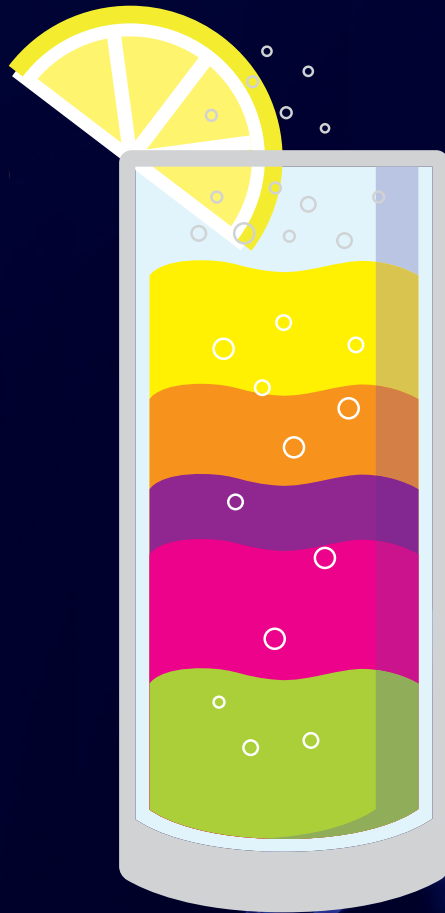


What's your blend?



Hemodynamic phenotypes – a new way of precision medicine in hypertensive patients.

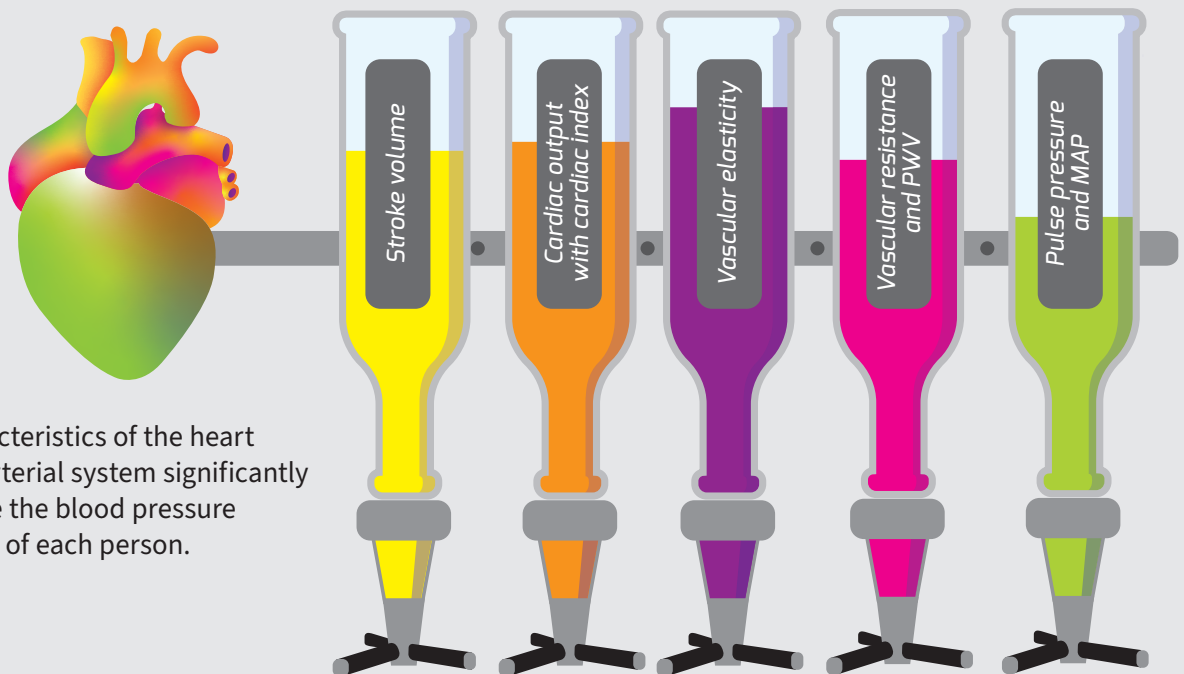
NEW: hemodynamic phenotypes

Tracking down the cause of hypertension!

Arterial hypertension varies from patient to patient. Our new, clinically validated phenotype analysis provides, for the first time, cardiovascular parameters derived from a 24-hour ABPM. These form the basis of the identification of five hemodynamic phenotypes which provide indications of the cause of hypertension. If this is known, patients can be treated specifically.

