WITHINGS

The Menopause Transition

2026 Report

What 2.5 million women reveal about the menopause transition — and why awareness, understanding, and support can change everything.

APRIL 2026 · GLOBAL DATA REPORT · FIRST EDITION

KEY FINDINGS

What 2.5 Million Women *Reveal*

A cross-sectional analysis across 11 countries, 8 health domains, and 6 reproductive stages — the world's largest real-world dataset on the menopause transition. These patterns, observed across age groups, are not destiny — they are an invitation to act earlier.

+58%

Visceral fat surge

The fat we can't see — wrapped around organs — surges while weight barely moves (+1.3 kg)

4×

Atrial fibrillation rise

Irregular heart rhythm prevalence increases fourfold across the menopause transition

+9.3%

Relative fat mass increase

Fat mass rises from 32.1% to 35.1% of body weight — while muscle declines almost symmetrically

−33%

Heart rate variability decline

Autonomic nervous system resilience drops by a third — a key marker of cardiovascular aging

+27%

Arterial stiffness increase

Arteries stiffen progressively, approaching established cardiovascular risk thresholds

44.5%

Don't recognize it until 50+

Nearly half of women don't declare perimenopause in-app until a decade after measurable changes begin

Read on to understand what's changing — and what every woman can do about it.

Foreword

Every year, millions of women enter a biological transition that reshapes nearly every system in their body. Yet there is still remarkably little information, understanding, and support available for what is one of the most significant health transitions in a woman's life. *Women deserve better.*

This report is a cross-sectional analysis drawn from the largest real-world wearable dataset ever assembled on the menopause transition. It is not a clinical study. It is a population-scale mirror reflecting what connected health devices observe when women go about their daily lives.

What we found challenges the conventional understanding of menopause as a *singular event*. The data reveals a gradual, multi-system transformation that begins in a woman's early 40s and unfolds across two decades — and it highlights opportunities for awareness, prevention, and proactive care at every stage.

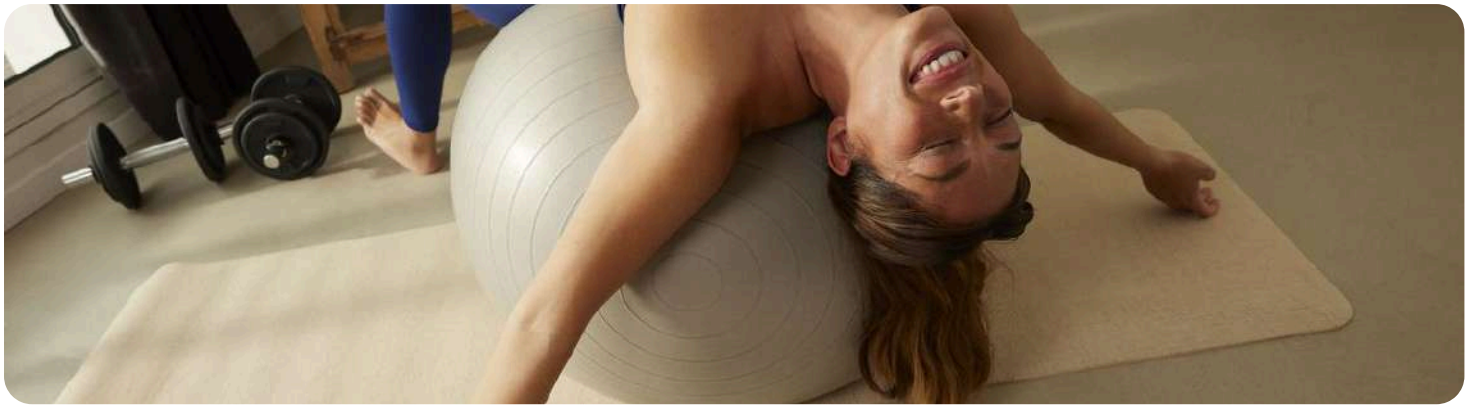
At Withings, we believe that **visibility is the first step toward agency**. When women can see what is changing — through daily measurements that capture not just a number, but a *trajectory* — they can act earlier, advocate for themselves, and make informed decisions about their health. That is why we invest in research, develop features to accompany women through this transition, and publish reports like this one — to help close the information gap.

This is the first edition of what we intend to be an annual report. We publish it as an invitation: to raise awareness, to close the information gap, and to ensure every woman has the support and understanding she deserves throughout this transition.

Aline Criton

Chief Regulatory and Clinical Affairs Officer, Withings

The *Invisible* Transition



Claire steps on her scale every morning. At 51, her weight has barely moved — 70 kilograms, give or take. Her doctor tells her she's fine. But underneath that number, something has been changing for *nearly a decade*.

