



Narodowe Centrum
Edukacji Żywnościowej



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HYPERTENSION

Hypertension is diagnosed when the average values (calculated from at least two measurements taken during at least two different visits) are **equal to or higher than 140 mmHg for systolic blood pressure and/or 90 mmHg for diastolic blood pressure readings**. In patients with blood pressure equal to or higher than 180 mmHg for systolic blood pressure and/or 110 mmHg for diastolic blood pressure, hypertension is diagnosed already at the first visit if the high values do not result from other factors such as stress, anxiety, pain or alcohol intake.

Diet

Lifestyle modifications, including dietary changes, are one of the essential components of hypertension therapy. This approach is not a substitute for pharmacological treatment, but may delay the progression of the disease and increase the efficacy of medications. Nutritional models based on **DASH** (Dietary Approaches to Stop Hypertension) and the **Mediterranean diet** are recommended in the dietary management of hypertension. They involve limiting the intake of salt, animal fats and simple sugars, while increasing the consumption of whole grain products, fruit and vegetables. The diet should also be **customised** to meet the individual needs and requirements of each patient. Therefore, consider seeking advice of a dietitian who will help you change your eating habits.



Key nutritional guidelines

Eat less than 5 g of salt (\leq 2 g of sodium) per day:

- do not add salt to the food on your plate – use fresh or dried herbs (e.g. basil, tarragon, ginger, thyme);
- avoid highly processed foods, e.g. fast food and instant foods, salty snacks such as chips, salted nuts or salted bread sticks;
- reduce consumption of canned meat and fish, smoked fish and cured meats;
- reduce consumption of cold meats and cheese, including processed, feta and soft cheese;
- consume canned foods occasionally. Strain and wash the contents under clean running water before consumption;
- 1 → pickled vegetables contain large amounts of salt – eat them occasionally, choose fresh and frozen vegetables more often;
- cook cereal products (e.g. groats, rice, pasta) and potatoes in unsalted water;
- mind the sodium content in the mineral water you buy;
- read product labels carefully and choose products with no salt/sodium content or low in salt/sodium;
- avoid products containing added sodium in the form of salt, sodium benzoate, monosodium glutamate, sodium ascorbate, disodium phosphate, calcium-disodium salt and sodium saccharin.

Reducing daily table salt intake by 4.4 g can lower blood pressure by 4.2/2.1 mmHg in healthy people and by 5.4/2.8 mmHg in people with hypertension.

2 Eat sufficient amounts of **fruit and vegetables** which are a source of dietary fibre, vitamins, antioxidant and hypotensive ingredients (potassium, flavonoids, nitrates). Eat vegetables as often as possible (**at least 400 g/day**), preferably with most meals during the day. Unlike vegetables, fruit should be consumed in smaller amounts (**200-300 g/day**) as they contain more simple sugars. Berries, such as raspberries, lingonberries, blueberries, black currants, strawberries and chokeberries are the preferred fruit type.

3 Increase your intake of **potassium** – an ingredient that has been shown to lower blood pressure. Potassium is mainly found in vegetables and fruits, including bananas, avocados, tomatoes and potatoes, but also in products such as cocoa, almonds, dried apricots, soybeans and lentils.

4 According to the DASH diet model, limit the consumption of products containing **saturated fatty acids**. Choose lean meats and skimmed/semi-skimmed dairy products containing up to 2% fat. Replace meat with fish twice a week and with legumes at least once a week. Limit red meat to a maximum of 350-500 g per week, and cut down on meat products (cold cuts, sausages, pâtés, offal products, etc.) to the bare minimum.

5 As per the DASH model, increase the consumption of products containing **unsaturated fatty acids** (omega-3, omega-6 and omega-9 fatty acids). To get adequate amounts of unsaturated fat in your diet, consume sea fish (salmon, herring, mackerel) at least twice a week. Use vegetable fats – olive oil, canola oil, linseed oil. Add them cold to salads or other dishes. Use refined vegetable oils (e.g. universal canola oil) for thermal processing of food. Nuts, seeds and avocados are also a source of unsaturated fatty acids. Eating 30 g of walnuts per day has been found to improve the elasticity of blood vessels so they are worth including in your diet.



