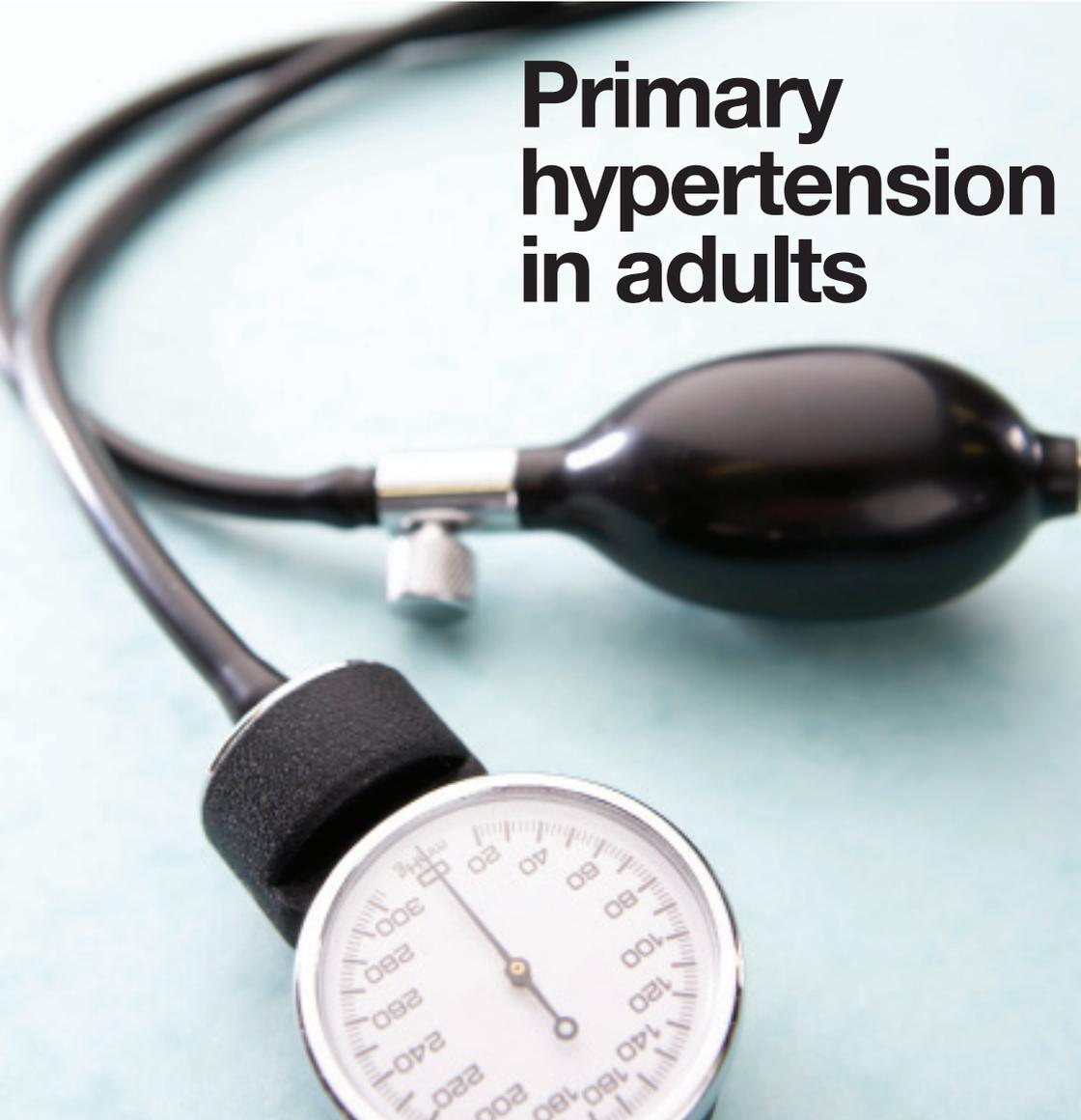


# Primary hypertension in adults



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## Welcome

NICE published an updated guideline on the diagnosis and treatment of high blood pressure (hypertension) in August 2011. Developed in conjunction with the British Hypertension Society (BHS), it makes a number of new recommendations that are set to significantly improve the way health professionals diagnose and treat high blood pressure in the NHS in England and Wales.

**Nursing**  
IN PRACTICE

# Clinical guideline

**U**pdating NICE's previous recommendations from 2006, this new guideline offers best practice advice on the care of adults with primary hypertension, based on the best available evidence.

High blood pressure is one of the most important preventable causes of premature ill health and death in the UK. It is a major risk factor for stroke, heart attack, heart failure, chronic kidney disease, cognitive decline and premature death. Primary hypertension is diagnosed when there is no simple identifiable cause of the raised blood pressure: the hypertension may be partly related to obesity, dietary factors such as salt intake, physical inactivity or genetic inheritance. About nine out of every ten people with hypertension have primary hypertension. Secondary hypertension, which is not covered in the guideline, means there is an identifiable cause such as kidney disease.

