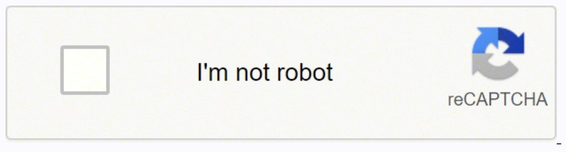

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Definition of HTN according to different BP measurement…

Category	SBP (mmHg)		DBP (mmHg)
Office BP[a]	≥140	and/or	≥90
Ambulatory BP			
Daytime (or awake) mean	≥135	and/or	≥85
Night-time (or asleep) mean	≥120	and/or	≥70
24 h mean	≥130	and/or	≥80
Home BP mean	≥135	and/or	≥85

Table 1 ESC Classes of recommendations

Classes of recommendations	Definition	Suggested wording to use
Class I	Evidence and/or general agreement that a given treatment or procedure is beneficial, useful, effective.	Is recommended/is indicated
Class II	Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of the given treatment or procedure.	
Class IIa	*Weight of evidence/opinion is in favour of usefulness/efficacy.*	Should be considered
Class IIb	*Usefulness/efficacy is less well established by evidence/opinion.*	May be considered
Class III	Evidence or general agreement that the given treatment or procedure is not useful/effective, and in some cases may be harmful.	Is not recommended

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Table 2 ESC Levels of evidence

Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Level of evidence C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

ESC 2018

These 2018 ESC/ESH Guidelines for the management of arterial hypertension are designed for adults with hypertension, i.e. aged ≥18 years. The purpose of the review and update of these Guidelines was to evaluate and incorporate new evidence into the Guideline recommendations. The specific aims of these Guidelines were to produce pragmatic recommendations to improve the detection and treatment of hypertension, and to improve the poor rates of BP control by promoting simple and effective treatment strategies.

These joint 2018 Guidelines follow the same principles upon which a series of hypertension Guidelines were jointly issued by the two societies in 2003, 2007, and 2013. These fundamental principles are: (i) to base recommendations on properly conducted studies, identified from an extensive review of the literature; (ii) to give the highest priority to data from randomized controlled trials (RCTs); (iii) to also consider well-conducted meta-analyses of RCTs as strong evidence (this contrasts with network meta-analyses, which we do not consider to have the same level of evidence because many of the comparisons are non-randomized); (iv) to recognize that RCTs cannot address many important questions related to the diagnosis, risk stratification, and treatment of hypertension, which can be addressed by observational or registry-based studies of appropriate scientific calibre; (v) to grade the level of scientific evidence and the strength of recommendations according to ESC recommendations (see section 1); (vi) to recognize that opinions may differ on key recommendations, which are resolved by voting; and (vii) to recognize that there are circumstances in which there is inadequate or no evidence, but that the question is important for clinical practice and cannot be ignored. In these circumstances, we resort to pragmatic expert opinion and endeavour to explain its rationale.

Each member of the Task Force was assigned specific writing tasks, which were reviewed by section co-ordinators and then by the two chairs, one appointed by the ESC and the other by the ESH. The text was developed over approximately 24 months, during which the Task Force members met collectively and corresponded intensively with one another between meetings. Before publication, the document was reviewed by European reviewers selected by the ESC and ESH, and by representatives of ESC National Cardiac Societies and ESH National Hypertension Societies.

ESC European Society of Cardiology European Heart Journal (2018) 00, 1–98 doi:10.1093/eurheartj/ehy339

ESC/ESH GUIDELINES

2018 ESC/ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH)

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† Professor Zanchetti died towards the end of the development of these Guidelines, in March 2018. He contributed fully to the development of these Guidelines, as a member of the Guidelines' Task Force and as a section co-ordinator. He will be sadly missed by colleagues and friends.

The two chairpersons contributed equally to the document.

ESC Committee for Practice Guidelines (CPG), European Society of Hypertension (ESH) Council, ESC National Cardiac Societies having participated in the review process, ESH National Hypertension Societies having participated in the review process: listed in the Appendix.

ESC entities having participated in the development of this document:

Associations: European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Association of Percutaneous Cardiovascular Interventions (EAPCI), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA).

Councils: Council for Cardiology Practice, Council on Cardiovascular Nursing and Allied Professions, Council on Cardiovascular Primary Care, Council on Hypertension, Council on Stroke.

