





## Narodowe Centrum Edukacji Żywieniowej







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.











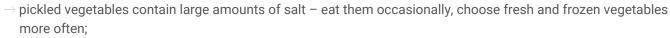




## Key nutritional guidelines

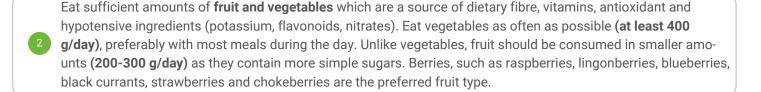
#### Eat less than 5 g of salt ( $\leq$ 2 g of sodium) per day:

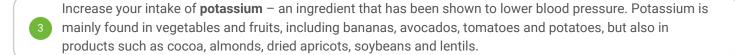
- $\rightarrow$  do not add salt to the food on your plate use fresh or dried herbs (e.g. basil, tarragon, ginger, thyme);
- → avoid highly processed foods, e.g. fast food and instant foods, salty snacks such as chips, salted nuts or salted bread sticks;
- → reduce consumption of canned meat and fish, smoked fish and cured meats;
- $\rightarrow$  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;



- → cook cereal products (e.g. groats, rice, pasta) and potatoes in unsalted water;
- → mind the sodium content in the mineral water you buy;
- $\rightarrow$  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.





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.

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.



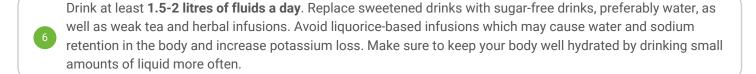


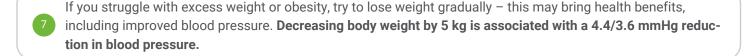






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If you are considering an alternative diet, consult it first with a dietitian and/or your doctor. According to the American College of Cardiology, low-carbohydrate, paleo, Atkins, and ketogenic diets have been associated with increased risk of death 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

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;
- ullet improves health-related quality of life;
  - → relieves stress;
  - ightarrow reduces disease progression;
  - → reduces mortality from cardiovascular diseases.

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).

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.

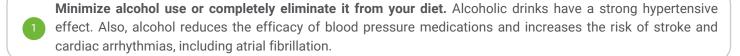








## Other lifestyle changes



- Quit smoking. This can help lower your blood pressure and reduce the risk of heart attack and stroke.
- 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.
- 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.

- Tykarski A., Filipiak K. J., Januszewicz A., Litwin M., Narkiewicz K., Prejbisz A., Ostalska-Nowicka D., Widecka K., Kostka-Jeziorny K. (red.): Zasady postępowania w nadciśnieniu tętniczym
- 2019 rok. Nadciśnienie Tętnicze w Praktyce 2019; 5(1): 1-86.
   Grzymisławski M. (red.): Dietetyka kliniczna. Wydawnictwo Lekarskie PZWL, Warszawa, 2019
- Czapla M., Jankowski P. (red.): Żywienie w chorobach serca. Wydawnictwo Lekarskie PZWL, Warszawa, 2022. Wytyczne ESC/ESH dotyczące postępowania w nadciśnieniu tętniczym (2018). Kardiologia Polska 2019; 77(2): 71–159. DOI: 10.5603/KP.2019.0018.





# 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	all fresh and frozen vegetables	<ul> <li>canned and pickled vegetables in limited quantities (cabbage, cucumbers)</li> <li>vegetables served with fatty sauces and roux</li> </ul>
Fruit	<ul> <li>all fresh and frozen fruit</li> <li>dried fruit in moderate amounts</li> </ul>	candied fruit     fruit in syrups
Grain products	<ul> <li>wholegrain flour</li> <li>wholegrain bread, graham bread</li> <li>natural cereal flakes, e.g. oats, barley flakes, spelt flakes, rye flakes</li> <li>wheat, rye and oat bran</li> <li>groats: buckwheat, barley, bulgur, quinoa</li> <li>rice e.g. brown, wild, red</li> <li>whole grain pasta e.g. wheat, rye, buckwheat, spelt</li> </ul>	<ul> <li>refined flour</li> <li>confectionery breads, light bread (toast, kaiser rolls, bread, butter rolls)</li> <li>sweetened breakfast cereals (cornflakes, chocolate flakes, muesli, crunchy flakes)</li> <li>fine groats, e.g. couscous, semolina, cornmeal</li> <li>white rice</li> <li>light pastas and noodles e.g. from wheat or rice</li> </ul>
Potatoes	<ul><li>boiled</li><li>baked</li></ul>	<ul> <li>potatoes with fatty additives like cream or butter</li> <li>fried potatoes</li> <li>French fries, chips</li> <li>fried potato pancakes</li> </ul>
Milk and dairy products	<ul> <li>reduced-fat milk (up to 2% fat)</li> <li>dairy products: natural (sugar-free), fermented with up to 2% fat (e.g. yogurt, kefir, buttermilk, skyr, cottage cheese, soured milk</li> <li>skimmed or semi skimmed cottage cheese</li> <li>light mozzarella cheese, natural cottage cheese</li> <li>cheese spreads (in limited quantities)</li> </ul>	<ul> <li>whole milk</li> <li>condensed milk</li> <li>sour cream, coffee cream</li> <li>sweetened fruit yogurts, dairy desserts</li> <li>cheese: full-fat cottage cheese, cheese, processed cheese, feta cheese, soft cheese e.g. brie, camembert, oquefort, full-fat mozzarella cheese, mascarpone</li> </ul>
Eggs	<ul> <li>soft-boiled eggs, hard-boiled eggs, poached eggs, scrambled eggs and omelettes fried without fat or with a small amount of fat</li> </ul>	<ul> <li>eggs fried in a large amount of fat e.g. butter, bacon, lard or salo (slanina)</li> <li>eggs served with mayonnaise</li> </ul>
Meat and meat products	<ul> <li>lean skinless meat e.g. veal, chicken, turkey, rabbit</li> <li>moderate amounts of lean beef and pork e.g. pork loin, tenderloin</li> <li>lean cold cuts, preferably homemade e.g. tenderloin, cooked ham, poultry cold cuts, pork loin roast, roast turkey/chicken breast</li> </ul>	<ul> <li>fatty meats such as beef, pork, mutton, goose, duck</li> <li>fatty lunch meats e.g. gammon, salami, bacon, spam</li> <li>canned meat, offal cold cuts, pâtés, hot dogs, kabanos sausages, sausage</li> </ul>
Fish, fish products and seafoods	<ul> <li>lean or fatty sea fish and freshwater fish e.g. cod, sole, hake, blue grenadier, zander, bream, pike, perch, mackerel, salmon, halibut and carp</li> </ul>	herring and other salted fish, smoked fish, canned fish, caviar
Legumes and legume products	<ul> <li>all, e.g. soybean, chickpeas, peas, lentils, beans, broad beans</li> <li>legume spreads</li> <li>soy flour, sugar-free soy drinks, soy products: tofu,</li> </ul>	low-quality, ready-made legume products e.g. soy sausages, breaded soy cutlets, soy pates, vege burgers