The risk associated with increasing blood pressure is continuous, with each 2 mmHg rise in systolic blood pressure associated with a 7% increased risk of mortality from ischaemic heart disease and a 10% increased risk of mortality from stroke.

In any individual, systolic and/or diastolic blood pressures may be elevated. Diastolic

## BOX 1. DEFINITIONS

In this guideline the following definitions are used:

- **Stage 1 hypertension** Clinic blood pressure is 140/90 mmHg or higher and subsequent ambulatory blood pressure monitoring (ABPM) daytime average or home blood pressure monitoring (HBPM) average blood pressure is 135/85 mmHg or higher.
- **Stage 2 hypertension** Clinic blood pressure is 160/100 mmHg or higher and subsequent ABPM daytime average or HBPM average blood pressure is 150/95 mmHg or higher.
- **Severe hypertension** Clinic systolic blood pressure is 180 mmHg or higher or clinic diastolic blood pressure is 110 mmHg or higher.

pressure is more commonly elevated in people younger than 50. With ageing, systolic hypertension becomes a more significant problem, as a result of progressive stiffening and loss of compliance of larger arteries.

Hypertension is very common in the UK and its prevalence increases with age, so

with more people living longer the overall prevalence of hypertension is expected to increase. Quality and Outcomes Framework (QOF) data for 2009/10 cite a prevalence of established hypertension of 13.4%, meaning there are currently about 12 million people in the UK who have hypertension (blood pressure  $\geq 140/90$  mmHg) and more than half of those are over the age of 60 years. Around 5.7 million people have hypertension that is undiagnosed.

The clinical management of hypertension is currently one of the most common interventions in primary care, accounting for approximately £1bn in drug costs alone in 2006.

The recommendations that have been reviewed in this partial update of the NICE guideline for the clinical management of primary hypertension in adults include: blood pressure measurement for the diagnosis of hypertension; blood pressure thresholds for intervention with drug therapy and blood pressure targets for treatment; specific aspects of the recommendations for the pharmacological treatment of hypertension; the treatment of hypertension in the very elderly (people aged greater than 80 years); dilemmas surrounding decision-making for treatment of hypertension in younger adults (less than 40 years); the treatment of drug-resistant hypertension; and, where appropriate, the impact of age and ethnicity on treatment recommendations.

## BLOOD PRESSURE MONITORING AND DRUG TREATMENT

In one of the biggest changes to NICE's original guidance, the new guideline

recommends that a diagnosis of primary hypertension should be confirmed using 24-hour ambulatory blood pressure monitoring (ABPM) (devices that are programmed to allow blood pressure to be measured repeatedly during the day and night), or home blood pressure monitoring (HBPM), rather than based solely on measurements of blood pressure taken in the clinic.

Ambulatory blood pressure monitoring (ABPM) involves a cuff and bladder connected to electronic sensors that detect changes in cuff pressure and allow blood pressure to be measured oscillometrically (ie, uses small oscillations, or changes, in cuff pressure to identify the systolic, mean and diastolic pressures). The cuff is inflated by a battery powered compressor and sensors within the cuff detect changes in pressure oscillations during cuff deflation. Thus, a patient's blood pressure can be automatically measured at repeated intervals (commonly every 30 minutes) throughout the day and night, while they continue routine activities. Systolic and diastolic pressure can be plotted over time, with most devices providing average day, night and 24 hour pressures. This helps empower patients to take control of their own treatment.

This recommendation draws on substantial new evidence suggesting that ABPM is more accurate than both clinic and home monitoring in defining the presence of hypertension, and implementing a diagnostic strategy for hypertension using ambulatory monitoring following an initial raised clinic reading can reduce misdiagnosis and save money for the NHS.

When using ABPM to confirm a diagnosis of hypertension, the new guideline recommends that healthcare professionals ensure that at least two measurements per hour are taken during the person's usual waking hours (for example, between 8 am and 10 pm). The average value of at least 14 measurements taken during the person's usual waking hours should be used to confirm a diagnosis of hypertension.

When using HBPM to confirm a diagnosis of hypertension, ensure that:

- For each blood pressure recording, two consecutive measurements are taken, at least 1 minute apart and with the person seated and
- Blood pressure is recorded twice daily, ideally in the morning and evening and
- Blood pressure recording continues for at least four days, ideally for seven days.

The measurements taken on the first day should be discarded and healthcare professionals should use the average value of all the remaining measurements to confirm a diagnosis of hypertension.

Another important issue addressed in the guideline is initiating and monitoring antihypertensive drug treatment, including blood pressure targets. The guideline states that antihypertensive drug treatment should be offered to people aged under 80 years with stage 1 hypertension (see Box 1 for definitions) who have one or more of the following:

- Target organ damage.
- Established cardiovascular disease.
- Renal disease.
- Diabetes.
- A ten-year cardiovascular risk equivalent to 20% or greater.

It should also be offered to people of any age with stage 2 hypertension.