Key nutritional guidelines

- 6** Drink at least **1.5-2 litres of fluids a day**. Replace sweetened drinks with sugar-free drinks, preferably water, as well as weak tea and herbal infusions. Avoid liquorice-based infusions which may cause water and sodium retention in the body and increase potassium loss. Make sure to keep your body well hydrated by drinking small amounts of liquid more often.
- 7** If you struggle with excess weight or obesity, try to lose weight gradually – this may bring health benefits, including improved blood pressure. **Decreasing body weight by 5 kg is associated with a 4.4/3.6 mmHg reduction in blood pressure.**
- 8** **If you are considering an alternative diet, consult it first with a dietitian and/or your doctor.** According to the American College of Cardiology, low-carbohydrate, paleo, Atkins, and ketogenic diets have been associated with increased risk of death and atrial fibrillation. Moreover, high-protein diets may impair kidney function or damage your kidneys due to high content of sodium and phosphates. This increases the risk of water retention and results in higher blood pressure. Since long-term studies assessing the safety and efficacy of full-fat / high-protein diets and intermittent fasting have not been conducted, these weight loss alternatives should be approached with caution, especially in the presence of chronic diseases, including hypertension.

Physical activity

- 1** Physical activity has many health benefits for patients with hypertension:
- helps control body weight, lowers blood pressure and blood cholesterol levels;
 - prevents complications such as atherosclerosis, angina pectoris, heart attack and stroke;
 - improves health-related quality of life;
 - relieves stress;
 - reduces disease progression;
 - reduces mortality from cardiovascular diseases.
- 2** Get regular physical activity. If you have not been exercising regularly, increase your level of physical activity gradually. Customise your exercise plan with respect to type, duration and frequency to suit your individual capabilities. For this purpose, consider consulting a physical activity specialist or a physiotherapist. According to the guidelines, you should do at least 30 minutes of moderate intensity physical activity per day (e.g. walking, running, cycling or swimming).
- 3** Engage in spontaneous physical activity. Simple, everyday activities, such as active housework, also have health benefits. The effects of exercise on the body may vary depending on the person and the type of activity performed. Remember – any physical activity is better than none.



Other lifestyle changes

- 1 **Minimize alcohol use or completely eliminate it from your diet.** Alcoholic drinks have a strong hypertensive effect. Also, alcohol reduces the efficacy of blood pressure medications and increases the risk of stroke and cardiac arrhythmias, including atrial fibrillation.
- 2 **Quit smoking.** This can help lower your blood pressure and reduce the risk of heart attack and stroke.
- 3 **Look for effective strategies to manage your everyday stress.** Try relaxation techniques based on mindfulness and meditation, breathing exercises or yoga. If stressful situations increase your fear and anxiety, consider seeing a mental health professional.
- 4 **Get enough good quality sleep,** preferably 7-9 hours a day. Try to go to sleep and wake up at about the same time every day (also on non-working days). Avoid using electronic devices (smartphone, tablet, computer, TV) one hour before bedtime. This will make it easier for you to fall asleep.










Literature:

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2. Grzymisławski M. (red.): *Dietetyka kliniczna*. Wydawnictwo Lekarskie PZWL, Warszawa, 2019.
3. Czaplina M., Jankowski P. (red.): *Żywnienie w chorobach serca*. Wydawnictwo Lekarskie PZWL, Warszawa, 2022.
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Recommended and not recommended products in hypertension

Remember that the overall profile of your diet, the composition of individual meals and the quality of individual products are all important aspects. The table below contains examples of products that should form the core of your diet and those that you should limit to a bare minimum. These guidelines should help you change your eating habits for the better.

