



Hypertension – the 'Silent Killer'

Briefing Statement

Introduction

If an individual's resting blood pressure is persistently high, it not only puts a strain on the heart but also damages the walls of the arteries, making them stiffer and more prone to clogging and haemorrhage. This causes problems in the organs they supply and leads to potentially fatal conditions and debilitating disorders, such as coronary heart disease and stroke.

Hypertension, defined as a persistent raised blood pressure of 140/90mmHg,^{1,2,3} is one of the most common disorders in the UK.* Although it rarely causes symptoms on its own, the damage it does to the arteries and organs can lead to considerable suffering and burdensome healthcare costs. Hypertension is arguably the most important modifiable risk factor for coronary heart disease (the leading cause of premature death in the UK) and stroke (the third leading cause). It is also an important cause of congestive heart failure (heart strain) and chronic kidney disease. This has 'earned' hypertension a reputation as the '**silent killer**', making it a key priority for prevention, detection and control, and one of the most important challenges facing public health today.

Despite isolated examples of good practice, a truly 'joined-up' approach to tackling hypertension is lacking, particularly around prevention, early detection and clinical protocols for control. It is therefore critical that primary care staff and local multi-agency teams work together to establish programmes which not only identify and treat people with hypertension but actively promote healthy lifestyles and implement preventive strategies in order to meet the challenge of tackling hypertension

Footnote: Blood pressure is expressed as two numbers eg. 140/90mmHg – 140 is the 'systolic' pressure (highest pressure during each pulse) and 90 is the 'diastolic' pressure (lowest pressure). It is measured in millimetres of mercury (mmHg).

*Thresholds for hypertension in people with Type 1 and Type 2 diabetes are slightly lower.

Five main types of hypertension⁴

Essential (or primary):	accounts for 95% of cases of hypertension in the UK. No specific underlying cause but thought to result from a genetic predisposition in addition to the cumulative effects of various lifestyle factors eg. salt intake, physical inactivity.
Secondary:	accounts for up to 5% of cases. Caused by an underlying disease, most commonly chronic kidney disease, or as a side-effect of medication.
Malignant (or accelerated):	a very high or rapidly rising blood pressure which threatens end-organ damage and requires urgent or emergency treatment. About 1% of those with essential hypertension develop malignant hypertension.
Gestational:	occurs during pregnancy and usually returns to normal following childbirth.
White-coat:	occurs when a person's blood pressure is high when they see a doctor or nurse, but is 'normal' at other times.

Evidence

The associated risks of hypertension increase gradually in parallel with rising blood pressure. A large-scale international study has shown that significantly increased risks of cardiovascular disease begin to appear at a level as low as 115/75mmHg⁵ – far lower than the current average adult blood pressure (eg. England average: 131/74mmHg for men and 126/73mmHg for women).⁶

The 'threshold' of 140/90mmHg (as a diagnosis of hypertension) has been designated to indicate when a particular course of action should be instituted, such as intervening medically.^{1,2,3}

Effects of hypertension on health

Hypertension is usually symptomless and often not regarded as a disease in its own right. However, it is a major risk factor in a number of potentially fatal conditions and debilitating disorders:

- Coronary heart disease
- Stroke
- Heart failure
- Chronic kidney disease
- Aortic aneurysm
- Retinal disease
- Peripheral vascular disease

Prevalence of hypertension

In England, 32% of men and 30% of women, aged 16 years or over, have hypertension.⁶ The equivalent figures for Scotland are 33% of men and 28% of women.²⁰ There are no exactly comparable figures for Wales or Northern Ireland. However, 15% of adults in Wales reported being treated for high blood pressure.⁷ In Northern Ireland, 19% of men and 27% of women reported having been diagnosed with high blood pressure.⁸

Risk factors for hypertension

Although hypertension is itself a risk factor for a number of conditions, (see above) there are also risk factors – both unmodifiable and modifiable – which predispose certain people to developing hypertension.

Main risk factors for developing hypertension*

Unmodifiable

- Age and gender
- Ethnicity

Modifiable

- Excess salt
- Overweight and obesity
- Physical inactivity
- Excess alcohol
- Diabetes

Unmodifiable risk factors

Age and gender

The association between increasing age and increasing systolic blood pressure is thought to reflect the length of time people are exposed to modifiable risk factors. For any given age up to 65 years women tend to have a lower blood pressure than men. After 65 years, this trend is reversed.⁶ The cause is unknown. Prevalence also increases with age.

