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Key benefits

- short and interactive courses
- created by key medical experts
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¹ Stergiou, George S., et al. "2021 European Society of Hypertension practice guidelines for office and out-of-office blood pressure measurement." *Journal of Hypertension* 39.7 (2021): 1293-1302.

² Bryan Williams, Giuseppe Mancia, Wilko Spiering, Enrico Agabiti, Michel Azizi. "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)." *European Heart Journal* (2018): 3021-3204.

³ Everett, Bethany, and Anna Zajacova. "Gender differences in hypertension and hypertension awareness among young adults." *Biodemography and social biology* 61.1 (2015): 1-17.

⁴ Wei YC, George NI, Chang CW, et al. Assessing sex differences in the risk of cardiovascular disease and mortality per increment in systolic blood pressure: a systematic review and meta-analysis of follow-up studies in the United States. 2017;12:e0170218.

⁵ Mozaffarian, Dariush, et al. "Heart disease and stroke statistics—2015 update: a report from the American Heart Association." *Circulation* 131.4 (2015): e29-e322.

⁶ Pfeffer, Marc A. "Heart failure and hypertension: importance of prevention." *Medical Clinics* 101.1 (2017): 19-28.

⁷ Sources: U.S. Centers for Disease Control and Prevention; and American Heart Association

⁸ Etehad, Dena, et al. "Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis." *The Lancet* 387.10022 (2016): 957-967.

⁹ Verdecchia, Paolo, Fabio Angeli, and Gianpaolo Reboldi. "Hypertension and atrial fibrillation: doubts and certainties from basic and clinical studies." *Circulation Research* 122.2 (2018): 352-368.

¹⁰ Williams, Bryan, et al. "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)." *European heart journal* 39.33 (2018)

¹¹ Cappuccio, Francesco P. "The role of nocturnal blood pressure and sleep quality in hypertension management." *European Cardiology Review* 15 (2020).

¹² Mantena, S. and Keshavjee, S. (2021). Strengthening healthcare delivery with remote patient monitoring in the time of COVID-19. *BMJ Health & Care Informatics*, 28(1), p.e100302. doi:10.1136/bmjhci-2020-100302.

Hypertension: the need for prevention and control

Hypertension

Hypertension is the leading modifiable risk factor for morbidity and mortality worldwide. Inadequate measurement or inaccurate blood pressure devices can lead to¹:

- over- and underdiagnosis
- unnecessary treatment
- risks of preventable cardiovascular diseases

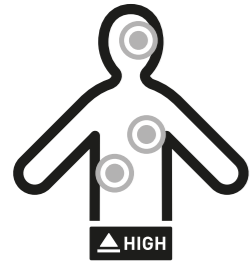
Since most patients **do not** have any symptoms, the most reliable method to determine hypertension is by (preventively) monitoring it.

Classification of Hypertension by the ESC and ESH²

Category	SBP (mmHg)	and/or	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
24h mean	≥130	and/or	≥80
Home BP mean	≥135	and/or	≥85 ²

BP, blood pressure; DBP, diastolic blood pressure; SBP, systolic blood pressure.
^aRefers to conventional office BP rather than unattended office BP.

Consequences: the facts



- **77% of people** who have a first **stroke** have hypertension⁵
- Approximately **1 out of every 3 to 4 adults** develop **heart failure** when systolic blood pressure is >160 mmHg⁶
- **69% of people** who have a first **heart attack** have hypertension⁵
- Hypertension is the **second-leading cause of kidney failure**⁵

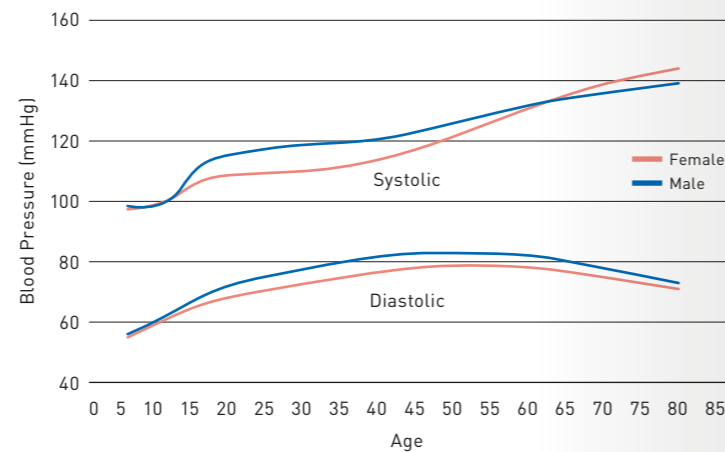


Almost **1 out of 2 people** with high blood pressure **do not** have their condition under control.⁷