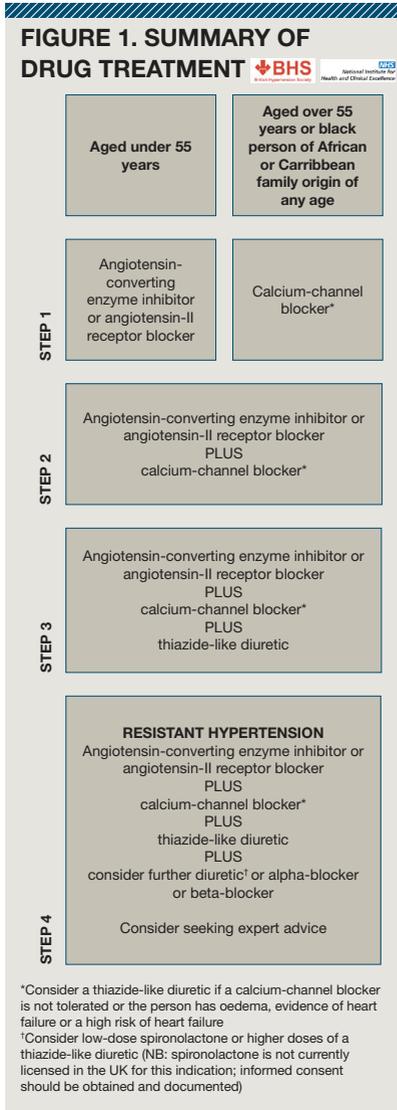
For people aged under 40 years with stage 1 hypertension and no evidence of target organ damage, cardiovascular disease, renal disease or diabetes, consider seeking specialist evaluation of secondary causes of hypertension and a more detailed assessment of potential target organ damage. This is because ten-year cardiovascular risk assessments can underestimate the lifetime risk of cardiovascular events in these people.

For people identified as having a 'white coat effect' (a discrepancy of more than 20/10 mmHg between clinic and average daytime ABPM or average HBPM blood pressure measurements at the time of diagnosis), ABPM or HBPM should be considered as an adjunct to clinic blood pressure measurements to monitor the response to antihypertensive treatment with lifestyle modification or drugs.

'White coat' hypertension is where clinicians (signified by their white coats) can cause spuriously high blood pressure readings in patients. The effect is short lived, with blood pressure dropping to normality after or near the end of the consultation. Consequently, a patient may present as hypertensive in clinic but be normotensive otherwise.

The guideline also updates recommendations for the pharmacological treatment of hypertension. These are summarised in the algorithm in Figure 1. The guideline recommends offering people aged 80 years and over the same antihypertensive drug treatment as people aged 55–80 years, taking into account any co-morbidities.

**FIGURE 1. SUMMARY OF DRUG TREATMENT**



**PATIENT INFORMATION**

The importance of patients being actively involved in decisions about their care is also a key theme throughout the guideline. Good communication between healthcare professionals and people with hypertension is essential. It should be supported by evidence-based written information tailored to the person's needs. Treatment and care, and the information people are given about it, should be culturally appropriate. It should also be accessible to people with additional needs such as physical, sensory or learning disabilities, and to people who do not speak or read English.

If the person agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

Families and carers should also be given the information and support they need.

Professor Bryan Williams, Professor of Medicine, University of Leicester and University Hospitals NHS Trust, Leicester, and Guideline Development Group Chair said: "The important recommendations in this guideline will affect the treatment of millions of people in our country and change the way blood pressure is diagnosed for the first time for more than a century. It is a step-change that is likely to be replicated across the world, and means the diagnosis of hypertension will be more accurate. It will ensure that those who really need treatment get treated and those who don't need treatment don't get treated unnecessarily."

NICE has produced a range of support tools to help health professionals put the new guidelines into practice. These include an audit support and electronic audit tool for local clinical audit, slides highlighting key

messages for local discussion, and costing tools.

Clinical case scenarios have also been developed to illustrate how the recommendations can be applied to the diagnosis and management of people with hypertension in primary care. Available as a PowerPoint presentation to help facilitate group learning and as a PDF document more suited to individual use, they are relevant to a wide range of healthcare professionals.

Following the course of realistic patients from first presentation to stabilisation, they will help to improve users' knowledge of the clinical guideline on hypertension and its application in primary care.

Suitable for practice and community nurses, this resource should update those responsible for measuring and interpreting blood pressure, diagnosing hypertension and monitoring the response to treatment. All tools are available from the NICE website at: [www.nice.org.uk](http://www.nice.org.uk)

### **GUIDELINE SUMMARY**

Hypertension is one of the most important and preventable causes of premature ill health and death in the UK.

Implementing a diagnostic strategy for hypertension using ambulatory monitoring following an initial raised clinic reading can reduce misdiagnosis and save the NHS money.

This updated NICE/BHS guideline will enable people with hypertension to benefit from a coherent and consistent approach to managing their condition, from a single source, based on the most up-to-date evidence.