



Official reprint from UpToDate®

www.uptodate.com ©2017 UpToDate, Inc. and/or its affiliates. All Rights Reserved.

The content on the UpToDate website is not intended nor recommended as a substitute for medical advice, diagnosis, or treatment. Always seek the advice of your own physician or other qualified health care professional regarding any medical questions or conditions. The use of UpToDate content is governed by the [UpToDate Terms of Use](#). ©2017 UpToDate, Inc. All rights reserved.

Patient education: High blood pressure in adults (Beyond the Basics)

Author: [Johannes FE Mann, MD](#)

Section Editor: [George L Bakris, MD](#)

Deputy Editors: [Daniel J Sullivan, MD, MPH](#), [John P Forman, MD, MSc](#)

All topics are updated as new evidence becomes available and our [peer review process](#) is complete.

Literature review current through: Sep 2017. | **This topic last updated:** Jun 12, 2017.

HIGH BLOOD PRESSURE OVERVIEW — Hypertension is the medical term for high blood pressure. Blood pressure refers to the pressure that blood applies to the inner walls of the arteries. Arteries carry blood from the heart to other organs and parts of the body.

WHAT IS BLOOD PRESSURE? — An individual's blood pressure is defined by two measurements:

- Systolic pressure is the pressure in the arteries produced when the heart contracts (at the time of a heart beat)
- Diastolic pressure refers the pressure in the arteries during relaxation of the heart between heart beats

Blood pressure is reported as the systolic pressure over diastolic pressure (eg, 120/70 or 120 over 70).

Untreated high blood pressure increases the strain on the heart and arteries, eventually causing organ damage. High blood pressure increases the risk of heart failure, heart attack (myocardial infarction), stroke, and kidney failure.

HIGH BLOOD PRESSURE DEFINITION

Normal blood pressure — Less than 120 over less than 80

Prehypertension — 121 to 139 over 81 to 89

People with prehypertension are at increased risk of developing hypertension and cardiovascular complications, but drugs used to lower blood pressure are not known to be beneficial in people with prehypertension.

Hypertension

Stage 1: 140 to 159 over 90 to 99

Stage 2: greater than 160 over greater than 100

Most adults with hypertension have primary hypertension (formerly called "essential" hypertension), which means that the cause of the high blood pressure is not known. A small subset of adults has secondary

hypertension, which means that there is an underlying and potentially correctable cause, usually a kidney or hormonal disorder.

HIGH BLOOD PRESSURE RISK FACTORS — Hypertension is a common health problem. In the United States, approximately 32 percent of African Americans and 23 percent of white people and Mexican Americans have hypertension.

Hypertension is more common as people grow older. As an example, among people over age 60 years, hypertension occurs in 65 percent of African-American men, 80 percent of African-American women, 55 percent of white men, and 65 percent of white women.

Unfortunately, many people's blood pressure is not well controlled. According to a national survey, hypertension was in good control in only 25 percent of African Americans and whites and 14 percent of Mexican Americans.

HIGH BLOOD PRESSURE SYMPTOMS — High blood pressure does not usually cause any symptoms.

HIGH BLOOD PRESSURE DIAGNOSIS — Many people are anxious when seeing a doctor or nurse. As a result, you are not diagnosed with hypertension unless your blood pressure is persistently high at two office visits at least one week apart.

The only exceptions to this are if the blood pressure is very high or if you have damage from high blood pressure, such as heart, eye, or kidney injury. Before a decision is made to begin treatment, you may be asked to measure your blood pressure at home or work.

HIGH BLOOD PRESSURE TREATMENT — Untreated hypertension can lead to a variety of complications, including heart disease and stroke. The risk of these complications increases as your blood pressure rises above 110/75, which is still in the healthy range. Treating high blood pressure can reduce your risk of heart attack, stroke, and death.

