

Eat Healthy

Chapter 4

Cholesterol, Triglycerides and the Mediterranean Diet Pattern

You Will Learn About:

1. Cholesterol
 - a. The types of blood cholesterol
 - b. The targets for blood cholesterol
 - c. Foods that raise and lower your blood cholesterol
2. Mediterranean Diet Pattern
 - a. What the Mediterranean diet is
 - b. How the Mediterranean diet helps manage diabetes
 - c. Tips for eating a Mediterranean diet
3. Triglycerides
 - a. What triglycerides are
 - b. The target for triglycerides
 - c. Foods that raise and lower triglycerides

People living with diabetes often have high cholesterol. Both diabetes and high cholesterol put you at risk for heart disease.

1. What is Cholesterol?

Cholesterol is a wax-like substance found in your body. Your body needs cholesterol to:

- Make vitamin D
- Make bile (a fluid made by the liver to help break down fats)
- Make male and female hormones (testosterone and estrogen)
- Keep your cell membranes (the wall that lines the cells in your body) healthy

Your liver makes most of the cholesterol in your body. The rest comes from the animal products you eat. Only animal products have cholesterol (animal products include meat, fish, eggs, and dairy).

Types of cholesterol in the blood

There are two main types of cholesterol:

- 1) Low density lipoprotein (LDL) cholesterol
- 2) High density lipoprotein (HDL) cholesterol

What is LDL Cholesterol?

LDL cholesterol is often called 'bad' cholesterol. LDL cholesterol is a problem when levels get too high in your blood.

- When LDL (bad) cholesterol gets too high, it can slowly collect as plaque on the walls of your blood vessels

- If too much plaque collects, the plaque narrows or blocks your blood vessel. This block prevents blood from getting to your heart or brain
- When blood cannot get to your heart or brain, you can have a heart attack or stroke

Reduce the amount of foods you eat with LDL (bad) cholesterol to keep your LDL cholesterol levels low (less than 2.0 mmol/L).

What is the Healthy Target for my LDL Cholesterol Level?

Your LDL (bad) cholesterol level is measured from a blood test. A healthy target for your LDL (bad) cholesterol level is less than 2.0 mmol/L.

What Foods Increase my LDL Cholesterol?

Foods high in trans fat and saturated fat increase your LDL (bad) cholesterol level. Trans fats are found in commercially prepared (factory-made) or processed foods and saturated fats are found mostly in animal foods.

What is HDL Cholesterol?

HDL cholesterol is often called 'good' cholesterol. HDL cholesterol helps carry LDL (bad) cholesterol away from the walls of your blood vessels.

What is the Healthy Target for my HDL Cholesterol Level?

Your HDL cholesterol level is measured using a blood test. A healthy target for your HDL cholesterol level is greater than 1.0 mmol/L.

What Foods Increase my HDL Cholesterol Level?

Foods that have unsaturated fats (such as omega-3 fats) that come from fish can increase your HDL (good) cholesterol level.

2. What Is the Mediterranean Diet Pattern and How Does It Help Manage Diabetes?

What is the Mediterranean Diet Pattern?

You can protect your heart and reduce your risk of heart disease by eating a Mediterranean diet pattern. A Mediterranean diet pattern includes healthy fats and oils that come from plants.

A Mediterranean diet pattern can lower your risk of getting a heart attack, angina or stroke by 50-70%.

A Mediterranean diet pattern is a pattern of eating that is common in the countries around the Mediterranean Sea. You can adapt this diet pattern to any country or culture. It is a way of eating and a lifestyle approach to manage your diabetes and health.

Features of a Mediterranean diet pattern include eating more fresh whole foods and mostly plants at every meal such as:

- Vegetables and fruit
- Pulses (dried beans/peas, lentils, and chickpeas)
- Whole grains (barley, oats, quinoa, brown and wild rice, etc.)
- Fats and oils that come from plants (olive oil, avocado, nuts and/or seeds)
- Fish

The Mediterranean diet pattern is not vegetarian, but you eat less meat and less higher fat dairy foods (such as cheese).

The type of fat found in animal foods is mostly saturated fat. Saturated fats raise LDL (bad) cholesterol in your blood. The Mediterranean diet pattern is

low in animal fats, high in fibre and low in the glycemic index (Read Chapter 3 of this section on 'Fibre and Glycemic Index' to learn more).

The Mediterranean diet pattern suggests cooking at home more often with fresh foods instead of using processed, prepared foods and restaurant meals.

Why follow the Mediterranean diet pattern?

Many studies show that a Mediterranean diet pattern can help you manage your diabetes and improve your health. A Mediterranean diet pattern can:

- Lower your A1c
- Improve how well your body uses insulin (a hormone in your body that helps control your blood sugar level)
- Lower your total and LDL (bad) cholesterol
- Lower your triglyceride level (a type of fat in your blood)
- Lower your blood pressure
- Protect the tissues of your body from damage (inflammation) that can lead to disease (such as arthritis, heart disease, and cancer)
- Prevent or delay diabetes if you are living with pre-diabetes
- Prevent heart disease and some cancers

Tips for Eating a Mediterranean Diet Pattern

Tip #1 – Have at least one serving of fruits and vegetables with every meal

- Choose fruits and vegetables that differ in colour
- Include fruits and vegetables that are raw, frozen, roasted, and steamed
- Add vegetables to soup or sauté them in a stir-fry