Ethnicity

Hypertension is more prevalent in different ethnic groups, such as black Caribbean men and women, and less prevalent in Bangladeshi men and women, for example.⁹ Some of the differences in prevalence are thought to be related to inherited differences in the way the body reacts to salt¹⁰ and in blood pressure controlling hormones.

* This is not an exhaustive list of risk factors. For a full list see *Easing the Pressure: Tackling Hypertension*⁴

Modifiable risk factors

Excess salt

Evidence has shown a strong association between salt intake and elevated blood pressure.¹¹ In the UK, 65-70% of the salt we eat comes from processed foods such as bread, cereals, ready meals etc.¹¹ Average adult daily intake is 9g of salt per day – three times the amount actually needed.¹² The daily recommended level is 6g for adults – representing what is actually achievable across the population, not what is *optimal*. For children, different thresholds have been set according to age.¹¹

Overweight and obesity

Obesity multiplies the risk of developing hypertension about fourfold in men and threefold in women.¹³ It is well documented that levels of overweight and obesity have increased over the last decade. In the UK, about two-thirds of men and over half of women are either overweight (BMI of 25-29.9kg/m²) or obese (BMI of 30kg/m²).⁴

Physical inactivity

People who do not take enough aerobic exercise (eg. running, walking and cycling) are more likely to have or to develop hypertension. Large cross-sectional and longitudinal studies have shown a direct positive correlation between habitual aerobic physical inactivity and hypertension.¹⁴ 59% of men and 72% of women in Scotland,¹⁵ and 70% of men and 74% of women in Northern Ireland do not meet physical activity guidelines.⁸ In Wales, 14% of adults do not exercise,¹⁶ and in England, only 37% of men and 24% of women meet recommended levels.⁶

Excess alcohol

Blood pressure rises when large amounts of alcohol are consumed, particularly when binge-drinking. Heavy alcohol use is a well-established risk factor for hypertension and stroke. A large study of almost 6,000 men, aged 35-64 years, followed-up for 21 years, found that there was a strong correlation between alcohol consumption and mortality from stroke.¹⁷

Diabetes

Hypertension is more prevalent in people with Type 1 and Type 2 diabetes than in the non-diabetic population (whether they are overweight or not), as a consequence of kidney damage and insulin resistance respectively. In England, as many as 70% of adults with Type 2 diabetes have hypertension, doubling the risk of a cardiovascular event.⁴

Costs

In addition to the suffering caused to patients, carers and their families, as a consequence of hypertension, there is also a considerable cost burden to the NHS, social care and the wider economy. It is extremely difficult to calculate the proportion attributable to hypertension. However, with regard to the main consequences – coronary heart disease and stroke – it has been calculated that total costs are equivalent to about £7.06bn for coronary heart disease, and £5.77bn for stroke.¹⁶

Prevention

There is an increasing body of evidence to support various lifestyle changes to prevent hypertension. There are two approaches to preventing hypertension:

Whole population

The aim is to prevent hypertension by lowering average blood pressure by relatively small amounts across a whole population. It has been estimated that a reduction as small as 2mmHg in average adult systolic blood pressure could save more than 14,000 UK lives per year.¹⁸ This can be achieved by encouraging enough people to change their lifestyles sufficiently to reduce their blood pressure.

Main lifestyle changes include:

- Reduce salt intake (to an average of 6g/day for adults)¹¹
- Increase fruit and vegetable intake
- Increase habitual physical activity to recommended levels
- Keep alcohol intake within recommended benchmark limits
- Control weight

'At-risk' individuals or groups

This approach focuses on those known to be at higher risk of developing hypertension. The risk factors described above, and further explained in *Easing the Pressure: Tackling Hypertension*,⁴ can be used to identify target individuals and groups. For example, focus could be on those who are overweight or obese, or those from particular ethnic communities who have an increased risk of hypertension (see *Ethnicity* p.2).

