

Chapter 7

Fat Restricted Diets

1. Heart Healthy Diet
2. Lifestyle Change Diet
3. Low Fat Diet

1) Heart Healthy Diet

Formerly known as:

Cholesterol - Saturated Fat Restricted Step 1 Diet

Heart Healthy Diet

- Type of fat is restricted
- Goal: To improve blood lipid profile
 - ↓ Cholesterol
 - ↓ LDL
 - ↓ TAGs
 - ↑ HDL
- Diet is adequate in all nutrients and provides DRIs for all nutrients.

General Guidelines for the Heart Healthy Diet

- Maintain healthy body weight,
- < 30% of total energy intake from fat,
- 8-10% of total energy intake from SF,
- < 300 mg cholesterol / day,
- < 1 % of total energy intake from trans fats,
- Limit Na intake to 2,400 mg/day.

Cholesterol & Other Lipids Content of Foods

| Dairy Products | Portion | Cholesterol (mg) | Total Fat (g) | Saturated Fat (g) |
|-----------------------------|---------|---------------------|------------------|----------------------|
| Milk (non-fat) | 1 cup | 4 | 0 | 0 |
| Milk (low-fat) | 1 cup | 10 | 3 | 2 |
| Milk (whole) | 1 cup | 33 | 8 | 5 |
| Yogurt (non-fat) | 1 cup | 10 | 0 | 0 |
| Yogurt (whole) | 1 cup | 29 | 7 | 5 |
| Cheddar Cheese | 1 oz. | 30 | 9 | 6 |
| Cottage Cheese (low-fat) | 1 cup | 10 | 2 | 2 |
| Cottage cheese (Regular) | 1cup | 36 | 9 | 3.6 |

Cholesterol & Other Lipids Content of Foods

Cont'd.

| Fats | Portion | Cholesterol (mg) | Total Fat (g) | Saturated Fat (g) |
|-------------|---------|---------------------|------------------|----------------------|
| Butter | 1 tsp | 10 | 4 | ≈ 2 |
| Margarine | 1 tsp | 0 | 4 | ≈ 1 |
| Corn Oil | 1 tsp | 0 | 5 | ≈ 1 |

Cholesterol & Other Lipids Content of Foods

Cont'd.

| Meats & Protein | Portion | Cholesterol (mg) | Total Fat (g) | Saturated Fat (g) |
|-----------------|---------|---------------------|------------------|----------------------|
| Tofu | 1/2 cup | 0 | 11 | 2 |
| Pinto beans | 1/2 cup | 0 | 1 | 0 |
| Egg | 1 | 212 | 5 | 2 |
| Halibut | 3 ½ oz. | 41 | 3 | 0 |
| Salmon | 3 ½ oz. | 63 | 12 | 2 |
| Oysters | 3 ½ oz. | 55 | 2 | 1 |
| Crab | 3 ½ oz. | 52 | 1 | 0 |
| Lobster | 3 ½ oz. | 71 | 1 | 0 |
| Tuna (in water) | 3 ½ oz. | 30 | 1 | 0 |
| Shrimp | 3 ½ oz. | 194 | 1 | 0 |
| Squid | 3 ½ oz. | 231 | 1 | 0 |



Squid



Calamari

Cholesterol & Other Lipids Content of Foods Cont'd.

| Meats & Protein | Portion | Cholesterol (mg) | Total Fat (g) | Saturated Fat (g) |
|----------------------|---------|---------------------|------------------|----------------------|
| Beef (ground, lean) | 3 ½ oz. | 78 | 18 | 7 |
| Beef (short ribs) | 3 ½ oz. | 94 | 42 | 18 |
| Beef (sirloin) | 3 ½ oz. | 89 | 12 | 5 |
| Beef Liver | 3 ½ oz. | 389 | 5 | 2 |
| Veal (top round) | 3 ½ oz. | 135 | 5 | 2 |
| Lamb (foreshank) | 3 ½ oz. | 106 | 14 | 6 |
| Ham | 3 ½ oz. | 53 | 6 | 2 |
| Pork (tenderloin) | 3 ½ oz. | 79 | 6 | 2 |
| Pork (chop) | 3 ½ oz. | 85 | 25 | 10 |
| Chicken Liver | 3 ½ oz. | 631 | 6 | 2 |
| Chicken (no skin) | 3 ½ oz. | 85 | 5 | 1 |

Most Common Sources of Trans Fats

- Foods prepared with partially hydrogenated oils especially commercially prepared cakes, cookies, and crackers, pastries, etc.
- Commercially fried foods
- Regular margarines, shortenings
- Fast foods such as French fries, chicken nuggets, fried fish, and fried sweets
- ❖ Any food containing partially hydrogenated oils
- ❖ Read labels.

