



# MANAGEMENT OF HYPERTENSION



**T**his booklet contains important information about hypertension and the medications required to bring it under control. If the condition is identified early enough, the first line of treatment often involves the modification of living habits through changes in diet, increased exercise and avoidance of highly stressful activities that may elevate your risk of hypertension. However, medication is still often required to lower blood pressure and reduce the risk of life-threatening complications resulting from the condition. You should read this booklet to learn more about hypertension before starting a course of medication.



**FREQUENTLY ASKED QUESTIONS ABOUT HYPERTENSION**

● ● **What is BP?**

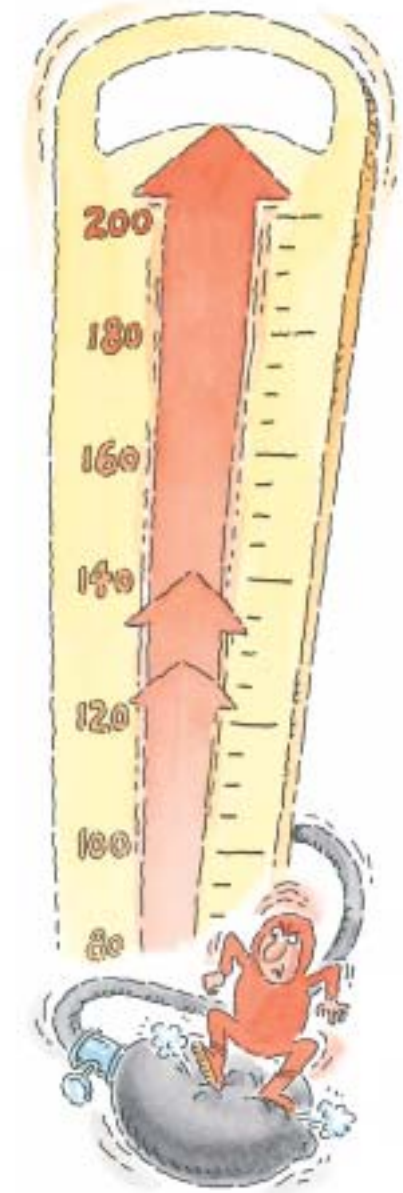
When your heart contracts, it pumps blood through the blood vessels and creates pressure against the vessel walls. The arteries, or the vessels leading away from your heart, are normally muscular and elastic. They stretch when your heart pumps blood through them. BP is the product of blood flow from the heart and the inward resistance of the artery walls.

● ● **How is BP recorded?**

BP is recorded in terms of two numbers, for instance 120/80. The top number (120)—your systolic BP—measures the pressure in millimetres mercury (mmHg) in your arteries when your heart contracts. The bottom number (80)—your diastolic BP—measures the pressure when your heart relaxes in between beats. Your BP changes all the time, depending on activity, stress and excitement.

● ● **What is hypertension?**

You have hypertension if your BP stays abnormally high even when you are resting. Hypertension is referred to as essential, or primary, when there is no specific, identifiable cause. This common type of hypertension may be related to abnormal narrowing of the arteries or the heart beating faster or more forcefully than it should. Secondary hypertension affects a smaller proportion of people. This type of hypertension is due to an underlying medical problem, such as kidney disease, endocrine disorders or taking certain medications.



● ● **How is hypertension classified?**

Your doctor may classify your hypertension as “mild,” “moderate” or “severe.” The table below is a guide to the manner in which your doctor may classify your hypertension.

Category	Systolic (mmHg)	Diastolic (mmHg)
Optimal	Less than 120	Less than 80
Normal	Less than 130	Less than 85
High-normal	130 to 139	85 to 89
Grade 1 (“mild”)	140 to 159	90 to 99
Grade 2 (“moderate”)	160 to 179	100 to 109
Grade 3 (“severe”)	Greater than or equal to 180	Greater than or equal to 110

Adapted from: Chalmers J, MacMahon S, Mancia G, et al. WHO-ISH Hypertension Guidelines Committee. 1999 World Health Organization International Society of Hypertension Guidelines for the Management of Hypertension. J Hypertens 1999;17:151-185.

● ● **What can increase my risk for hypertension?**

Factors that can play a role in the development of hypertension include:

- Age — Blood pressure tends to increase with age, and the older one gets the higher the likelihood of developing hypertension.
- Gender — Men have a greater risk of hypertension than women until age 55, when their respective risks are similar. At age 75 and older, women are more likely to develop hypertension than men.



