

TRAFFIC LIGHT

DIET

Untuk

Diabetes Mellitus, Hipertensi, Kolesterol



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Traffic Light Diet for Diabetes Mellitus, Hypertension, and Cholesterol Management

What is Diabetes?

According to Primary Health Research (Riset Kesehatan Dasar) in 2013, it was known that more than 12 million citizens are suffering from diabetes and more than 64 million citizens have disturbances in their fasting blood sugar levels. It is shown that diabetes mellitus diabetes mellitus is one of the threatening diseases for Indonesian and requires modifying lifestyle, so it will not get worse.

What are the Causes of Diabetes?

Several risk factors influence diabetes are:

- Overweight
- Central obesity (abdominal obesity)
- Low physical activity
- High blood pressure (hypertension)
- High levels of total cholesterol, LDL, triglycerides
- Low levels of HDL
- Smoking habits
- Stress
- Imbalance diet (consumption of sweet food/beverages more than 1x/day, consumption of salty food/beverages more than 1x/day, consumption of fatty food/beverages more than 1x/day)

Those 9 risk factors can be modified and so by adjusting to a better lifestyle, diabetes can be prevented.

How to Detect Diabetes

The easiest method for diagnosing diabetes is by blood glucose checking. When the blood sugar level exceeds the limit, it can be called diabetes.

Several criteria of blood glucose level can be applied for diagnosing diabetes:

1. Random Blood Glucose (RBG) level >200 mg/dl along with arising certain symptoms of diabetes (excessive urine production, excessive thirst, extreme hunger, weight loss).
2. Fasting Blood Glucose (FBG) level >126 mg/dl along with arising certain symptoms of diabetes (excessive urine production, excessive thirst, extreme hunger, weight loss),
3. Random Blood Glucose (RBG) level >200 mg/dl, even the FBG >126 mg/dl, with/without arising of all/ some certain symptoms of diabetes.

What are the Symptoms?

Some common symptoms found in diabetes patients are:

- Polydipsia (excessive thirst)
- Polyuria (excessive urine production)
- Polyphagia (extreme hunger)
- Weight loss

Can Diabetes Mellitus Cause Complications?

Correct

Diabetes mellitus can cause various serious health complications, such as:

- Neuropathy (nerve damage) in legs: Increases the risk of ulcer, infection, and even gangrene which may be obligatory to amputate the legs
- Diabetic retinopathy: Damage of blood vessels in the retina and can cause blindness
- Risk of cardiovascular disease and stroke
- Proteinuria: Elevated protein level in urine
- Kidney failure

"Those complications do not affect all diabetes patients who can manage their blood glucose level in the normal range by modifying lifestyle"

Managing Diet for the Elderly with Diabetes

Diet management in diabetes patients aims to control blood glucose levels to not in high numbers and to prevent any complications. Generally, diabetes patients are not allowed to consume pure sugar if their blood glucose level remains high. However, if it is more stable (close to normal), pure sugar can be consumed to 5% of total energy (around 2 tablespoons of granulated sugar for 2000 calories of energy requirement). Moreover, it is recommended to eat enough fiber for around 25g/day to help blood glucose control. 25 g of fiber can be provided with the consumption of 2-3 portions of fruits and 3-5 portions of vegetables per day.

What is Glycemic Index?

Diabetes patients need to pay attention to the glycemic index in foods. The glycemic index is the level of food by its impact on blood glucose. According to the glycemic index level, foods/beverages are categorized into 3 groups:

- Low glycemic index
- Moderate glycemic index
- High glycemic index

Diabetes patients are suggested to consume low-moderate glycemic index foods and avoid high glycemic index foods as for controlling blood glucose levels to be more stable. Here are the glycemic index guides:

Traffic Light Diet: Glycemic Index (easy option for your diet)

Traffic Light Diet: Glycemic Index

(Easy option for your diet: Staple foods)

- Green (low, <55, every day): Rich amylose rice (rice cooker), boiled cassava, boiled sweet potato (30 minutes), fried sweet potato, tortilla, spaghetti (boiled for 5-15 minutes)
- Yellow (moderate, 56-69): Rich amylose rice (rice cooker), sweet corn, boiled sweet potato/orange sweet potato (8 minutes), fresh sweet potato, red rice, vermicelli, boiled pumpkin, instant oatmeal porridge, spaghetti (boiled for 20 minutes), boiled sweet corn, baked potato
- Red (high, >70, limit): low and high amylose rice (rice cooker), sticky rice, french fries, boiled potato, boiled white sweet potato (8 minutes), baked sweet potato, boiled breadfruit, fried breadfruit, rice porridge, corn flakes, instant mashed potato, wheat bread, steamed cassava, steamed breadfruit

Traffic Light Diet: Glycemic Index

(Easy option for your diet: Vegetables and fruit)