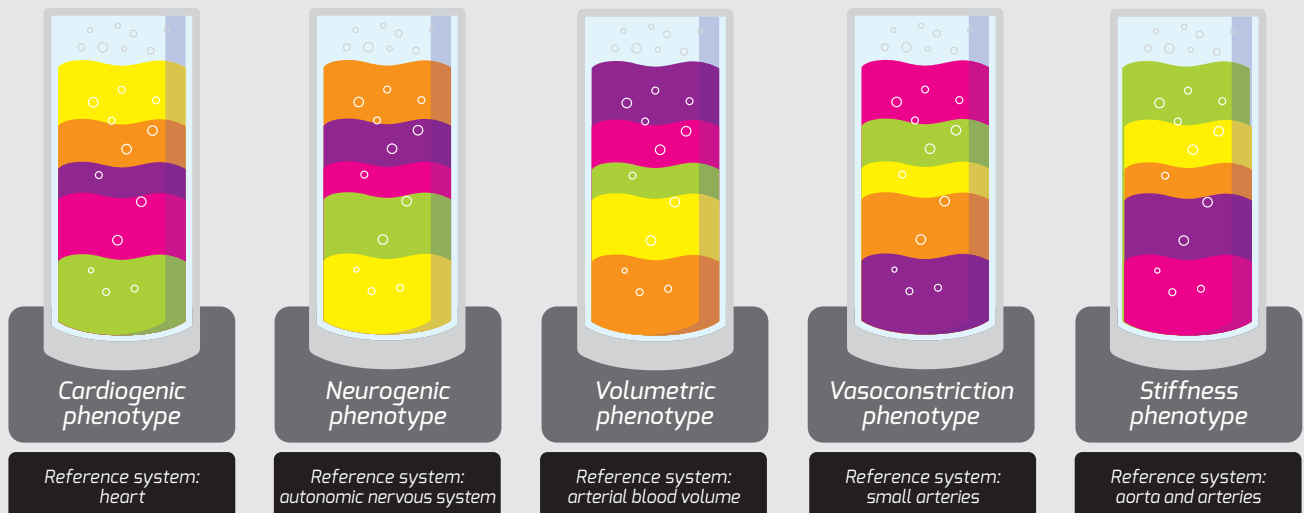
Hypertension hemodynamics with ABPM

Each phenotype is blended from five “ingredients” (cardiovascular parameters):



The characteristics of the heart and the arterial system significantly determine the blood pressure behaviour of each person.

The “blends” of cardiovascular parameters result in five hemodynamic phenotypes:





Cardiogenic phenotype

- Stroke volume and cardiac index high
- Heart rate frequently elevated
- Vascular resistance and afferent baroreflex activity normal to reduced



Neurogenic phenotype

- Sympathetic activity index high
- Stroke volume, cardiac index and vascular resistance slightly increased
- Pulse pressure and pulse wave velocity normal
- Afferent baroreflex activity low



Volumetric phenotype

- Stroke volume and pulse pressure significantly increased
- Systemic vascular resistance frequently elevated
- Pulse wave velocity normal



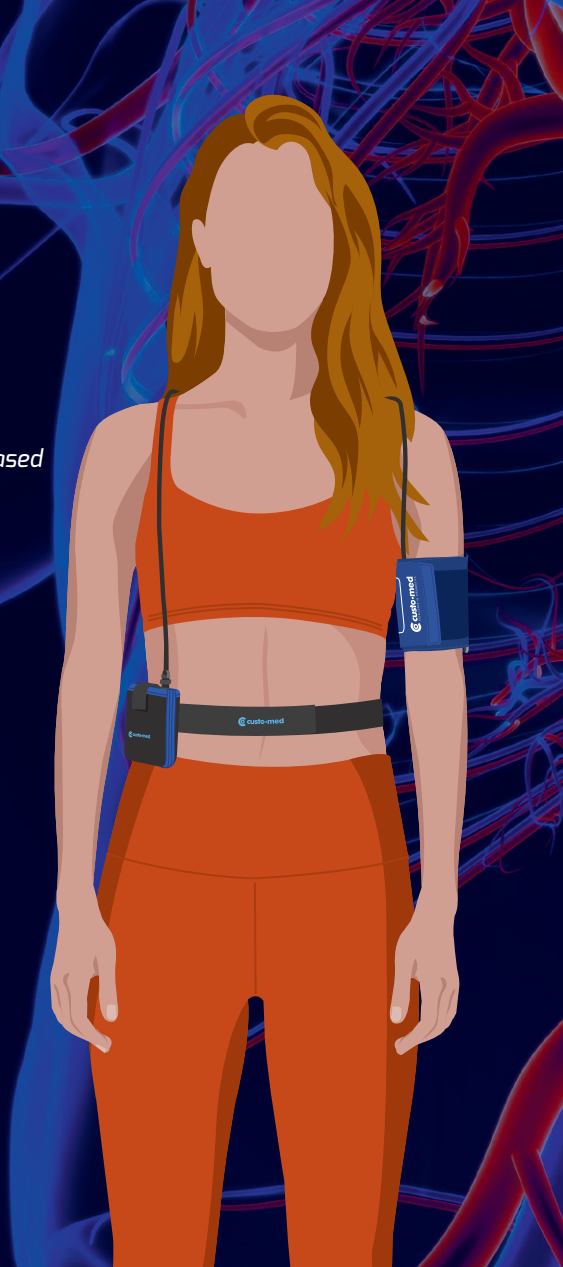
Vasoconstriction phenotype

- Systemic vascular resistance high
- Stroke volume and cardiac index normal
- Pulse wave velocity normal
- Pulse pressure and sympathetic activity index normal



Stiffness phenotype

- Pulse wave velocity and pulse pressure high
- Vascular resistance frequently elevated
- Stroke volume and cardiac index normal
- Sympathetic activity slightly increased
- Afferent baroreflex activity slightly decreased.