- Non dairy creamers contain partially hydrogenated oils
- Are loaded with trans fats to replicate the mouth-feel of milk fats.



The Heart Healthy Diet

The Heart Healthy Diet


- Low in Saturated, Hydrogenated, and Trans fats
- Low in Cholesterol

Making heart healthy food choices and being at a healthy body weight can help prevent and treat heart disease.

Too much of any kind of fat is not good for your health. Saturated fat, hydrogenated fat, and trans fat are especially harmful to your heart. A heart healthy diet is low in these harmful fats but may include moderate amounts of healthy fats.

When it comes to your weight, all fats are equally high in calories. When it comes to your heart, some fats are bad and some are good.

How can I tell the difference between these types of fats?



| Unhealthy Fats Saturated, Hydrogenated and Trans Fats Strictly Limit Intake: | Healthy Fats Monounsaturated and Polyunsaturated Fats Use in moderation: |
|--|--|
| <ul style="list-style-type: none">• Solid at room temperature• Animal Fats (Saturated fats) Meats, cheese, cream, butter, lard, chicken skin• Tropical Oils Coconut and palm oils• Hydrogenated Oils (Trans fats) Stick margarines, shortening, fast-food, processed food | <ul style="list-style-type: none">• Liquid at room temperature• Plants Oils Olive, safflower, canola, sunflower, soy, peanut oils• Nuts and avocados• Omega-3 fats Salmon, mackerel, herring, flaxseeds, walnuts, soybean and canola oils |

What about cholesterol?

In addition to the dietary fat guidelines above, we recommend you limit cholesterol intake. Cholesterol is found in all animal products. It is most concentrated in meats, egg yolks, organ meats, shrimp, and squid. A reasonable serving of lean meat is the same size as the palm of your hand, once or twice a day.

General Recommendations for the Heart

Healthy Diet Cont'd.

- Whole grains, fruits and vegetables should provide most of the energy from CHOs.
- When blood TAGs are high and HDL is low, replace simple and refined CHOs with MUF to allow 35% of total energy from fat; e.g. Nuts, Avocado, olive oil
- Eat foods high in $\omega 3$ FAs including:
 - Fatty fish twice a week
 - Walnuts
 - Flaxseeds
 - $\omega 3$ fortified eggs
 - Oils such as soybean oil and canola oil

2) Therapeutic Lifestyle Change Diet TLC

- Previously known as Cholesterol-Saturated Fat Restricted Step II Diet.
- It is recommended for people who are at high risk of CVDs or do have CVDs.

TLC Diet

- Goals: To reduce Total Cholesterol, LDL and TAGs, and increase HDL in blood.
- Adequacy: Adequate in all nutrients.

TLC Diet

- Incorporates functional foods
- Functional foods include:
 - Whole foods: foods that are minimally processed or refined, free of additives or other artificial substances.
 - Fortified, enriched or enhanced foods that have potential benefits when consumed at effective levels as part of the varied diet on a regular basis.

TLC Diet Guidelines

- Fat: 25-35% of TER
- Cholesterol: < 200 mg/day
- Saturated Fat: < 7% of TER
- Trans fats: < 1% of TER
- PU fats: up to 10% of TER
- MU fats: up to 20 % of TER

TLC Diet Guidelines

Cont'd.

- CHO : 50-60% of TER
 - (Most should come from whole grains, fruits and vegetables)
 - Replace refined CHOs and simple sugars with MUF to meet energy requirement when TAGs are high and HDL is low.
- Proteins: 15% of TER
- Plant stanols/sterols: 2 g/day
 - Substances that occur naturally in small amounts in many grains, vegetables, fruits, legumes, nuts, and seeds. May reduce risk of CHD since they have cholesterol-lowering effect, manufacturers started adding them to foods.
 - Most natural foods contain < 0.5 g / serving.
 - Manufacturers supplement foods to meet this recommendation.
- Soluble fiber : 10-25 g/day

Food Sources of Plant Sterols

| Food | Amount | Amount of Sterols (grams) |
|--|---------|----------------------------|
| Avocado | 1 small | 0.13 |
| Sunflower seeds | ¼ cup | 0.19 |
| Nature Valley Healthy Heart (Chewy Granola Bars) | 1 bar | 0.40 |
| Corazonas Chips | 1 pack | 0.40 |
| Rice Dream “ Heart Wise Rice Milk ” | 8 oz. | 0.65 |
| Silk “ Heart Health Soymilk “ | 8 oz. | 0.65 |
| Lifetime “ Low-Fat Cheese Slices “ | 1 slice | 0.65 |
| Minute Maid Heart Wise | 8 oz. | 1 |
| Benecol Take Control | 1 Tbsp. | 1 |
| Smart Balance “ Heart Right Buttery Spread “ | 1 Tbsp. | 1.70 |



Chewy Granola Bars



Benecol Spread

Sources of Soluble Fiber



Legumes



Avocado



Flax seeds



Oat bran



Chia seeds

TLC Diet Guidelines Cont'd.

