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Paolo Palatini, Sverre E. Kjeldsen & Michel Burnier

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## Orthostatic hypertension: the forgotten phenotype

Paolo Palatini<sup>a</sup> , Sverre E. Kjeldsen<sup>b</sup>  and Michel Burnier<sup>c</sup> 

<sup>a</sup>Department of Medicine, University of Padova, Studium Patavinum, Padova, Italy; <sup>b</sup>Departments of Cardiology and Nephrology, University of Oslo, Institute for Clinical Medicine, and Ullevaal Hospital, Oslo, Norway; <sup>c</sup>Faculty of Biology and Medicine, University of Lausanne, Lausanne, Switzerland

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In the 2024 European Society of Cardiology Hypertension Guidelines [1] important scientific topics have been omitted. In particular, orthostatic hypertension was completely forgotten. The measurement of blood pressure (BP) upon standing is recommended in hypertensive patients, especially in older institutionalized patients, to detect a possible excessive BP fall when changing from the lying/sitting to the upright/standing position. However, in the past few years evidence has accumulated that also an Exaggerated BP Response To Standing (ERTS) is associated with an increased risk of adverse outcomes both in young and older individuals [2–4]. Such orthostatic hypertension has been found to be associated with increased risk of masked and sustained hypertension, hypertension-mediated organ damage, cardiovascular events, and mortality [2–4]. We concur that measurement of BP in the standing position is especially important in selected patients, and thus the clinician's goal should be the detection not only of orthostatic hypotension but also of orthostatic hypertension. In the Predictive Values of Blood Pressure and Arterial Stiffness in Institutionalized Very Aged Population study (PARTAGE), investigating an old and frail institutionalized population ( $\geq 80$  years), orthostatic hypertension (defined as an ERTS  $\geq 20$  mmHg systolic BP) was even more frequent than orthostatic hypotension (28% vs 16%) [5]. In addition, the association with cardiovascular morbidity and mortality was apparently stronger for orthostatic hypertension ( $p=0.0085$ ) than for orthostatic hypotension ( $p=0.057$ , not significant). Similar results have been obtained in other studies of older people [2–4]. Based on such findings in different

cohorts, the American Autonomic Society [6], the Japanese Society of Hypertension [6], and the 2023 ESH Hypertension Guidelines [7] have recognised the clinical value of standing BP measurement also for the identification of individuals with orthostatic hypertension and this clinical condition was included among the hypertension phenotypes [6–8]. To detect a possible ERTS, it is recommended [6–8] that BP should be measured when upright/standing in all individuals at least at the initial visit. Ignoring the risk associated with orthostatic hypertension may lead to incomplete assessment by the clinician with possible long-term serious consequences for some patients.

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### ORCID

Paolo Palatini  <http://orcid.org/0000-0001-5402-4946>  
Sverre E. Kjeldsen  <http://orcid.org/0000-0003-2389-0272>  
Michel Burnier  <http://orcid.org/0000-0003-1283-8487>

**CONTACT** Paolo Palatini  [palatini@unipd.it](mailto:palatini@unipd.it)  Department of Medicine, University of Padova, Studium Patavinum, Padova, Italy

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## References

- [1] McEvoy JW, McCarthy CP, Bruno RM, et al. 2024 ESC Guidelines for the management of elevated blood pressure and hypertension: Developed by the task force on the management of elevated blood pressure and hypertension of the European Society of Cardiology (ESC) and endorsed by the European Society of Endocrinology (ESE) and the European Stroke Organisation (ESO). *Eur Heart J*. 2024;45(38):3912–4018. doi: [10.1093/eurheartj/ehae178](https://doi.org/10.1093/eurheartj/ehae178).
- [2] Jordan J, Ricci F, Hoffmann F, et al. Orthostatic hypertension: critical appraisal of an overlooked condition. *Hypertension*. 2020;75(5):1151–1158. doi: [10.1161/HYPERTENSIONAHA.120.14340](https://doi.org/10.1161/HYPERTENSIONAHA.120.14340).
- [3] Pasdar Z, De Paola L, Carter B, et al. Orthostatic hypertension and major adverse events: a systematic review and meta-analysis. *Eur J Prev Cardiol*. 2023;30(10):1028–1038. doi: [10.1093/eurjpc/zwad158](https://doi.org/10.1093/eurjpc/zwad158).
- [4] Palatini P. Orthostatic hypertension: a newcomer among the hypertension phenotypes. *Hypertension*. 2023;80(10):1993–2002. doi: [10.1161/HYPERTENSIONAHA.123.21537](https://doi.org/10.1161/HYPERTENSIONAHA.123.21537).
- [5] Agnoletti D, Valbusa F, Labat C, et al. Evidence for a prognostic role of orthostatic hypertension on survival in a very old institutionalized . *Hypertension*. 2016;67(1):191–196. doi: [10.1161/HYPERTENSIONAHA.115.06386](https://doi.org/10.1161/HYPERTENSIONAHA.115.06386).
- [6] Jordan J, Biaggioni I, Kotsis V, et al. Consensus statement on the definition of orthostatic hypertension endorsed by the American Autonomic Society and the Japanese Society of Hypertension. *Clin Auton Res*. 2023;33(1):69–73. doi: [10.1007/s10286-022-00897-8](https://doi.org/10.1007/s10286-022-00897-8).
- [7] Mancia G, Kreutz R, Brunström M, et al. 2023 ESH Guidelines for the management of arterial hypertension. The task force for the management of arterial hypertension of the European Society of Hypertension: endorsed by the International Society of Hypertension (ISH) and the European Renal Association (ERA). *J Hypertens*. 2023;41:1874–2071.
- [8] Palatini P, Kollias A, Saladini F, et al. Assessment and management of exaggerated blood pressure response to standing and orthostatic hypertension: consensus statement by the European Society of Hypertension Working Group on Blood Pressure Monitoring and Cardiovascular Variability. *J Hypertens*. 2024;42(6):939–947. doi: [10.1097/HJH.0000000000003704](https://doi.org/10.1097/HJH.0000000000003704).