Hemodynamic phenotypes in custo diagnostic

The 24-hour ABPM is still the gold standard for guideline-compliant detection of hypertension. Targeted treatment is possible with the help of phenotype analysis, as this provides the physiological causes of hypertension. In custo diagnostic, the cardiovascular parameters are visualised, and the results of the ABPM and the phenotype analysis are described in detail.



Phenotype analysis – a validated procedure:

With the help of the 24-hour ABPM and **the software module Phenotypes**, it is possible to reliably determine stroke volume, cardiac output, arterial compliance and systemic vascular resistance*.

The applicability of the hemodynamic phenotypes in everyday clinical practice was validated in a cross-sectional study with approximately 7,500 patients.**

* Álvarez-Montoya, D., Madrid-Muñoz, C., Escobar-Robledo, E., Gallo-Villegas, J. and D. Aristizábal-Ocampo (2021): A novel method for the noninvasive estimation of cardiac output with brachial oscillometric blood pressure measurements through an assessment of arterial compliance. *Blood Pressure Monitoring* 26(6): 426-434

** Aristizábal-Ocampo, D., Álvarez-Montoya, D., Madrid-Muñoz, C., Fallon-Giraldo, S., Gallo-Villegas, J. (2023): Hemodynamic profiles of arterial hypertension with ambulatory blood pressure monitoring. *Hypertension Research* 46(6):1482-1492

Cardiopulmonary diagnostics for more than 40 years!

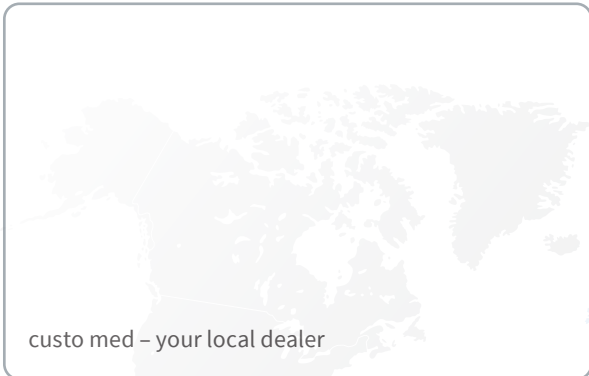
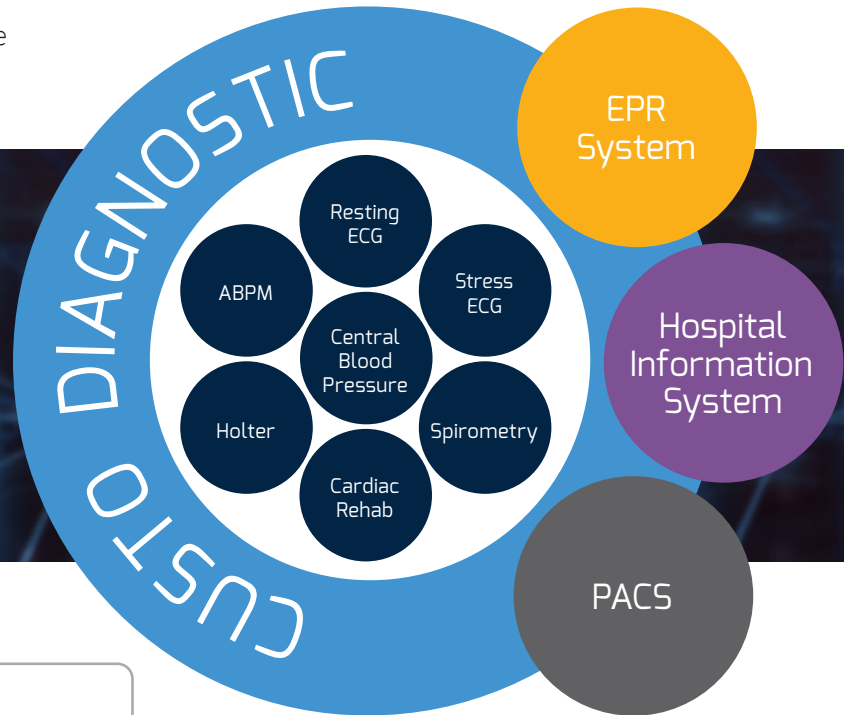
Since 1982, our brand has been representing innovative system solutions in cardiopulmonary diagnostics. In cooperation with committed and competent sales and service partners, we offer professional solutions taking account of your individual organisational circumstances and IT structures. No matter if your installation is based on a stationary or mobile system, a single-user workstation or multi-site network solution, in a doctor's office or in a hospital – your modular custo med system will be a profitable investment for the future.

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Contact:
custo med GmbH
Maria-Merian-Str. 6
85521 Ottobrunn
Germany

Phone: +49 89 71098 00
Fax: +49 89 71098 10
Web: www.customed.de
E-mail: info@customed.de