Detection and control

Detection

The task of identifying those adults with existing hypertension is a daunting one and in a general practice setting it makes sense to prioritise those patients at high overall risk of cardiovascular disease, or who show signs or symptoms of target-organ damage that may be due to, or exacerbated by, hypertension. There are three main ways of identifying patients with hypertension – known as 'case-finding':

- *Opportunistic case-finding in various settings* – often undertaken during a consultation on another health matter, or in settings such as health fairs, workplaces etc.
- *Systematic screening programmes* – usually based on a proactive call-recall programme.
- *Targeted case-finding in general practice* – focuses on patients most likely to have hypertension or complications from it. Well-maintained disease registers are necessary for successful implementation.

Control

Evidence shows that lowering blood pressure in people with hypertension is associated with a reduction in cardiovascular disease risk. A large-scale meta-analysis of observation prospective studies among hypertensive patients aged 40-69 years showed that a 20mmHg lower systolic blood pressure is associated with:⁵

- less than half the risk of dying from a stroke, and
- half the risk of dying from coronary heart disease.

It is important that clinical decisions about whether and how to treat hypertensive patients are based on both their blood pressure level and overall cardiovascular risk – not on blood pressure alone. Please refer to appropriate clinical guidelines. The key guidelines that provide clinical protocols for instituting therapies, including drug therapy, to control hypertension are produced by the British Hypertension Society, NICE and Scottish Intercollegiate Guideline Network.^{1,2,3}

As a consequence of poor detection and diagnosis, many people with hypertension go untreated or receive inadequate treatment – the proportion of those untreated tends to be higher in older people and manual socioeconomic groups.⁴ The National Service Frameworks (NSFs) and GMS contract provide incentives to address this.

Adherence and concordance

Of those who are diagnosed, only 10% are controlled to the target of 140/90mmHg.¹⁹ This is due to poor practitioner understanding of treatment regimens, and to patients not taking medication as prescribed – known as poor **adherence**. **Poor adherence to prescribed medications is the most important cause of uncontrolled blood pressure.** Reasons for this include forgetfulness, difficulty in reading written instructions or in opening medicine bottles.

Concordance means shared decision-making and agreeing a plan of treatment that best represents the intentions of both the patient and clinician. It is an important step in motivating patients to take their medicines as prescribed. Agreements should be supported with written information, a care plan and patient-held record. This issue is explored by the Medicines Partnership Organisation (see *Useful Organisations* p.6).

Policy Context

There are numerous policy drivers – at both national and local level – which are relevant to hypertension. *Easing the Pressure: Tackling Hypertension* gives details of relevant policies and strategies.⁴ However, key drivers include:

England: The NSFs for Coronary Heart Disease, Older People, Diabetes and Renal Services all have standards relevant to the prevention, detection and control of hypertension.

The public health white paper, *Choosing Health*, builds on the NSFs. It introduces a number of new initiatives including tough targets for salt reduction in processed foods, nutrient-based standards for public sector catering and specialist anti-obesity services in primary care trusts.

The *Department of Health Public Service Agreement* sets objectives to substantially reduce mortality rates from the major killer diseases as well as improve health outcomes for people with long-term conditions. It also aims to halt the year-on-year rise in obesity among children. The *Priorities and Planning Framework 2003-2006* also requires practice-based registers to be updated to ensure patients with CHD and diabetes receive appropriate advice. *National Standards, Local Action: Health and Social Care Standards and Planning Framework 2005/06-2007/08* sets national targets and standards for NHS and social services authorities.

The Faculty of Public Health has produced, in association with the National Heart Forum, **Easing the Pressure: Tackling Hypertension – a toolkit for developing a local strategy to tackle high blood pressure.**⁴ Supported by the key organisations involved in tackling hypertension, the toolkit provides local health improvement teams with the essential building blocks to develop an effective programme for the prevention and control of hypertension. An **online resource** has also been developed and includes a 'ready-reckoner' to help calculate local prevalence, and checklists to help identify gaps and monitor progress (see: www.fph.org.uk/Publications). *Easing the Pressure* forms part of a wider campaign of work aimed at promoting healthier lifestyles to reduce disease burden through the production of toolkits on the wider determinants of health including physical activity, obesity, food poverty and fuel poverty. The Faculty also advocates on salt reduction as part of its salt strategy.

Scotland: *Improving Health in Scotland: the Challenge – Framework for Action* sets targets for improving the life expectancy and health-life expectancy of all adults.

The *Coronary Heart Disease and Stroke Strategy for Scotland* recommends that all NHS boards should develop explicit CHD and stroke prevention strategies to target groups classed as 'high risk' – including those with hypertension.