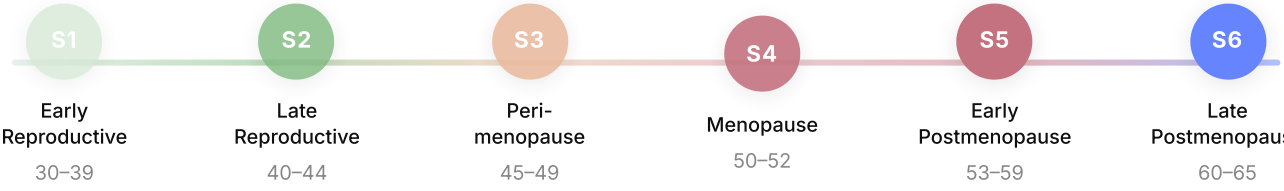
Her fat mass has risen. Her muscle mass has declined. Her heart rate variability has shifted. Her blood pressure has been inching upward. These changes are part of a natural biological transition — but without the right information, most women don't know they're happening. *And that's the gap we want to close.*

Claire is not a real person. But her data profile describes the median woman in this cross-sectional analysis — the world's largest real-world dataset on the menopause transition, spanning 2.5 million Withings users across 11 countries.

2.5M	11	8	6
women tracked	countries	health domains	reproductive stages

How we define the stages

Inspired by the STRAW+10 framework, we define 6 reproductive stages using age-based proxies. These approximate age windows are derived from STRAW+10's estimated stage durations combined with epidemiological definitions — most notably, the average European menopause age of 51 years as defined by EMAS.[1,2] All findings in this report are cross-sectional: they represent differences observed between age groups at one point in time, not changes tracked within individual women.



The Body Beneath *the Number*

The most counterintuitive finding: median weight barely differs across age groups spanning the menopause transition (+1.3 kg). But body composition tells a *completely different story*.

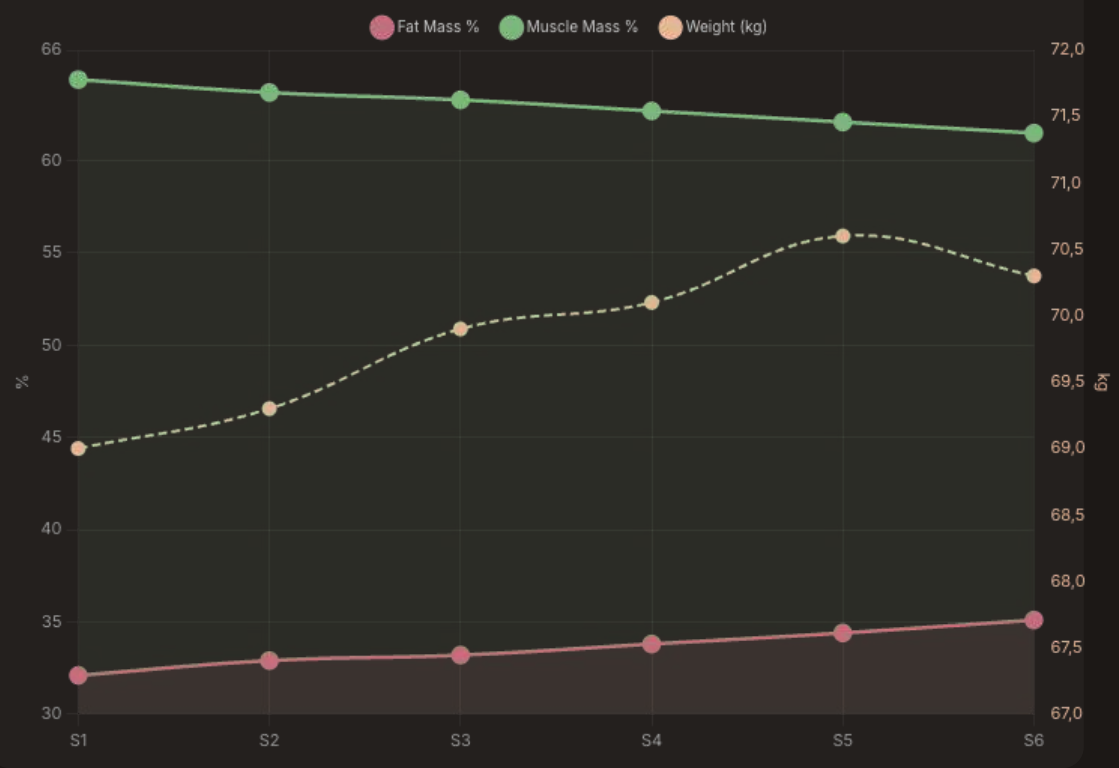
+9.3%
relative fat mass increase
32.1% → 35.1% of body weight

−4.5%
relative muscle mass decline
64.4% → 61.5% of body weight

+58%
visceral fat surge
while weight changes only 1.3 kg

This is *body recomposition* — a fundamental reshuffling of what the body is made of. Estrogen plays a central role in directing where the body stores fat, preferring subcutaneous storage during reproductive years. As estrogen declines, fat storage shifts inward toward the viscera, while muscle mass erodes.[3] Across age groups, each percentage point of higher fat mass corresponds to nearly one point of lower muscle mass — a near-perfect 1:1 pattern observed in every country. Visceral fat is also the strongest cross-country predictor of arterial stiffening. The body's composition shifts from within, even as the number on the scale stays reassuringly stable. But these patterns are not inevitable: resistance training serves double duty — preserving muscle while limiting the inward fat shift — and is one of the most effective lifestyle interventions available during this period.

