg of sodium per serving. Herbs and spices can be used in place of salt to add flavor and variety to meals. Do not use a salt substitute unless the physician has approved it.
5. Increase complex carbohydrates, (pasta, whole grains, and potatoes) in the diet. Like fats, they are an excellent source of energy without the harmful effects fats can have on the body. But, read labels of commercially prepared baked goods, cookies, and crackers. These products are notorious for using highly saturated fats such as coconut or palm oils and hydrogenated fats.
6. Eat 20 to 30 grams of dietary fiber every day. Foods such as legumes, oats, barley, brown rice, apples, strawberries, and carrots are good to eat because they contain soluble fiber. Research indicates that soluble fiber helps to lower blood cholesterol levels. Supplements such as psyllium mucilloid (trade names: Konsyl, Metamucil) can lower cholesterol up to 15% when used daily. Oat bran is another soluble fiber that has the same benefit.
7. Choose meats carefully. Grading of meats (Prime, Choice, or Good) refers to fat content, with Prime grades having the most fat. Marbling refers to the threads of white fat running through a cut of meat -- the greater the marbling, the more fat. Read labels and avoid any meat product with more than 3 grams of fat per ounce.
8. Eating out can be a challenge. Avoid fast food restaurants; their foods are usually high in fats and sodium. However, many restaurants now understand the need to provide items for clients on fat or cholesterol-restricted diets. Their menus often contain words like "heart healthy" or have items marked with the symbol™. Ask about ingredients and how foods are prepared. Choose foods wisely and ask for smaller portions.

The new nutrition labels on food products give consumers information on fat, saturated fat, cholesterol, sodium, and fiber content. If help is needed interpreting the labels, the physician or registered dietitian should be consulted.

Fat is measured in grams. Determine the number of calories needed each day. Then use the following chart for an easy way to find how many grams of fat are permitted each day for the Step-1 and Step-2 diets.

Sample Menu -- Step-1 Diet

Breakfast

grapefruit 1/2 cup
 cereal 3/4 cup
 banana 1/2
 egg substitute 1/4 cup
 whole wheat toast
 2 slices
 margarine 2 tsp
 jelly or jam 1 Tbsp
 1% milk 1 cup
 coffee/tea*
 *Use polyunsaturated creamer.

Lunch

vegetable beef soup 1 cup
 lean hamburger 2 oz
 low-fat cheese 1 oz
 hamburger bun
 sliced tomato and lettuce with
 2 tsp olive oil,
 2 tsp vinegar
 fresh fruit salad
 1/2 cup
 oatmeal cookie 1
 1% milk 1 cup

Dinner

tomato juice 1/2 cup
 broiled chicken breast 3 oz
 herbed brown rice 1/2 cup
 broccoli spears 2
 hard dinner roll 1
 margarine 1 tsp
 carrot/raisin salad 1/2 cup
 frozen strawberry yogurt 1/2
 cup
 1% milk 1 cup

This Sample Diet Provides the following:

Calories 2250
 Fat 72 gm
 Protein 114 gm
 Sodium 3495 mg
 Carbohydrates 282 gm
 Potassium 3750 mg
 Saturated fat 20 gm
 Cholesterol 180 mg

Sample Menu -- Step-2 Diet

Breakfast

grapefruit 1/2
 cereal 3/4 cup
 banana 1/2
 egg substitute 1/4 cup
 whole wheat toast 2 slices
 margarine 2 tsp
 jelly or jam 1 Tbsp
 skim milk 1 cup
 coffee/tea*
 *Use polyunsaturated creamer.
 **Use allowed polyunsaturated fat
 in preparation.

Lunch

vegetable beef soup 1 cup
 lean hamburger 2 oz
 low-fat cheese 1 oz
 hamburger bun
 sliced tomato and lettuce
 dill pickle 1/4
 fresh fruit salad
 1/2 cup
 oatmeal cookie 1**
 skim milk 1 cup

Dinner

tomato juice 1/2 cup
 broiled chicken breast 3 oz
 herbed brown rice
 1/2 cup
 broccoli spears 2
 hard dinner roll 1
 margarine 1 tsp
 carrot/raisin salad
 1/2 cup
 frozen strawberry yogurt 1/2
 cup
 skim milk 1 cup

This Sample Diet Provides the following:

Calories 2150
 Fat 65 gm
 Protein 110 gm
 Sodium 3540 mg
 Carbohydrates 276 gm
 Potassium 3665 mg
 Saturated fat 14 gm
 Cholesterol 165 mg

Fat is measured in grams. Determine the number of calories needed each day. Then use the following chart for an easy way to find how many grams of fat are permitted each day for the Step-1 and Step-2 diets.