Lifestyle changes — Treatment of hypertension usually begins with lifestyle changes. Making these lifestyle changes involves little or no risk. Recommended changes often include:

- Reduce the amount of salt in your diet
- Lose weight if you are overweight or obese
- Avoid drinking too much alcohol
- Stop smoking
- Exercise at least 30 minutes per day most days of the week

These changes are discussed in detail in a separate article. (See ["Patient education: High blood pressure, diet, and weight \(Beyond the Basics\)".](#))

Medicine — A medicine to lower blood pressure may be recommended if your blood pressure is consistently high, usually at or above 140/90. Treatment with medicine is recommended at a lower blood pressure for some older people and for those with atherosclerosis (fatty deposits lining the arteries, as in coronary heart disease, stroke, or peripheral artery disease), diabetes, or chronic kidney disease complicated by protein in the urine. (See ["Patient education: Diabetes mellitus type 1: Overview \(Beyond the Basics\)"](#) and ["Patient education: Diabetes mellitus type 2: Overview \(Beyond the Basics\)"](#) and ["Patient education: Chronic kidney disease \(Beyond the Basics\)".](#))

High blood pressure medicines are discussed in a separate article. (See ["Patient education: High blood pressure treatment in adults \(Beyond the Basics\)".](#))

WHERE TO GET MORE INFORMATION — Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient education: High blood pressure in adults \(The Basics\)](#)

[Patient education: Controlling your blood pressure through lifestyle \(The Basics\)](#)

[Patient education: Checking your blood pressure at home \(The Basics\)](#)

[Patient education: Preeclampsia \(The Basics\)](#)

[Patient education: Polycystic kidney disease \(The Basics\)](#)

[Patient education: The ABCs of diabetes \(The Basics\)](#)

[Patient education: Exercise \(The Basics\)](#)

[Patient education: High blood pressure and pregnancy \(The Basics\)](#)

[Patient education: Renovascular hypertension \(The Basics\)](#)

[Patient education: High blood pressure emergencies \(The Basics\)](#)

[Patient education: Aortic dissection \(The Basics\)](#)

[Patient education: Coronary heart disease in women \(The Basics\)](#)

[Patient education: Medicines for chronic kidney disease \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient education: High blood pressure, diet, and weight \(Beyond the Basics\)](#)

[Patient education: Diabetes mellitus type 1: Overview \(Beyond the Basics\)](#)

[Patient education: Diabetes mellitus type 2: Overview \(Beyond the Basics\)](#)

[Patient education: Chronic kidney disease \(Beyond the Basics\)](#)

[Patient education: High blood pressure treatment in adults \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Ambulatory and home blood pressure monitoring and white coat hypertension in adults](#)

[Antihypertensive therapy and progression of nondiabetic chronic kidney disease in adults](#)

[Diagnosis of primary aldosteronism](#)

[Can drug therapy be discontinued in well-controlled hypertension?](#)

[Cardiovascular risks of hypertension](#)

[Choice of drug therapy in primary \(essential\) hypertension](#)

[Definition, risk factors, and evaluation of resistant hypertension](#)

[Diet in the treatment and prevention of hypertension](#)

[Hypertension: Who should be treated?](#)

[Moderate to severe hypertensive retinopathy and hypertensive encephalopathy in adults](#)

[Initial evaluation of the hypertensive adult](#)

[Management of severe asymptomatic hypertension \(hypertensive urgencies\) in adults](#)

[Overview of hypertension in adults](#)

[Patient adherence and the treatment of hypertension](#)

[Perioperative management of hypertension](#)

[Prehypertension](#)

[Renin-angiotensin system inhibition in the treatment of hypertension](#)

[Salt intake, salt restriction, and primary \(essential\) hypertension](#)

[Establishing the diagnosis of renovascular hypertension](#)

[Prevention of cardiovascular disease events in those with established disease or at high risk](#)

[Spontaneous intracerebral hemorrhage: Pathogenesis, clinical features, and diagnosis](#)

[Spontaneous intracerebral hemorrhage: Treatment and prognosis](#)

[Blood pressure measurement in the diagnosis and management of hypertension in adults](#)

[The metabolic syndrome \(insulin resistance syndrome or syndrome X\)](#)

[The prevalence and control of hypertension in adults](#)

[Treatment of hypertension in blacks](#)

[Antihypertensive therapy to prevent recurrent stroke or transient ischemic attack](#)

[Treatment of hypertension in patients with diabetes mellitus](#)

[Treatment of hypertension in patients with heart failure](#)

[Treatment of hypertension in the elderly patient, particularly isolated systolic hypertension](#)

[Treatment of resistant hypertension](#)

[What is goal blood pressure in the treatment of hypertension?](#)

[Evaluation of secondary hypertension](#)

The following organizations also provide reliable health information.