Gender differences

The prevalence of hypertension between men and women varies during the life course. At the age of late twenties, around **27% of men** and **12% of women** are hypertensive. A turning point comes later in life with more women being hypertensive due to menopause and hormonal changes.³

Furthermore, there is a difference in **% rise in CVD per 10mmHg increase** in systolic blood pressure with **15% in males** and **25% in females**.⁴



Positive results

Significant results with every **10 mmHg systolic reduction**⁸:

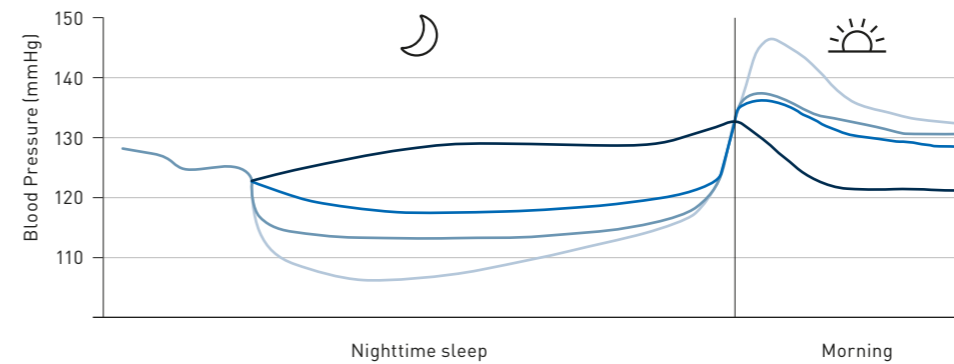
- 20% ↓ in major CVD events
- 17% ↓ in coronary heart disease
- 27% ↓ in stroke
- 28% ↓ in heart failure
- 13% ↓ in all-cause mortality

Nocturnal hypertension

According to the ESC/ESH guidelines the threshold for nocturnal hypertension is **≥120/70 mmHg at night**.¹⁰

Nocturnal blood pressure is a **better predictor** of cardiovascular events and organ damage than daytime blood pressure in hypertensive patients.¹¹

Dipping patterns and cardiovascular risks



Reverse dipper or riser (<0% dip)

- Increased risk of CV death and heart failure
- Have twice the risk of stroke compared to dippers

Non-dipper (<10% dip)

- Increased risk of future cerebrovascular events, stroke, and heart failure
- More cardiovascular target organ damage than dippers

Dipper (10% > <20% dip) = normal

Extreme dipper (20% > dip)

- Increased risk of silent myocardial ischemia and silent cerebral infarcts
- Increased risk of stroke due to exaggerated morning surge in blood pressure

Importance of clinical validation

Clinical validation certifies the accuracy of blood pressure measurements by thorough testing. At OMRON we ensure all blood pressure monitors are clinically validated for accuracy.

A correct cuff size is essential for accurate measurements

Mid-arm circumference	Cuff type	Person
17-22 cm	small	Child or slim adult
22-32 cm	medium	Average adult
32-42 cm	large	Heavily muscled or obese

OMRON Intelli Wrap Cuff measures accurately in any position of your upper arm. Suitable for use on arms with a circumference of 22-42 cm.¹⁵



Home monitoring & OMRON connect

Patients with hypertension that monitor blood pressure at home and share results with their doctor achieve significantly better control of their blood pressure.¹²

OMRON connect is a free app that makes it easy for patients to record, view and wirelessly sync personal health data. Patients can set individual targets, such as blood pressure, weight, and track their progress over time.

OMRON products compatible with OMRON connect

OMRON Complete

A 2-in-1 home blood pressure monitor with 1-lead ECG function.



NightView

The first at-home wrist monitor designed to measure daytime and nighttime blood pressure.



EVOLV

Take accurate readings in any position around the upper arm. Validated for use in pregnancy and diabetes.



Relationship with Atrial Fibrillation (AFib)

Hypertension is present in **60% to 80%** of AFib cases.⁹ Simultaneously monitoring blood pressure and ECG is important for reducing morbidity and mortality due to AFib.