- Maintain healthy body weight and prevent weight gain.
- Increase physical activity to expend additional 200 kcal/day.
- Soy protein can be used to replace animal protein.

Soy Protein Products



Tofu



Tempeh



Soy milk

Elderly who have High LDL

- Benefit from recommended modifications.
- Simple modifications to the general diet will meet above mentioned recommendation.
- Least deviation from their long standing eating habits makes them feel better.
- Studies show that using Statin (cholesterol lowering drug) in the elderly:
 - May not be beneficial and
 - May increase adverse effects such as muscle degeneration and cognitive decline.

3) Low Fat Diet

- Amount of fat is restricted.
- Fat content: 40-50 g/day; (18-23)% of TER
 - Least amount of fat should be 15%.

Low Fat Diet Cont'd.

Diet Indication

- For diseases of the:
 - Gallbladder
 - Liver
 - Pancreas
 - Disturbances in digestion and absorption of fat.

Low Fat Diet Cont'd.

Adequacy

- Adequate in nutrients.
- Might be low in kcal.
 - Extra kcal can be provided through:
 - Complex CHOs
 - MCT oils (medium chain TAGs) (oils containing MCFAs)
 - MCT oils contain caprylic acid (C8), capric acid (C10) and lauric acid (C12).
 - MCFAs passively diffuse from the GI tract to the blood.
 - MCFAs do not require bile salts for digestion.

Low Fat Diet Cont'd.

| Food Group | Allow | Avoid |
|--|---|--|
| Dairy Products : 2 - 3 or more cups/day | Fat free products Any low – fat dairy substitute such as rice- milk, soy-milk Part skim cottage cheese Low fat natural or processed cheeses with $\leq 17\%$ fat; | Whole milk ($\approx 3.25\%$) Reduced fat milk (2%) Low fat milk (1%) and their products Ice cream; Cream Coconut milk |
| Meat and Beans: 2-7 oz. /day | Lean Meat list foods Poultry and fish | Visible fat Skins Processed meat Canned in oil such as Sardines in oil, Tuna in oil etc.; Fried Foods |

Low Fat Diet Cont'd.

| Food Group | Allow | Avoid |
|---|---|--|
| <p>Eggs: if tolerated) Limit to 1 yolk/day including what's in composite dishes. 1 yolk contains 5 g fat;</p> <p>Egg whites: As desired</p> | <p>Prepared without added fat</p> <p>Prepared without added fat</p> | <p>Prepared with added fat such as fried eggs, etc</p> |
| Legumes | Allow if they do not cause discomfort | Any that causes discomfort |
| <p>Fruits: 1-2.5 c /day</p> | All except | Any fruit that is not tolerated |

Low Fat Diet

| Food Group | Allow | Avoid |
|--|---|---|
| Vegetables: 1-4 cups/day | All prepared with allowed amount of fat which is 1 Tbsp./ day | Any fried; Any that causes discomfort; |
| Grains: 3-10 oz./day | Prepared with allowed amount of fat | High fat starchy foods such as: High fat snacks like potato chips and the like |
| Oils/ fats: 1 Tbsp. / day contains 15 g fat | Any type is allowed | More than 1 Tbsp. / day; Nuts; Seeds; Coconuts; Avocados; Cream; Non-dairy creamers; Olives, Gravies and sauces unless fat-free |

Low Fat Diet Cont'd.

| Food Group | Allow | Avoid |
|-----------------|--|--|
| Soups | Home made with fat free liquids | Commercial soups, cream soups. |
| Fluids | Water and all other fluids | |
| Sweets/Desserts | Sugar; Honey; Syrup; Jams and Jellies; Fat free candy; Jelly beans; Marshmallows; Angel food cake [contains only egg whites, flour, and sugar]; Fruit ice; Puddings made with skim milk. | Cakes, cookies, pies, pastries, doughnuts; muffins; cream, chocolate, anything with nuts and coconuts. |