Step-1 Diet		
Daily Cholesterol Intake = 300 mg or less		
<u>Daily Calories</u>	<u>Total Fat (Grams)</u>	<u>Total Saturated Fat (Grams)</u>
1000	33	11
1200	40	13
1500	50	16
2000	66	22
2200	73	24
2500	83	27

Step-2 Diet
Daily Cholesterol Intake = 200 mg or less

<u>Daily Calories</u>	<u>Total Fat (Grams)</u>	<u>Total Saturated Fat (Grams)</u>
1000	33	8
1200	40	10
1500	50	12
2000	66	16
2200	73	18
2500	83	20
2800	93	23

	Step-1	Step-2
Total Fat	no more than 30% of total calories	no more than 30% of total calories
Saturated Fat	no more than 1/3 of the total fat calories may be saturated fat	less than 1/4 of the total fat calories may be saturated fat
Cholesterol	no more than 300 mg	no more than 200 mg

Complex Carbohydrates
(Starches/Breads/Cereals)

Choose

Baked goods: whole grain or enriched breads and rolls; low-fat or homemade muffins, pancakes, waffles, and biscuits using polyunsaturated margarine or oil and non-fat milk

Home recipes use weekly egg allowance or use egg whites and egg substitutes

Tortillas: corn, soft flour made with unsaturated oils

Pasta & Rice: noodles, spaghetti, macaroni, brown rice (preferred), white rice, wild rice

Cereals: cooked or dry (unsweetened preferred), oats and bran, barley

Crackers/Snacks: unsalted crackers, pretzels, popcorn prepared with air popper or mono/polyunsaturated oil

Avoid

butter or cheese rolls and breads; croutons; commercial biscuits, muffins, pancakes, pastries, sweet rolls, donuts, croissants, popovers

store bought mixes with saturated fats including coconut, palm oils, and hydrogenated fats

soft flour made with lard, shortening, hydrogenated fats, coconut, and palm oils prepared with whole eggs, cream, and cheese sauces; canned or boxed noodle and macaroni dishes; canned spaghetti dishes

any with coconut, instant hot cereals, granola

salted crackers or snacks; fried snack foods; any snacks or crackers containing saturated fats, coconut or palm oils, hydrogenated or partially hydrogenated fats; cheese crackers or snacks; potato chips; corn chips; tortilla chips; chow mein noodles; commercial buttered popcorn

Meats and Proteins

Limit total portion of meat, seafood, poultry, egg, cheese, peanut butter, and tofu to 6 oz daily for Step-1 diet; limit to 5 oz daily for Step-2 diet.

Serving Guide

Raw meat, fish, and poultry lose weight in cooking. Three ounces cooked is about the size of a deck of cards and equals:

4 oz raw meat or fish without bone

3/4 cup cooked, flaked, or chopped meat, fish, crab, lobster

9 to 12 clams, oysters, scallops

a ground beef patty, 3" diameter x 1"

thick 1/2 large chicken breast

Serving guide for substitutes - 1 ounce of meat equals the following:

1/4 cup tuna or cottage cheese

2 oz lobster

4-6 oz tofu

1 Tbsp peanut butter

1 oz cheese

1 egg

1/2 large chicken breast
1 chicken thigh and drumstick

2 egg white
1/3 cup cooked legumes

Choose

Lean meats: trim visible fat, limit to one 3 oz serving per meat, five meals per week, beef (round, sirloin, chuck, loin, super lean hamburger/ground beef); lamb (leg, arm, loin); pork (tenderloin, fresh leg, shoulder-arm, picnic); veal (all trimmed cuts except commercially ground)

Poultry: chicken and turkey with skin removed

Eggs: egg whites and low cholesterol egg substitutes; Step-1 limit, 4 egg yolks per week; Step-2 limit, one egg yolk per week