- Heredity — People whose parents have high blood pressure are more likely to develop hypertension than those whose parents don't.
- Obesity
- A sedentary lifestyle
- Stress
- Smoking
- Excessive amounts of alcohol or salt in the diet

● ● **Why should I be treated for my hypertension?**

Hypertension usually gives you no obvious symptoms, and if left untreated, can lead to damage to the vital organs.

Strokes, heart attacks, heart failure and kidney failure may result from uncontrolled hypertension.

But, with the right treatment, you can reduce the likelihood of this happening.

● ● **How should hypertension be treated?**

Once hypertension is diagnosed, your doctor may recommend some changes in your lifestyle. Your doctor may also decide that you may need medications to control your BP. Medications that control BP are normally referred to as antihypertensives.

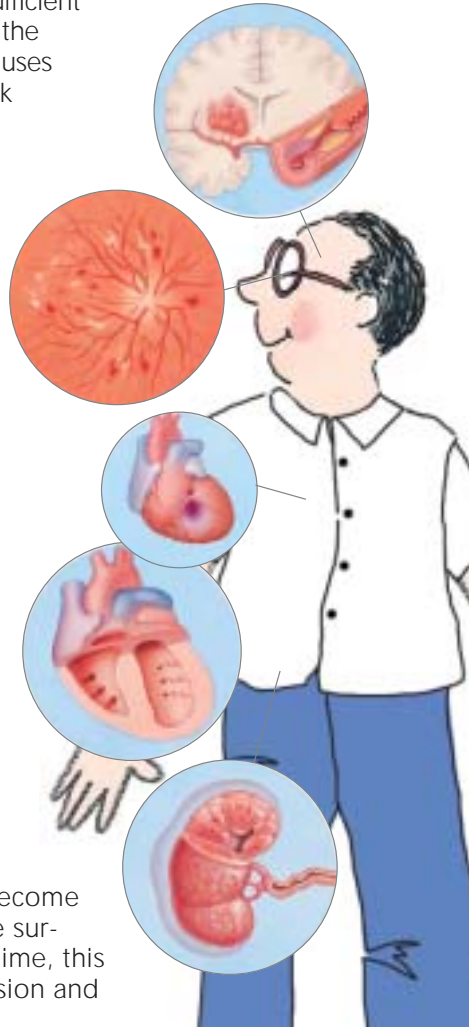
Your doctor will advise you on your ideal BP target. For the best possible way to control your BP, follow your doctor's advice on how to reach this target BP.



### COMPLICATIONS ASSOCIATED WITH HYPERTENSION

Long-standing hypertension, especially when uncontrolled, can lead to serious health problems. Some of these problems are outlined below.

- **Stroke**—The brain requires a constant supply of blood which is supplied by arteries. When blood flow to the brain is disrupted for any reason, brain cells can be damaged from lack of oxygen. Insufficient blood supply to parts of the brain for brief periods causes transient ischaemic attack (TIA), ie, temporary disturbances in brain function. Because disruption of blood supply is only brief, the brain tissue doesn't die. TIA is often an early warning sign of a stroke. Stroke is the most common cause of disabling damage to brain tissues. High BP and atherosclerosis — hardening of arteries from fatty build-up — are the major risk factors for strokes.
- **Blindness**—Extremely high pressure in the vessels of the retina can cause proteins from the blood to leak out and fat to accumulate. Vessels can also rupture and become blocked, damaging the surrounding tissue. Over time, this causes worsening of vision and even blindness.



- **Heart attack**—The coronary arteries carry oxygen-rich blood to the heart muscle. Hypertension can damage these arteries, causing them to become hardened and predisposing them to the development of fatty plaques (atherosclerosis), blocking the vessels. A heart attack occurs when an area of heart muscle dies or is permanently damaged because of an inadequate supply of oxygen from a blocked coronary artery.
- **Heart failure**—Over time, high BP can also lead to congestive heart failure. This is a serious condition in which the heart loses its ability to pump blood efficiently and is unable to pump enough blood to supply the body's needs. As the heart's pumping action is impaired, blood may back up into other areas of the body, such as the legs, leading to swelling of the lower limbs, or the lungs, causing swelling of the lung tissues (pulmonary oedema).
- **Kidney damage**—The kidneys filter wastes and excrete excess fluid from the body. Over time, high BP can narrow and thicken the blood vessels of the kidneys (atherosclerosis). The kidneys filter less fluid, and waste builds up in the blood. Eventually, the kidneys may fail to function altogether (kidney failure). Dialysis or a kidney transplant will be needed when the condition reaches end-stage kidney failure.