- National Library of Medicine

(www.nlm.nih.gov/medlineplus/healthtopics.html)

- National Heart, Lung & Blood Institute (NHLBI)

(www.nhlbi.nih.gov)

- American Heart Association

(www.americanheart.org)

- The Hormone Foundation

(www.hormone.org)

[1-7]

Use of UpToDate is subject to the [Subscription and License Agreement](#).

REFERENCES

1. Weber MA, Schiffrin EL, White WB, et al. Clinical practice guidelines for the management of hypertension in the community a statement by the American Society of Hypertension and the International Society of Hypertension. *J Hypertens* 2014; 32:3.
2. Mancia G, Fagard R, Narkiewicz K, et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension: the Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *J Hypertens* 2013; 31:1281.
3. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA* 2014; 311:507.
4. MacMahon S. Blood pressure and the risk of cardiovascular disease. *N Engl J Med* 2000; 342:50.
5. Vasan RS, Larson MG, Leip EP, et al. Impact of high-normal blood pressure on the risk of cardiovascular disease. *N Engl J Med* 2001; 345:1291.
6. Burt VL, Whelton P, Roccella EJ, et al. Prevalence of hypertension in the US adult population. Results from the Third National Health and Nutrition Examination Survey, 1988-1991. *Hypertension* 1995; 25:305.
7. Hebert PR, Moser M, Mayer J, et al. Recent evidence on drug therapy of mild to moderate hypertension and decreased risk of coronary heart disease. *Arch Intern Med* 1993; 153:578.

Topic 4416 Version 24.0

Contributor Disclosures

Johannes FE Mann, MD Grant/Research/Clinical Trial Support: NovoNordisk [Diabetes (insulin)]; NovoNordisk [Diabetes (insulin)]; Europ. Union (diabetes); Canadian Institutes Health Research (hypertension); Celgene (anaemia, bone disease); Roche (anemia); Sandoz (anemia). Speaker's Bureau: Amgen (anemia); Astra (hyperkalemia); Braun (dialysis); Fresenius (dialysis); Gambro (dialysis); Medice (dialysis); NovoNordisk (diabetes); Relypsa (hyperkalemia); Roche (anemia). Consultant/Advisory Boards: Abbvie (diabetes); Astra (hyperkalemia); Celgene (anemia); Fresenius (dialysis); Lilly (diabetes); Lanthio (chronic kidney disease); NovoNordisk (diabetes); Relypsa (hyperkalemia); Sanifit (chronic kidney disease); Vifor (anemia). **George L Bakris, MD** Grant/Research/Clinical Trial Support: Bayer; Boehringer Ingelheim; Relypsa; Vascular Dynamics [Diabetic neuropathy, diabetes, hypertension (Empagliflozin, patiromer)]. Consultant/Advisory Boards: AstraZeneca; Bayer; Boehringer Ingelheim; Relypsa; Vascular Dynamics; Merck [Nephropathy, diabetes, hypertension (Empagliflozin, Patiromer)]; Pfizer; NxStage [Diabetic neuropathy, diabetes, hypertension (Empagliflozin, patiromer)]. **Daniel J Sullivan, MD, MPH** Nothing to disclose **John P Forman, MD, MSc** Nothing to disclose

Contributor disclosures are reviewed for conflicts of interest by the editorial group. When found, these are addressed by vetting through a multi-level review process, and through requirements for references to be provided to support the content. Appropriately referenced content is required of all authors and must conform to UpToDate standards of evidence.

[Conflict of interest policy](#)