| Product group | Recommended | Not recommended |
|--|---|---|
| Vegetables  | <ul style="list-style-type: none"> all fresh and frozen vegetables | <ul style="list-style-type: none"> canned and pickled vegetables in limited quantities (cabbage, cucumbers) vegetables served with fatty sauces and roux |
| Fruit  | <ul style="list-style-type: none"> all fresh and frozen fruit dried fruit in moderate amounts | <ul style="list-style-type: none"> candied fruit fruit in syrups |
| Grain products  | <ul style="list-style-type: none"> wholegrain flour wholegrain bread, graham bread natural cereal flakes, e.g. oats, barley flakes, spelt flakes, rye flakes wheat, rye and oat bran groats: buckwheat, barley, bulgur, quinoa rice e.g. brown, wild, red whole grain pasta e.g. wheat, rye, buckwheat, spelt | <ul style="list-style-type: none"> refined flour confectionery breads, light bread (toast, kaiser rolls, bread, butter rolls) sweetened breakfast cereals (cornflakes, chocolate flakes, muesli, crunchy flakes) fine groats, e.g. couscous, semolina, cornmeal white rice light pastas and noodles e.g. from wheat or rice |
| Potatoes  | <ul style="list-style-type: none"> boiled baked | <ul style="list-style-type: none"> potatoes with fatty additives like cream or butter fried potatoes French fries, chips fried potato pancakes |
| Milk and dairy products  | <ul style="list-style-type: none"> reduced-fat milk (up to 2% fat) dairy products: natural (sugar-free), fermented with up to 2% fat (e.g. yogurt, kefir, buttermilk, skyr, cottage cheese, soured milk) skimmed or semi skimmed cottage cheese light mozzarella cheese, natural cottage cheese cheese spreads (in limited quantities) | <ul style="list-style-type: none"> whole milk condensed milk sour cream, coffee cream sweetened fruit yogurts, dairy desserts cheese: full-fat cottage cheese, cheese, processed cheese, feta cheese, soft cheese e.g. brie, camembert, quefort, full-fat mozzarella cheese, mascarpone |
| Eggs  | <ul style="list-style-type: none"> soft-boiled eggs, hard-boiled eggs, poached eggs, scrambled eggs and omelettes fried without fat or with a small amount of fat | <ul style="list-style-type: none"> eggs fried in a large amount of fat e.g. butter, bacon, lard or salo (slanina) eggs served with mayonnaise |
| Meat and meat products  | <ul style="list-style-type: none"> lean skinless meat e.g. veal, chicken, turkey, rabbit moderate amounts of lean beef and pork e.g. pork loin, tenderloin lean cold cuts, preferably homemade e.g. tenderloin, cooked ham, poultry cold cuts, pork loin roast, roast turkey/chicken breast | <ul style="list-style-type: none"> fatty meats such as beef, pork, mutton, goose, duck fatty lunch meats e.g. gammon, salami, bacon, spam canned meat, offal cold cuts, pâtés, hot dogs, kabanos sausages, sausage |
| Fish, fish products and seafoods  | <ul style="list-style-type: none"> lean or fatty sea fish and freshwater fish e.g. cod, sole, hake, blue grenadier, zander, bream, pike, perch, mackerel, salmon, halibut and carp | <ul style="list-style-type: none"> herring and other salted fish, smoked fish, canned fish, caviar |
| Legumes and legume products  | <ul style="list-style-type: none"> all, e.g. soybean, chickpeas, peas, lentils, beans, broad beans legume spreads soy flour, sugar-free soy drinks, soy products: tofu, tempeh legume pastas (e.g. from beans or peas) | <ul style="list-style-type: none"> low-quality, ready-made legume products e.g. soy sausages, breaded soy cutlets, soy pates, vege burgers |