- Green (low, <55, every day): Carrots, apples, oranges, banana, mango, fresh dates, grapes, kiwis, peach, pear, plum, sugar-free tomato juice
- Yellow (moderate, 56-69): Pineapple, carica papaya, papaya, canned peach soaked in sugar syrup, raisins
- Red (high, >70, limit): Pumpkin, watermelon, dried dates, overripe honeydew/cantaloupe, overripe mango, canned lychee, overripe papaya, overripe kiwis

Traffic Light Diet: Glycemic Index

(Easy option for your diet: Beans, nuts, and milk)

- Green (low, <55, every day): Soybeans, fresh red beans, canned red beans, cashews, peanuts, soy milk, full cream milk, skim milk, low-fat ice cream, milk pudding, yogurt, milo, Yakult
- Yellow (moderate, 56-69): Ice cream, condensed milk
- Red (high, >70, limit): Dried red beans (soaked in water for 24 hours, steamed for 1 hour)

Traffic Light Diet: Glycemic Index

(Easy option for your diet: Snacks and sugar)

- Green (low, <55, every day): Fructose, lactose, chocolate, corn chips, fruit soy bar
- Yellow (moderate, 56-69): Popcorn, soft drinks, biscuits, chocolate wafers, sucrose, honey
- Red (high, >70, limit): Rice crackers/crisps, pastry, muffins, donuts, bagels/baguettes/croissants, pancake/waffles, glucose, jelly candy, maltose

What is Hypertension?

Hypertension is a health condition when the systolic blood pressure elevates higher than 140 mmHg and the diastolic blood pressure is higher than 90 mmHg, which occurs two times of assessment within the 5 minutes interval on adequate resting/calm condition.

What are the Risk Factors of Hypertension:

Primarily, the cause of disease in 90% of hypertension patients remains unknown (idiopathic) and only in 5-10% of patients can be recognized. The recognized cause is either kidney disease or hormonal disorder.

Several lifestyle-related risk factors can induce hypertension are:

1. Age
2. Family history of hypertension
3. Smoking habits
4. Salt consumption
5. Saturated fats consumption
6. Drinking habits
7. Obesity
8. Low physical activity
9. Stress
10. Use of estrogen

What are the Symptoms of Hypertension?

Hypertension is a silent killer. The signs and symptoms may vary for each individual as well as may look similar to other disease signs and symptoms.

The symptoms are including:

Headache/heaviness in the nape

Dizziness (vertigo)

Heart palpitations

Blurred sight

ringing in ears (tinnitus)

Nose bleeding

Is Hypertension Dangerous?

Elevating blood pressure for a long time (persistent) can cause damage to the kidney, heart, and brain.

Hence, the condition of high blood pressure is quite dangerous for health as it arises various complications, such as:

1. Heart failure
2. Heart attack
3. Stroke
4. Kidney failure

How to Maintain a Healthy Diet for the Elderly with Hypertension?

Keeping an eye on diet for hypertension patients is quite easy, by tracking the sodium/salt intake.

Sodium consumption is limited to 1500 mg per day. 1500 mg sodium equals the sodium amounts in 2 teaspoons of table salt.

Therefore, the easiest method to limit table salt consumption is by controlling blood pressure. The guide for sodium consumption can be seen in the "Sodium Traffic Light Diet".

Besides, tracking sodium in processed foods is also crucial. If it contains 5% of sodium, it is allowed to consume. However, when the sodium content is more than 20% (>20%), it is better to avoid any consumption.

Instant Noodles: contains more than 20% sodium (maximum limit of sodium)

Traffic Light Diet: Sodium

- Carbohydrates Sources
- Protein Sources
- Vegetables and Fruits
- Snacks
- Condiments

Traffic Light Diet: Sodium, categorized by carbohydrates sources

- Green: rice, rice porridge, flour, oatmeal, pasta
- Yellow: biscuits, bread, cereal
- Red: miso, instant noodle, instant cream soup, instant foods

Traffic Light Diet: Sodium, categorized by protein sources

Allowed

- Lean chicken meat
- Fresh fish
- Canned fish that has already been rinsed (tuna, sardine)
- Tofu, tempeh
- Eggs
- Low sodium cheese
- Mung beans
- Soybeans

Allowed Once in a While

- Turkey meat
- Clam
- Oyster
- Fresh shrimp

Not Allowed

- Salted fish

- Bacon
- Ham
- Nuggets
- Sausage
- Burger
- Cheese
- Canned meat
- Canned shrimp
- Corned beef

Traffic Light Diet: Sodium, categorized by snacks

Allowed

- Unsalted popcorn
- Processed foods with more than 5% sodium
- Tea
- Yogurt

Allowed Once in Awhile

- Pancake
- Cookies
- Muffin
- Milk
- Processed foods with 5-20% sodium

Not Allowed

- Pretzels
- Salted chips
- Salted nuts
- Popcorn

- Processed foods with more than 20% sodium

Traffic Light Diet: Sodium, categorized by condiments

- Green: Spices, seasoning such as coriander, parsley, turmeric, garlic powder, onion powder, chili powder, mint, turmeric, basil, oregano, vinegar, cinnamon, and black pepper
- Yellow: Low sodium salt (maximum of 2 teaspoons in food), BBQ sauce, chili sauce, mayonnaise, salad dressing
- Red: Soy sauce, Mono Sodium Glutamate (MSG), fish sauce, stocks, ketchup, teriyaki sauce

Hypercholesterolemia

A term to describe when the total blood cholesterol reaches more than >200 mg/dl.