### HEALTHY LIVING FOR HYPERTENSIVES

Apart from taking your medication as recommended, what else can you do to control your hypertension?

You can start by reducing the amount of salt and fat that you eat. Here are some tips on how to do just that.

- Start by cutting back on the amount of salt you knowingly take. Try to avoid using the salt-shaker and soy sauce excessively to add flavour to your food.



- Salt can also be present in the food you eat. Fast foods, potato chips and certain canned foods are extremely high in salt content.

- Limit your intake of foods that contain ingredients listed below—these are just salt in disguise.

- Sodium
- Na (the chemical symbol for sodium)
- Soy sauce
- Baking soda
- Baking powder
- MSG (monosodium glutamate)



- Choose to eat more fresh fruits, vegetables, tofu and fish, rather than meats that tend to have a high fat content, such as bacon and pork rinds.

- Broiling, grilling, baking or steaming food is healthier than simply frying it. If you need to use oil for cooking, choose a vegetable oil like canola or olive oil.



- Healthy choices for dairy products include low-fat or fat-free milk and fat-free yogurt.

- High-fibre carbohydrates are a good low-fat option to include in your diet. These include oatmeal, whole-grain breads and cereals, corn, brown rice and dried beans.

It is best to consult your doctor or a dietician for more comprehensive advice on a healthy diet.

Healthy living doesn't just stop at the kitchen and dining room. Read on for more ways to help lower your BP.

#### EXERCISE REGULARLY

Try to do some walking, cycling or swimming for at least 30 minutes, three times a week. Be sure you check with your doctor before starting any exercise program.



#### KEEP YOUR WEIGHT DOWN

Ask your doctor what your ideal weight should be and try to keep it at that level.

#### KEEP STRESS TO A MINIMUM

A little stress is normal in life. However, continuous, highly stressful situations may increase your risk of developing hypertension. Take a break from work and learn some relaxation techniques. Developing a positive attitude also helps.



#### LIMIT YOUR ALCOHOL INTAKE

In general, don't drink more than 5 oz (1 glass) of wine or 12 oz (1 bottle) of beer per day.

#### STOP SMOKING

Smoking increases your risk for developing the problems related to hypertension, such as stroke and heart disease.

### TAKING HYPERTENSION MEDICATION

Although lifestyle modifications may be beneficial, some patients may require prescription medication to further control their BP. If you have been prescribed medication to control your BP, here are some tips on how to take it.

Medication for hypertension must be taken at the same time every day, as per your doctor's recommendations. One good way to keep track of your daily intake is to use a pill box.



Take your medication as prescribed by your doctor. Should you have any concerns in relation to your medication or your hypertension, consult your prescribing doctor.

Even if you have reached your target BP, it is important to continue taking your medication to maintain your BP at that level. Apart from controlling your BP, your medication will also provide protection against potentially serious complications associated with hypertension as outlined in pages 6 and 7.

You should not stop taking your medication unless advised by your prescribing doctor.

### HOW DOES HYPERTENSION MEDICATION WORK ?

You may be prescribed up to 5 types of hypertension medications, either alone or in combination. These agents include diuretics, beta-blockers, ACE (Angiotensin converting enzyme) inhibitors, angiotensin II receptor antagonists and calcium channel blockers.

Diuretics help lower your BP by getting rid of excess body fluid and fluid volume in your blood. This in turn reduces the pressure on artery walls and can help lower the risk of having heart attacks and strokes and dying from heart-related problems.

Beta-blockers, on the other hand, lower BP by decreasing the force and speed of the heart beat.

Angiotensin II is a naturally occurring protein in our body that causes our blood vessels to tighten, making it harder for blood to pass through. This raises your BP. Angiotensin converting enzyme (ACE) inhibitors and angiotensin II receptor antagonists both prevent the constriction of the blood vessels caused by Angiotensin, allowing the vessels to relax and lowering your BP.

Finally, Calcium channel blockers can also relax blood vessels and decrease the heart's pumping strength.

### NEXT STEPS FORWARD

We hope that you have found the information in this booklet useful and now feel better equipped to manage your hypertension. A few lifestyle changes and regular medication (as prescribed by your doctor) are usually all that is needed to keep your BP under control and prevent any complications.

For more information about hypertension and how it affects you or the medication that you have been prescribed, please speak to your doctor.



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