Organ meats: liver for Step-1, limit to one 3 to 4 oz serving per week in place of one whole egg

Seafood: swordfish, mackerel, albacore tuna, salmon, walleye, pollack, blue; Step-1: shrimp, eel, oysters, squid limited to one serving per week

Cheese: Step-1: skim or part-skim milk cheese such as mozzarella, ricotta, bakers, farmers, hoop, low-fat (1%) cottage cheese, and pot cheese; special low-fat/low cholesterol cheeses Step-2: low-fat (1%) cottage cheese, pot cheese, part-skim ricotta, Weight Watchers, Swiss

Wild game: elk, deer (venison), pheasant, rabbit, wild duck, squirrel

Beans: dried beans, peas, lentils; tofu; peanut butter - limit to 2 Tbsp a day

Milk: skim, non-fat (fluid, powered, evaporated, condensed), buttermilk, lactose-reduced, and sweet acidophilus made from skim milk

Yogurt: made from skim or non-fat milk

Creamers: only those containing polyunsaturated oils

Avoid

Fatty meats: corned beef, regular pastrami, mutton, ham, Canadian bacon, luncheon meats, short ribs, spareribs, bacon, sausage, frankfurters, canned meats, scrapple, sandwich spreads

self-basted poultry; processed poultry products such as turkey franks, chicken franks, turkey bologna

Step-1: egg yolks over 4 per week Step-2: egg yolks over one per week; Includes yolks in cooked or prepared foods

liver for Step-2, brain, kidney, heart, tripe, sweetbreads, chitlins (pig intestines), gizzards, pork maw (stomach), all other organ meats

caviar, roe, anchovy for Step-1 and Step-2; No shrimp, eel, oysters, squid for Step-2

cream cheese; processed cheese and cheese spreads; all other cheeses

domestic duck and goose

regular canned peas, beans, lentils

any milk product made with whole or 2% milk, chocolate milk, milkshakes, eggnog, coconut milk

made from whole milk or custard style any containing coconut or palm oils; whipped, sour, light, heavy, half & half creams

Fruits and Vegetables

Choose

Vegetables: fresh, frozen, or low-sodium canned; low-sodium tomato and vegetable juices

Fruit: fresh, unsweetened dried fruits; canned or frozen packed in water, own juice or light syrup preferred; all fruit juices (unsweetened preferred)

Avoid

regular tomato sauce and puree; spaghetti sauce; creamed, breaded, or deep-fat fried vegetables; vegetables in sauces; regular tomato and vegetable juices
canned or frozen packed in heavy syrup, sweetened dried fruits, coconut, fried fruit snack chips

Fats

Although fats in nuts, seeds, and avocado are mostly unsaturated, they are very high in calories and should be limited.

Choose

Polyunsaturated fats: sunflower, safflower,

Avoid

butter, lard, beef tallow, salt pork, bacon,

corn, soybean, cottonseed, sesame oils;
monounsaturated fats canola, olive, peanut
oils

Margarine: made with unsaturated fats, with
liquid oil the first ingredient; tub margarine
preferred over stick

Salad dressings: made with unsaturated oils
Seeds and nuts: unsalted pumpkin seeds,
sesame seeds, sunflower seeds, any nuts
not on the avoid list

bacon drippings, lard, animal fat,
shortening, suet, chocolate, cocoa butter,
coconut, coconut oil, palm and palm kernel
oil, hydrogenated fats

made with saturated fat or hardened
(hydrogenated) vegetable oil

made with saturated oil and/or egg yolk
cashews, macadamia, pistachio, Brazil,
salted seeds & nuts, coconut

Miscellaneous

Choose

Desserts: homemade baked goods made
with unsaturated oils or margarine, skim or
1% milk, and egg substitute or egg whites;
gelatin; angel food cake; ginger snaps; fruit
ice, fruit whips, sorbet, sherbet - lime two 1/2
cup servings per week; low-fat frozen
desserts; puddings, custards, or junkets
made with non-fat milk and egg allowances

Beverages: sparkling or mineral water,
seltzer, club soda - unsweetened preferred;
coffee; tea; Postum

Soups & sauces: fat-free, low-salt broth,
consomme, and bouillon; homemade soup
skimmed of fat; cream soup and sauces
made with non-fat milk and fat allowance