The white paper, *Towards a Healthier Scotland*, sets targets for CHD, stroke, physical activity, diet and alcohol, to improve those life circumstances that impact on health.

Wales: The white paper, *Improving Health in Wales: A Plan for the NHS with its Partners* sets the direction for health services in Wales, including increasing the power of local health groups to deliver strong community-based health and social care services.

To reduce deaths from CHD, *Tackling Coronary Heart Disease in Wales: Implementing through Evidence* requires everyone at high risk of developing, or who have been diagnosed with, CHD to have access to a multifactorial risk assessment and appropriate treatment.

Northern Ireland: The *Investing for Health* strategy aims to improve the health and well-being of people in Northern Ireland including reducing the mortality rate from circulatory diseases, in particular heart disease and stroke.

The *Northern Ireland Evidence-based Stroke Strategy* provides a challenging agenda for the development of stroke services over the next 5-10 years.

International: The *World Health Report 2002: Reducing Risks, Promoting Healthy Life* describes the burden of disease, disability and death that can be attributed to a small number of health risks, including blood pressure.

Recommendations

The prevention, detection and control of hypertension are essential to national strategies concerned with CHD, stroke, diabetes, chronic kidney disease and the health of older people. The following recommendations can help local multi-agency teams implement strategies to tackle hypertension at local level:

- Establish a local hypertension action team, with key partners including health services, local authorities and voluntary organisations for example, to develop a local hypertension strategy. *Easing the Pressure: Tackling Hypertension* gives comprehensive guidance on how to go about this.⁴
- Undertake a service review or audit of local services to identify current activity, gaps, priorities and possible opportunities for service development.
- Review and agree local clinical guidelines and protocols on the detection, treatment and management of hypertension. The review should consider national guidance as well as reflect local circumstance. Ensure guidelines have local ownership, including primary and secondary care.
- Develop comprehensive local programmes to promote healthy eating and physical activity.
- Support local primary care practitioners through regular practice visits to advise on developing 'at-risk' registers, call-recall rotas, prescribing, IT systems, staffing issues, and additional resources.
- Produce patient information to explain the risks of hypertension and give advice on the various interventions and treatments to prevent and reduce blood pressure.
- Hold local events and meetings to raise awareness of hypertension, such as local health fairs, awareness days. Encourage people to 'know their number' (ie. their blood pressure level). These events could be targeted at specific groups and give relevant lifestyle advice.
- Set local standards for public sector catering services such as schools, NHS, to include recommendations on salt levels.

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Publications

- Easing the Pressure: Tackling Hypertension (2005)**
Online resource
www.fph.org.uk
- Choosing Health: Making Healthy Choices Easier (2004)**
National Service Frameworks for Coronary Heart Disease (2000), Diabetes (2001), Older People (2001), Renal Services (2005)
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National Health Service for Wales
www.wales.nhs.uk
- Investing for Health (2002)**
Department of Health, Social Services and Public Safety
www.dhsspsni.gov.uk
- Northern Ireland Evidence-based Stroke Strategy (2001)**
Northern Ireland Chest, Heart and Stroke Association
www.nichsa.com

World Health Report 2002: Reducing Risks, Promoting Healthy Life

World Health Organization
www.who.int/en

Useful Organisations

Blood Pressure Association

www.bpassoc.org.uk

British Heart Foundation

Heart Information Line: 08450 70 80 70
www.bhf.org.uk

British Hypertension Society

www.hyp.ac.uk

Consensus Action on Salt and Health

www.actiononsalt.org.uk

Diabetes UK

Helpline: 020 7424 1030

www.diabetes.org.uk

Food Standards Agency

www.food.gov.uk

Medicines Partnership Taskforce

www.medicine-partnership.org

National Heart Forum

www.heartforum.org.uk

National Institute of Health and Clinical Excellence

www.nice.org.uk

National Kidney Federation

Helpline: 0845 601 0209

www.kidney.org.uk

Stroke Association

Helpline: 0845 30 33 100

www.stroke.org.uk

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Summary

This briefing gives an overview of the burden of hypertension – including the implications for health and the cost to individuals, society and the NHS. It also makes important recommendations for action that can be implemented at local level. It is not intended as an exhaustive resource but as a signpost to the key evidence, publications and organisations as a next step to understanding and tackling this important public health issue.