Recommended and not recommended products in hypertension

| Product group | Recommended | Not recommended |
|--|---|--|
| Fats  | <ul style="list-style-type: none"> olive oil, canola oil, linseed oil butter and vegetable oils mix soft margarines | <ul style="list-style-type: none"> butter and clarified butter in limited quantities lard, bacon, tallow hard margarine (blocks) tropical oils: palm, coconut mayonnaise |
| Nuts and seeds  | <ul style="list-style-type: none"> nuts (e.g. walnuts, hazelnuts, almonds) seeds (e.g. pumpkin, sunflower) | <ul style="list-style-type: none"> nuts and seeds: salted, in chocolate, in caramel, honey, sprinkled, breaded, in chips |
| Sweets, desserts and salty snacks  | <ul style="list-style-type: none"> dark chocolate (70% cocoa minimum) unsweetened fruit purees, mousses and sorbets natural yogurt with fruit, fruit yogurt (without added sugar) natural sweeteners e.g. xylitol, stevia, erythritol low-sugar jam kissels and jellies without added sugar homemade pies and cakes without added sugar | <ul style="list-style-type: none"> sugar e.g. white, cane, brown, coconut honey, maple syrup, date syrup, agave syrup sweets high in sugar and fat e.g. cakes, cookies, chocolate bars, milk and white chocolate, halva, donuts, Angel wings (faworki), candies salty snacks e.g. chips, salty sticks, crispy flakes, crackers, nachos, crisps |
| Drinks  | <ul style="list-style-type: none"> water sugar-free beverages e.g. coffee, cereal coffee, tea, herbal and fruit infusions, kompots, cocoa vegetable and fruit juices in limited quantities homemade, unsweetened lemonade | <ul style="list-style-type: none"> alcoholic drinks sweet fizzy and non-carbonated drinks energy drinks nectars, high-sugar fruit syrups drinking chocolate liquorice-based infusions |
| Spices and sauces  | <ul style="list-style-type: none"> fresh and dried single-ingredient herbs e.g. basil, oregano, turmeric, cinnamon, ginger salt-free spice mixtures, herbs de Provence homemade salad dressings with lemon, herbs and a small amount of oil or yogurt sodium and potassium salt in limited quantities | <ul style="list-style-type: none"> salt (e.g. table salt, Himalayan salt, sea salt) spice mixtures containing large amounts of salt bouillon cubes liquid spices to enhance flavour ready-made sauces |
| Soups  | <ul style="list-style-type: none"> soups based on vegetable or lean meat broths soups whitened with yogurt or milk up to 2% fat | <ul style="list-style-type: none"> soups based on fatty meat broths soups whitened with sour cream and thickened with roux instant soups |
| Prepared meals  | <ul style="list-style-type: none"> frozen stir fry vegetables mix, frozen fruit mix cereal and legume blends instant oatmeal cream soups ready-made vegetable stir-fry foods vegetable pastes and purees <p><i>*read labels, compare ingredients and pay attention to added sugar, salt and fat content</i></p> | <ul style="list-style-type: none"> fast food e.g. toasted open-faced sandwich (zapiekanka), hot dogs, hamburgers, kebab frozen pizzas, toasted open-faced sandwiches ready-made food in breadcrumbs, fatty sauces, made of refined flour instant meals e.g. sauces, soups |
| Technological processing of food  | <ul style="list-style-type: none"> boiling, steaming (cereal products, vegetables cooked to al dente) grilling (electric grill, grill pans) baking in foil, parchment paper, roasting bags, heat-resistant dish no-fat frying - stewing stewing without pre-frying <p><i>* small amounts of the recommended vegetable fat e.g. olive oil or canola oil are acceptable if used occasionally</i></p> | <ul style="list-style-type: none"> deep frying stewing with prior deep-frying baking in large amounts of fat breading |

Quality menu ideas for persons with hypertension

BREAKFAST:

Spinach omelette

- spinach
- canola oil
- garlic
- egg
- milk
- basil and oregano
- mozzarella
- Cherry tomatoes
- chives

LUNCH:

Yogurt with fruit and nuts

- natural yogurt
- raspberries
- walnuts

DINNER:

Tomato Cream Soup Turkey in herbs with groats and salad

- ripe tomatoes
- onion
- garlic
- canola oil
- basil
- parsley
- turkey leg
- Herbs de Provence, thyme, oregano, garlic
- barley groats
- carrot
- apple
- natural yogurt



AFTERNOON SNACK:

Fruit mousse

- bananas
- kiwi
- strawberries
- apple
- oat flakes

SUPPER:

Egg salad

- wholemeal rye bread
- egg
- corn salad
- radish
- cucumber
- chives
- mustard
- lemon juice
- honey
- olive oil