This condition needs to be vigilant as it can change the structure of the bloodstream and cause the development of plaque in the bloodstream.

Occurring plaque over a long time can constrict the blood vessel wall (can be called atherosclerosis).

If constriction happens in the coronary blood vessel, it causes cardiovascular disease. On the other hand, if it occurs in the brain, it induces stroke.

Atherosclerosis in the brain and heart

A term to use when the blood vessel is clogged. In the case of hypercholesterolemia, the blockage is generated from the plaque of "bad" cholesterol.

In the heart:

Arterial wall

Plaque blocks the bloodstream

Death of body tissue as the result of a clogged bloodstream

Plaque forms inside the artery

In the brain:

Clogged blood in artery cause stroke

The artery is blocked by cholesterol

Normal artery

What aspect can influence the cholesterol level?

1. Diet/Consumed Foods
2. The body is high in fats, specifically in the abdomen.
3. Low level of physical activity

Diet/Consumed Foods

Left

Fast foods, chocolates, milk: Overconsumption of animal-source fats (saturated fats).

Right

Vegetables, fruits, olive oils: Not enough food to help lower the blood cholesterol level.

The body is high in fats, specifically in the abdomen.

The percentage of high body fat:

Men: More than 20%

Women: More than 30%

Particularly the fat in the abdomen

Low level of physical activity

Exercise can burn fats, so it helps reduce cholesterol.

Traffic Light Diet (Cholesterol): Allowed, Allowed Once in a While, Not Allowed

These foods are in the green category (allowed):

- Lean meat (chicken, goat, cow)
- Egg whites
- Catfish
- Three-spot gourami
- Freshwater fish
- Nile tilapia
- Tilapia
- Pomfret fish
- Common carp
- Yellowtail fish
- Sea cucumber
- Fat-free milk
- Fat-free yogurt

These foods are in the yellow category (allowed once in a while):

- Cheese, coconut milk, low-fat yogurt, low-fat milk
- Clam/snails, shrimps, crabs
- Mackarel, eel, milk fish
- Beef ribs, pigeon, beef/goat fat, fatty beef

These foods are in the red category (not allowed):

- Quail eggs, egg yolks, butter
- Chicken liver, gizzard, kidney, skin
- White clams, Asian freshwater clams, squids, prawns
- Cow/goat innards, beef brain

Various Foods to Lower Cholesterol Levels

1. Vegetables
2. Fruits
3. Whole Wheat
4. Nuts
5. Soybeans Products
6. Sterol/Stanol Fortified Foods and Beverages

Vegetables

- Spinach
- Green Beans
- Garlic
- Oca/lady's fingers
- Eggplant

Nuts

Walnuts, almonds, and other kind of nuts can reduce the cholesterol level. Research has shown that eating a certain daily amount of walnut can lower the cholesterol level by 27%.

According to U.S. FDA, consuming around a handful (42,5 grams) of almonds, hazelnuts, peanuts, pecans, pine nuts, pistachio, and walnut can reduce the risk of cardiovascular disease.

Omega-3 fats and anti-oxidants from nuts work to rehabilitate the arterial damage which is induced by saturated fat.

Soybeans Products

Soybeans consist of proteins and isoflavones. Both properties support the lowering of LDL and triglyceride levels in the blood.

A method to cure high cholesterol by consuming soybeans is also lower the risk of cardiovascular disease.

As soybeans consist of fiber and omega-3 which are beneficial for a healthy heart. Although, the omega-3 in soybeans is not as much as in salmon and tuna.

Fruits

All fruits and vegetables contain fiber. Hence, they also help to lower the cholesterol level.

Fiber can bind to cholesterol, so the cholesterol is not circulating in the blood. In addition, vitamin C is utilized for homeostasis or to balance the cholesterol level. One thing to remind is vitamin C-rich vegetables are just enough to boil halfway through.

Whole Wheat

Whole wheat is the most nutritious cereal and is well known for its attribute to lower cholesterol and triglyceride levels along with regulating the blood glucose which is much related to diabetes.

Studies show that the negative impact of high cholesterol levels can be reduced by beta-glucan, a type of fiber present in wheat.

Approximately 4-10% of cholesterol level is proven to decrease with the help of this fiber from wheat. The most common processed food we can find is bread.

Sterol/Stanol Fortified Foods and Beverages

Most products are fortified with sterol/stanol (a substance from the plant that helps the absorption of cholesterol).

Several brands of margarine, orange juice, or yogurt are fortified with sterol that helps to reduce the LDL levels to 10%. The amount of plant sterol that is needed to achieve the target is at least 2 grams equal to 2 portions (237 ml) of sterol-fortified orange juices per day.