Working Groups: Cardiovascular Pharmacotherapy, Coronary Pathophysiology and Microcirculation, e-Cardiology.

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Very high risk	**People with any of the following:**
	Documented CVD, either clinical or unequivocal on imaging. • **Clinical CVD** includes acute myocardial infarction, acute coronary syndrome, coronary or other arterial revascularization, stroke, TIA, aortic aneurysm, and PAD • **Unequivocal documented CVD on imaging** includes significant plaque (i.e. ≥50% stenosis) on angiography or ultrasound; it does not include increase in carotid intima-media thickness • **Diabetes mellitus with target organ damage**, e.g. proteinuria or with a major risk factor such as grade 3 hypertension or hypercholesterolemia • **Severe CKD** (eGFR <30 mL/min/1.73 m^2) • **A calculated 10 year SCORE of ≥10%**
High risk	**People with any of the following:** • **Marked elevation of a single risk factor**, particularly cholesterol >8 mmol/l (>310 mg/dl), e.g. familial hypercholesterolemia or grade 3 hypertension (BP ≥180/110 mmHg) • **Most other people with diabetes mellitus** (except some young people with type 1 diabetes mellitus and without major risk factors, who may be at moderate risk)
	Hypertensive LVH
	Moderate CKD eGFR 30-59 ml/min/1.73 m^2)
	A calculated 10 year SCORE of 5-10%
Moderate risk	**People with:** • **A calculated 10 year SCORE of ≥1 to <5%** • **Grade 2 hypertension** • **Many middle-aged people belong to this category**
Low risk	**People with:** • **A calculated 10 year SCORE of <1%**

BP treatment targets in older patients (65–80 years)	**BP treatment targets in older patients (65–80 years)**
An SBP target of between 140–150 mmHg is recommended for older patients (65–80 years).	In older patients (≥65 years), it is recommended that SBP should be targeted to a BP range of 130–139 mmHg.
BP treatment targets in patients aged over 80 years	**BP treatment targets in patients aged over 80 years**
An SBP target between 140–150 mmHg should be considered in people older than 80 years, with an initial SBP ≥160 mmHg, provided that they are in good physical and mental condition.	An SBP target range of 130–139 mmHg is recommended for people older than 80 years, if tolerated.
DBP targets	**DBP targets**
A DBP target of <90 mmHg is always recommended, except in patients with diabetes, in whom values <85 mmHg are recommended.	A DBP target of <80 mmHg should be considered for all hypertensive patients, independent of the level of risk and comorbidities.
Initiation of drug treatment	**Initiation of drug treatment**
Initiation of antihypertensive therapy with a two-drug combination may be considered in patients with markedly high baseline BP or at high CV risk.	It is recommended to initiate an antihypertensive treatment with a two-drug combination, preferably in a SPC. The exceptions are frail older patients and those at low risk and with grade 1 hypertension (particularly if SBP is <150 mmHg).
Resistant hypertension	**Resistant hypertension**
Mineralocorticoid receptor antagonists, amiloride, and the alpha-1 blocker doxazosin should be considered if no contraindication exists.	Recommended treatment of resistant hypertension is the addition of low-dose spironolactone to existing treatment, or the addition of further diuretic therapy if intolerant to spironolactone, with either eplerenone, amiloride, higher-dose thiazide/thiazide-like diuretic or a loop diuretic, or the addition of bisoprolol or doxazosin.
Device-based therapy for hypertension	**Device-based therapy for hypertension**
In case of ineffectiveness of drug treatment, invasive procedures such as renal denervation and baroreceptor stimulation may be considered.	Use of device-based therapies is not recommended for the routine treatment of hypertension, unless in the context of clinical studies and RCTs, until further evidence regarding their safety and efficacy becomes available.

Recommendation Grading

	Grade I		Grade IIa		Grade IIb		Grade III

ABPM = ambulatory blood pressure monitoring; BP = blood pressure; CAD = coronary artery disease; CV = cardiovascular; CVD = cardiovascular disease; DBP = diastolic blood pressure; HBPM = home blood pressure monitoring; HMOD = hypertension-mediated organ damage; RCT = randomized controlled trial; SBP = systolic blood pressure; SPC = single-pill combination.

2018 esc/esh guidelines on the management of arterial hypertension.

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