Other: spices, herbs, pepper, lemon juice,
garlic & onion powder, Tabasco, catsup,
mustard, vinegar, relishes, jam, jelly,
marmalade (unsweetened preferred)

Avoid

made with whole milk, cream, butter,
chocolate, and egg yolk; commercially
prepared cakes, pies, cookies, pastries; ice
cream; chocolate desserts; frozen cream
pies; commercial dessert mixes such as
cake and brownie mixes; chocolate; candies
made with cream fillings

tonic, commercially or home softened water,
instant cocoa mixes, Dutch processed
cocoa

soup made with whole milk or cream; broth
containing fat; canned soups; dehydrated
soup mixes; bouillon not labeled low-
sodium; gravy and sauces made with butter,
other animal fat, and whole milk
commercially fried foods, pickles, any foods
containing items not allowed

Nutrition Labels

The new nutrition labels on food products give consumers information on fat, saturated fat, cholesterol, sodium, and fiber content. If help is needed interpreting the labels, the physician or registered dietitian should be consulted.



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Low Fat Diet

Choose a diet low in fat, saturated fat, and cholesterol

Some dietary fat is needed for good health. Fats supply energy and essential fatty acids and promote absorption of the fat-soluble vitamins A, D, E, and K. Most people are aware that high levels of saturated fat and cholesterol in the diet are linked to increased blood cholesterol levels and a greater risk for heart disease. More Americans are now eating less fat, saturated fat, and cholesterol-rich foods than in the recent past, and fewer people are dying from the most common form of heart disease. Still, many people continue to eat high-fat diets, the number of overweight people has increased, and the risk of heart disease and certain cancers (also linked to fat intake) remains high. This guideline emphasizes the continued importance of choosing a diet with less total fat, saturated fat, and cholesterol.

Foods high in fat should be used sparingly

Some foods and food groups in the Food Guide Pyramid are higher in fat than others. Fats and oils, and some types of desserts and snack foods that contain fat provide calories but few nutrients. Many foods in the milk group and in the meat and beans group (which includes eggs and nuts, as well as meat, poultry, and fish) are also high in fat, as are some processed foods in the grain group. Choosing lower fat options among these foods allows you to eat the recommended servings from these groups and increase the amount and variety of grain products, fruits, and vegetables in your diet without going over your calorie needs.

Choose a diet low in fat

Fat, whether from plant or animal sources, contains more than twice the number of calories of an equal amount of carbohydrate or protein. Choose a diet that provides no more than 30 percent of total calories from fat. The upper limit on the grams of fat in your diet will depend on the calories you need.

MAXIMUM TOTAL FAT INTAKE AT DIFFERENT CALORIE LEVELS

Calories	1,600	2,200	2,800
Total fat (grams)	53	73	93

Cutting back on fat can help you consume fewer calories. For example, at 2,000 calories per day, the suggested upper limit of calories from fat is about 600 calories. Sixty-five grams of fat contribute about 600 calories (65 grams of fat x 9 calories per gram = about 600 calories). On the Nutrition Facts Label, 65 grams of fat is the Daily Value for a 2,000-calorie intake.

Choose a diet low in saturated fat

Fats contain both saturated and unsaturated (monounsaturated and polyunsaturated) fatty acids. Saturated fat raises blood cholesterol more than other forms of fat. Reducing saturated fat to less than 10 percent of calories will help you lower your blood cholesterol level. The fats from meat, milk, and milk products are the main sources of saturated fats in most diets. Many bakery products are also sources of saturated fats. Vegetable oils supply smaller amounts of saturated fat. On the Nutrition Facts Label, 20 grams of saturated fat (9 percent of caloric intake) is the Daily Value for a 2,000-calorie diet.

Monounsaturated and polyunsaturated fat. Olive and canola oils are particularly high in monounsaturated fats; most other vegetable oils, nuts, and high-fat fish are good sources of polyunsaturated fats. Both kinds of unsaturated fats reduce blood cholesterol when they replace saturated fats in the diet. The fats in most fish are low in saturated fatty acids and contain a certain type of polyunsaturated fatty acid (omega-3) that is under study because of a possible association with a decreased risk for heart disease in certain people. Remember that the total fat in the diet should be consumed at a moderate level -- that is, no more than 30 percent of calories. Mono- and polyunsaturated fat sources should replace saturated fats within this limit.

