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1 Recommendations

2 This section contains the recommendations that are being updated, and other
3 relevant recommendations needed for context (shaded in grey and marked **[2019,**
4 **amended 2021]**). See [update information](#) for a full explanation of what has been
5 updated, and the [2019 guideline for the full list of recommendations](#).

6 1.4 Treating and monitoring hypertension

7 Monitoring treatment and blood pressure targets

8 For specific recommendations on blood pressure control in people with other
9 conditions or who are pregnant, see also the following NICE guidelines:

- 10 • [chronic kidney disease in adults](#)
- 11 • [type 1 diabetes](#)
- 12 • [hypertension in pregnancy](#).

13 1.4.20 Reduce clinic blood pressure to below 140/90 mmHg and ensure that it is
14 maintained below that level in adults with hypertension aged under 80.

15 **[2019, amended 2021]**

16 1.4.21 Reduce clinic blood pressure to below 150/90 mmHg and ensure that it is
17 maintained below that level in adults with hypertension aged 80 and over.
18 Use clinical judgement for people with frailty or multimorbidity (see also
19 [NICE's guideline on multimorbidity](#)). **[2019, amended 2021]**

20 1.4.22 When using ABPM or HBPM to monitor the response to treatment in
21 adults with hypertension, use the average blood pressure level taken
22 during the person's usual waking hours (see [recommendations 1.2.6 and](#)
23 [1.2.7](#)). Reduce blood pressure and ensure it is maintained at the following
24 levels:

- 25 • below 135/85 mmHg for adults aged under 80
- 26 • below 145/85 mmHg for adults aged 80 and over.

27

1 Use clinical judgement for people with frailty or multimorbidity (see also
2 [NICE's guideline on multimorbidity](#)). **[2019, amended 2021]**

3 1.4.23 Use the same blood pressure targets for people with and without
4 cardiovascular disease. **[2021]**

For a short explanation of why the committee made the recommendation on blood pressure targets for people with cardiovascular disease, see the [rationale and impact section on blood pressure targets for people with cardiovascular disease](#).

Full details of the evidence and the committee's discussion are in the [evidence review for blood pressure targets for people with cardiovascular disease](#).

5

6 **Choosing antihypertensive drug treatment (for people with or without** 7 **type 2 diabetes)**

8 1.4.30 For people with cardiovascular disease:

- 9 • follow the recommendations for disease-specific indications in the NICE
10 guideline on their condition (for example, when prescribing an ACE
11 inhibitor or an ARB for secondary prevention of myocardial infarction)
- 12 • if their blood pressure remains uncontrolled, offer antihypertensive drug
13 treatment in line with the section on [choosing antihypertensive drug](#)
14 [treatment \(for people with or without type 2 diabetes\)](#). **[2021]**

For a short explanation of why the committee made the recommendation on choosing antihypertensive drug treatment for people with cardiovascular disease, see the [rationale and impact section on choosing antihypertensive drug treatment for people with cardiovascular disease](#).

Full details of the evidence and the committee's discussion are in the [evidence review for choosing antihypertensive drug treatment for people with cardiovascular disease](#).

15

1 **Terms used in this guideline**

2 This section defines terms that have been used in a particular way for this guideline.
3 For other definitions see the [NICE glossary](#).

4 **Cardiovascular disease**

5 Medical history of ischaemic heart disease, cerebrovascular disease, peripheral
6 vascular disease, aortic aneurysm or heart failure. Cardiovascular disease is a
7 general term for conditions affecting the heart or blood vessels. It is usually
8 associated with a build-up of fatty deposits inside the arteries (atherosclerosis) and
9 an increased risk of blood clots. It can also be associated with damage to arteries in
10 organs such as the brain, heart, kidneys and eyes through deposition of glassy
11 material within the artery walls (arteriosclerosis). Cardiovascular disease is 1 of the
12 main causes of death and disability in the UK, but it can often largely be prevented
13 by leading a healthy lifestyle.

14

15 **Recommendations for research**

16 The 2021 guideline committee updated the 2019 recommendation for research on
17 blood pressure targets for people over 80, and made 2 new recommendations for
18 research.

19 **1 Blood pressure targets for people over 80**

20 What is the optimum blood pressure target for people aged over 80 with treated
21 primary hypertension (with or without cardiovascular disease)?

22 **2 Blood pressure targets for people with aortic aneurysm**

23 What are the optimal blood pressure targets in adults with hypertension and aortic
24 aneurysm, and does this vary by age?