Tip #2 – Choose vegetarian sources of protein at least 3 times each week

- Add legumes such as chickpeas, lentils, and dried beans to salads and soups
- Add tofu or edamame to a stir-fry
- Replace some of the meat in recipes (such as chilli, pasta sauce, and tacos) with a vegetable protein

Tip #3 – Prepare your own food more often

- When you prepare your own food, you know what is going into your food. Foods that are prepared when you buy them are processed and tend to be higher in sodium, sugar and saturated fat

Tip #4 – Include healthy fats

- Use extra-virgin olive oil when cooking
- Make your own salad dressings using olive oil, vinegar, and other seasonings (such as mustard, small amounts of honey or maple syrup, garlic, and herbs)
- Eat nuts, peanuts, seeds, and avocados in salads or as a snack

Tip #5 – Choose whole grains that prevent your blood sugar from going too high and then dropping (have a low glycemic index)

- Eat foods such as, quinoa, brown rice, bulgur, barley, steel cut oats, rolled oats, and whole grain, dense bread

Tip #6 – Eat some dairy products

- Choose lower fat, plain Greek, or regular yogurt. Add fresh fruit and nuts for flavour
- Use cheese as a garnish. Add a small amount of Parmesan cheese to pasta or add a crumble of feta cheese to salads

3. What Are Triglycerides?

Triglycerides are a form of fat that is carried in your blood.

- High levels of triglycerides increase your risk for heart disease and a heart attack
- High fat foods, sugar and alcohol can lead to high levels of triglycerides
- People living with pre-diabetes or diabetes often have a higher than normal triglyceride level
- A Mediterranean diet pattern can lower your triglyceride level

What is the Healthy Target for my Triglyceride Level?

A healthy target for triglycerides is less than 1.7 mmol/L for people living with pre-diabetes and diabetes. Ask your doctor about your triglyceride level the next time you get your blood work results from the lab.

Foods that lower my triglyceride level:

Foods that are part of the Mediterranean diet pattern can lower your triglyceride level.

1. Vegetables, Fruit, Whole grains, Legumes, Nuts and Seeds

These foods are high in fibre and provide lots of vitamins and minerals that your body needs.

- Aim to include a vegetable and/or fruit every time you eat a main meal
- Eat a mix of different coloured vegetables. Eating vegetables of different colours will give you different nutrients
- Choose low glycemic index foods made from whole grains (such as barley, oatmeal, quinoa, brown or wild rice, kasha)

- Add legumes (dried beans, chickpeas and lentils) to foods you already eat. Add a handful of legumes to a green salad or pasta dish
- Have nuts and seeds as a snack instead of granola bars

2. Fish

Omega-3 fats are a type of healthy fat found in fish and some plant foods. Omega-3 fats can lower triglycerides and reduce inflammation (damage to the tissues of your body that can lead to disease such as arthritis, heart disease, and cancer).

- Aim to eat fatty fish 3 times each week (fresh or canned). Examples include: trout, halibut, bass, salmon, tuna, mackerel and sardines
- Eat plant sources of omega-3 fats such as walnuts, ground flaxseed & flaxseed oil, hemp seeds and hemp hearts, chia seed, and canola oil. Add hemp hearts, chia seed or ground flax seed to other foods

Foods that raise my triglyceride level:

1. Added or Free Sugars

Examples include:

- All types of sugar (raw sugar, white or brown sugars)
- Honey
- Sweets, pastries, desserts, granola bars
- Juices
- Jams, jellies, syrup
- Chocolate
- Candy
- Regular pop
- Sugar sweetened drinks

2. High Glycemic Index Foods (Read Chapter 3 of this section on 'Fibre and Glycemic Index' to learn more)

High glycemic index foods are often highly processed. Examples include:

- Sugar
- Crackers
- White flour (such as white bread)
- Short grain sticky white rice or instant rice
- Instant mashed potatoes
- Instant noodles
- Rice cakes

3. Too Much Alcohol

Some of the medicines you take may react poorly with alcohol. Talk to your doctor or pharmacist about how your medicines react with alcohol before you drink alcohol.

If you drink alcohol, limit how much you drink to avoid high triglyceride levels.

- Men: limit alcohol to 2 drinks each day at most
- Women: limit alcohol to 1 drink each day at most

Your triglyceride and blood sugar levels may increase if you mix alcohol with juice or regular pop since these drinks contain sugar

4. Trans Fats

Trans fats are commercially prepared (factory-made) fats. They are made from partially hydrogenated vegetable oil or shortening. Foods made with trans fats are highly processed.

Trans fats raise LDL (bad) cholesterol and lower HDL (good) cholesterol in your body. They also increase inflammation (damage to the tissues of your body that can lead to disease such as arthritis, heart disease, and cancer). Trans fats are not healthy for you. They can increase your chances of having heart disease, a heart attack or stroke.

Examples of foods often made with partially hydrogenated oil or trans fats include:

- Crackers and Cookies
- Cakes, pie crusts, pastries, donuts, croissants
- Vegetable shortening, hard margarine
- French fries, potato & corn chips
- Deep-fried restaurant or fast foods

Summary

- Eat foods rich in omega-3 fats (like fish, flax seed) to raise your HDL (good) cholesterol and lower your triglycerides
- Limit foods high in trans and saturated fats that raise your LDL (bad) cholesterol and triglyceride levels
- Following a Mediterranean diet pattern to help you manage your diabetes and lower your:
 - Blood sugar
 - LDL (bad) cholesterol
 - Triglycerides
 - Blood pressure