Partially hydrogenated vegetable oils, such as those used in many margarines and shortenings, contain a particular form of unsaturated fat known as trans-fatty acids that may raise blood cholesterol levels, although not as much as saturated fat.

Choose a diet low in cholesterol

The body makes the cholesterol it requires. In addition, cholesterol is obtained from food. Dietary cholesterol comes from animal sources such as egg yolks, meat (especially organ meats such as liver), poultry, fish, and higher fat milk products. Many of these foods are also high in saturated fats. Choosing foods with less cholesterol and saturated fat will help lower your blood cholesterol levels.

FOR A DIET LOW IN FAT, SATURATED FAT, AND CHOLESTEROL Fats and Oils

- * Use fats and oils sparingly in cooking and at the table.
- * Use small amounts of salad dressings and spreads such as butter, margarine, and mayonnaise. Consider using lowfat or fat-free dressings for salads.
- * Choose vegetable oils and soft margarines most often because they are lower in saturated fat than solid shortenings and animal fats, even though their caloric content is the same.
- * Check the Nutrition Facts Label to see how much fat and saturated fat are in a serving; choose foods lower in fat and saturated fat.

Grain Products, Vegetables, and Fruits

- * Choose lowfat sauces with pasta, rice, and potatoes.
- * Use as little fat as possible to cook vegetables and grain products.
- * Season with herbs, spices, lemon juice, and fat-free or lowfat salad dressings.

Meat, Poultry, Fish, Eggs, Beans, and Nuts

* Choose two to three servings of lean fish, poultry, meats, or other protein-rich foods, such as beans, daily. Use meats labeled "lean" or "extra lean." Trim fat from meat; take skin off poultry. (Three ounces of cooked lean beef or chicken without skin -- a piece the size of a deck of cards -- provides about 6 grams of fat; a piece of chicken with skin or untrimmed meat of that size may have as much as twice this amount of fat.) Most beans and bean products are almost fat-free and are a good source of protein and fiber.

* Limit intake of high-fat processed meats such as sausages, salami, and other cold cuts; choose lower fat varieties by reading the Nutrition Facts Label.

* Limit the intake of organ meats (three ounces of cooked chicken liver have about 540 mg of cholesterol); use egg yolks in moderation (one egg yolk has about 215 mg of cholesterol). Egg whites contain no cholesterol and can be used freely.

Milk and Milk Products

* Choose skim or lowfat milk, fat-free or lowfat yogurt, and lowfat cheese.

* Have two to three lowfat servings daily. Add extra calcium to your diet without added fat by choosing fat-free yogurt and lowfat milk more often. [One cup of skim milk has almost no fat, 1 cup of 1 percent milk has 2.5 grams of fat, 1 cup of 2 percent milk has 5 grams (one teaspoon) of fat, and 1 cup of whole milk has 8 grams of fat.] If you do not consume foods from this group, eat other calcium-rich foods.

The Nutrition Facts Label lists the Daily Value for cholesterol as 300 mg. You can keep your cholesterol intake at this level or lower by eating more grain products, vegetables and fruits, and by limiting intake of high cholesterol foods.

Advice for children

Advice in the previous sections does not apply to infants and toddlers below the age of 2 years. After that age, children should gradually adopt a diet that, by about 5 years of age, contains no more than 30 percent of calories from fat. As they begin to consume fewer calories from fat, children should replace these calories by eating more grain products, fruits, vegetables, and lowfat milk products or other calcium-rich foods, and beans, lean meat, poultry, fish, or other protein-rich foods.

ADVICE FOR TODAY

To reduce your intake of fat, saturated fat, and cholesterol, follow these recommendations, as illustrated in the Food Guide Pyramid, which apply to diets consumed over several days and not to single meals or foods.

- * Use fats and oils sparingly.
- * Use the Nutrition Facts Label to help you choose foods lower in fat, saturated fat, and cholesterol.
- * Eat plenty of grain products, vegetables, and fruits.
- * Choose lowfat milk products, lean meats, fish, poultry, beans, and peas to get essential nutrients without substantially increasing calorie and saturated fat intakes.