25 **3 Blood pressure targets for people with prior ischaemic or 26 haemorrhagic stroke**

27 What are the optimal blood pressure targets in adults with prior ischaemic or
28 haemorrhagic stroke, and does this vary by age?

For a short explanation of why the committee made these recommendations see the [rationale and impact section on blood pressure targets for people with cardiovascular disease](#).

Full details of the evidence and the committee's discussion are in the [evidence review for blood pressure targets for people with cardiovascular disease](#).

1

2 **Rationale and impact**

3 This section briefly explains why the committee made the recommendations and how
4 they might affect practice.

5 **Blood pressure targets for people with cardiovascular disease**

6 [Recommendation 1.4.23](#)

7 **Why the committee made the recommendation**

8 The evidence did not show a robust or consistent clinical benefit from using lower
9 blood pressure targets for people with cardiovascular disease compared with
10 standard blood pressure targets.

11 The vast majority of people in the control arms of the studies achieved blood
12 pressures well below 140/90 mmHg. In the committee's experience of practice, some
13 people with hypertension can have their blood pressure maintained at 140/90
14 mmHg, rather than below this level. To address this issue, the committee amended
15 the 2019 recommendations on blood pressure targets to emphasise the importance
16 of reducing and maintaining blood pressure below 140/90 mmHg.

17 The committee made research recommendations for:

- 18 • [People aged over 80](#), because there was no evidence specifically for this group.
19 The only evidence was from mixed age groups, and the committee agreed that
20 this evidence was too limited to support a new practice recommendation.
- 21 • [People with aortic aneurysm](#), because there was no evidence for this group.
- 22 • [People who have had a stroke](#), because there was limited evidence that lower
23 blood pressure targets reduced the risk of future strokes, but there was also

1 evidence on the possible harms of lower targets. Evidence for both potential
2 benefit or harm was too limited to inform a recommendation.

3 **How the recommendations might affect practice**

4 The new recommendation reflects current practice for most types of cardiovascular
5 disease, so there should be no change in practice or increase in resource use.

6 The Royal College of Physicians Intercollegiate Stroke Working Party guideline
7 recommends a lower blood pressure target for people after stroke. However, the
8 national quality indicators used in primary care do not use a lower blood pressure
9 target for people with cardiovascular disease (including stroke and transient
10 ischaemic attack).

11 [Return to recommendations](#)

12 **Choosing antihypertensive drug treatment for people with** 13 **cardiovascular disease**

14 [Recommendation 1.4.30](#)

15 **Why the committee made the recommendation**

16 New evidence in this area was not reviewed as part of the 2021 update. Instead, the
17 evidence from previous versions of the guideline was re-assessed to look at
18 outcomes for people with cardiovascular disease. Only evidence up to 2010 was re-
19 analysed, because the 2019 update did not review evidence for people with
20 cardiovascular disease.

21 There was no difference in clinically relevant outcomes between people with and
22 without cardiovascular disease.

23 Evidence was limited for people with stroke, transient ischaemic attack, or coronary
24 artery disease. This evidence did not cover enough treatment comparisons to allow
25 the committee to draw any firm conclusions.

26 There are NICE guidelines on [acute coronary syndromes](#) and [chronic heart failure](#),
27 and these guidelines make recommendations on drug treatment that overlap with
28 treatment for hypertension. To avoid confusion over the treatment pathway, the

1 committee highlighted that these condition-specific recommendations should be
2 applied first (for example, when prescribing an ACE inhibitor or an ARB for
3 secondary prevention of myocardial infarction).

4 **How the recommendations might affect practice**

5 The recommendation reflects current practice for most types of cardiovascular
6 disease.

7 The committee were aware that after a stroke the thiazide-like diuretic indapamide is
8 sometimes used first, rather than a calcium channel blocker. However, it is unclear
9 how common this is. As people with cardiovascular disease are commonly
10 prescribed more than 1 antihypertensive drug, any impact on prescribing would be
11 limited.

12 [Return to recommendations](#)

13 **Update information**

14 **December 2021**

15 We have reviewed the evidence on blood pressure targets for people with
16 cardiovascular disease, and made a new recommendation. This is marked **[2021]**.

17 We have also re-assessed the evidence on antihypertensive drug treatment, and
18 made a new recommendation for people with cardiovascular disease. This is marked
19 **[2021]**.

20 For recommendations shaded in grey and ending **[2019, amended 2021]**, we have
21 not reviewed the evidence for people without cardiovascular disease. We have made
22 minor changes to the wording of the recommendations without changing the intent.

23 See the [rationale](#) for an explanation of these changes.

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