• legume pastas (e.g. from beans or peas)







Product group	Recommended	Not recommended
Fats	<ul> <li>olive oil, canola oil, linseed oil</li> <li>butter and vegetable oils mix</li> <li>soft margarines</li> </ul>	<ul> <li>butter and clarified butter in limited quantities</li> <li>lard, bacon, tallow</li> <li>hard margarine (blocks)</li> <li>tropical oils: palm, coconut</li> <li>mayonnaise</li> </ul>
Nuts and seeds	<ul><li>nuts (e.g. walnuts, hazelnuts, almonds)</li><li>seeds (e.g. pumpkin, sunflower)</li></ul>	<ul> <li>nuts and seeds: salted, in chocolate, in caramel, honey, sprinkled, breaded, in chips</li> </ul>
Sweets, desserts and salty snacks	<ul> <li>dark chocolate (70% cocoa minimum)</li> <li>unsweetened fruit purees, mousses and sorbets</li> <li>natural yogurt with fruit, fruit yogurt (without added sugar)</li> <li>natural sweeteners e.g. xylitol, stevia, erythritol</li> <li>low-sugar jam</li> <li>kissels and jellies without added sugar</li> <li>homemade pies and cakes without added sugar</li> </ul>	<ul> <li>sugar e.g. white, cane, brown, coconut</li> <li>honey, maple syrup, date syrup, agave syrup</li> <li>sweets high in sugar and fat e.g. cakes, cookies, chocolate bars, milk and white chocolate, halva, donuts Angel wings (faworki), candies</li> <li>salty snacks e.g. chips, salty sticks, crispy flakes, crackers, nachos, crisps</li> </ul>
Drinks	<ul> <li>water</li> <li>sugar-free beverages e.g. coffee, cereal coffee, tea, herbal and fruit infusions, kompots, cocoa</li> <li>vegetable and fruit juices in limited quantities</li> <li>homemade, unsweetened lemonade</li> </ul>	<ul> <li>alcoholic drinks</li> <li>sweet fizzy and non-carbonated drinks</li> <li>energy drinks</li> <li>nectars, high-sugar fruit syrups</li> <li>drinking chocolate</li> <li>liquorice-based infusions</li> </ul>
Spices and sauces	<ul> <li>fresh and dried single-ingredient herbs e.g. basil, oregano, turmeric, cinnamon, ginger</li> <li>salt-free spice mixtures, herbs de Provence</li> <li>homemade salad dressings with lemon, herbs and a small amount of oil or yogurt</li> <li>sodium and potassium salt in limited quantities</li> </ul>	<ul> <li>salt (e.g. table salt, Himalayan salt, sea salt)</li> <li>spice mixtures containing large amounts of salt</li> <li>bouillon cubes</li> <li>liquid spices to enhance flavour</li> <li>ready-made sauces</li> </ul>
Soups	<ul> <li>soups based on vegetable or lean meat broths</li> <li>soups whitened with yogurt or milk up to 2% fat</li> </ul>	<ul> <li>soups based on fatty meat broths</li> <li>soups whitened with sour cream and thickened with roux</li> <li>instant soups</li> </ul>
Prepared meals	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  *read labels, compare ingredients and pay attention to added sugar, salt and fat content	<ul> <li>fast food e.g. toasted open-faced sandwich (zapiekanka), hot dogs, hamburgers, kebab</li> <li>frozen pizzas, toasted open-faced sandwiches</li> <li>ready-made food in breadcrumbs, fatty sauces, made of refined flour</li> <li>instant meals e.g. sauces, soups</li> </ul>
Technological processing of food	<ul> <li>boiling, steaming (cereal products, vegetables cooked to al dente)</li> <li>grilling (electric grill, grill pans)</li> <li>baking in foil, parchment paper, roasting bags, heat-resistant dish</li> <li>no-fat frying - stewing</li> <li>stewing without pre-frying</li> </ul>	<ul> <li>deep frying</li> <li>stewing with prior deep-frying</li> <li>baking in large amounts of fat</li> <li>breading</li> </ul>
	* small amounts of the recommended vegetable fat e.g. ol oil or canola oil are acceptable if used occasionally	ive













## 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**

- ripe tomatoes
- onion
- garlic
- · canola oil
- basil
- parsley

# Turkey in herbs with groats and salad

- 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