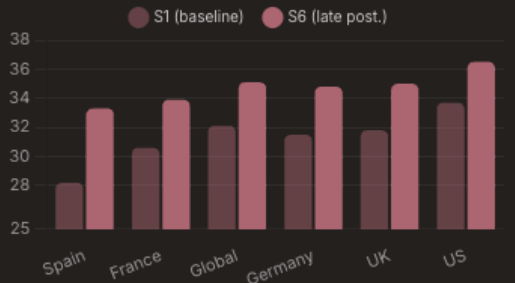
FIG. 1 — BODY COMPOSITION ACROSS REPRODUCTIVE STAGES (GLOBAL, WOMEN)



The quiet shift: bone mass

Our data shows 4.4% lower relative bone mass in late postmenopausal women compared to those in early reproductive years — a pattern observed in every country studied. As estrogen declines, bone resorption outpaces formation, making this a critical window for monitoring and prevention. Weight-bearing exercise, adequate calcium and vitamin D intake are among the most effective tools to slow this process.

FIG. 2 — FAT MASS % BY COUNTRY (WOMEN, S1 VS S6)



−4.4%
relative bone mass decline
across the menopause transition

1 in 3
women over 50 will experience an osteoporotic fracture[11]

+1.3 kg
total weight change — masking the recomposition happening inside

When Hearts *Converge*

Cardiovascular disease is the #1 cause of death in women worldwide — yet it remains underrecognized and undertreated. During reproductive years, estrogen promotes vasodilation and maintains favorable lipid profiles. As it declines, these protections diminish — and women's cardiovascular risk profile gradually converges with men's.[4] But up to 70% of cardiovascular risk factors at menopause are modifiable — through physical activity, nutrition, stress management, and medical care when needed.[13] Recognizing the risk is the first step; acting on it is where outcomes change.

AFib Atrial Fibrillation — an irregular cardiac rhythm associated with elevated stroke risk

PWV Pulse Wave Velocity — a clinical marker of arterial stiffness and vascular aging

HRV Heart Rate Variability — a measure of autonomic nervous system adaptability

A signal worth knowing about

Vasomotor symptoms — hot flashes and night sweats — are among the most recognized signs of the menopause transition. Beyond their impact on daily comfort and sleep, research suggests they are associated with a 70% increased risk of cardiovascular disease — making them worth discussing with a healthcare provider.[12]

4×
AFib prevalence rise
2.6% at S1 → 10.5% at S6[6]

+4 mmHg
Systolic BP rise
S1 to S6 — narrowing the gap with men

+27%
PWV increase
Arterial stiffness approaches risk thresholds[5]

−33%
HRV decline
43 → 29 ms, S1 to S6[7]

FIG. 3 — SYSTOLIC BLOOD PRESSURE (BP): WOMEN VS MEN (GLOBAL & US, MMHG)

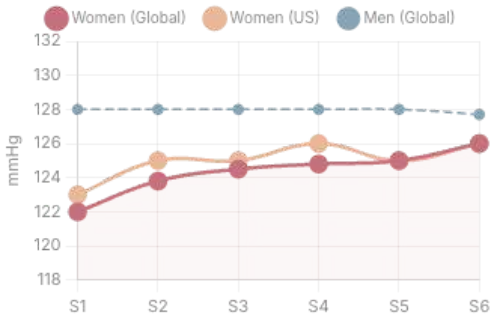


FIG. 4 — ATRIAL FIBRILLATION (AFIB) PREVALENCE: GLOBAL VS US (WOMEN & MEN, %)

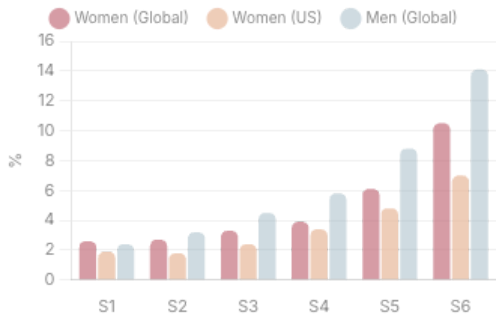


FIG. 5 — PULSE WAVE VELOCITY: WOMEN VS MEN (GLOBAL, M/S)[5]

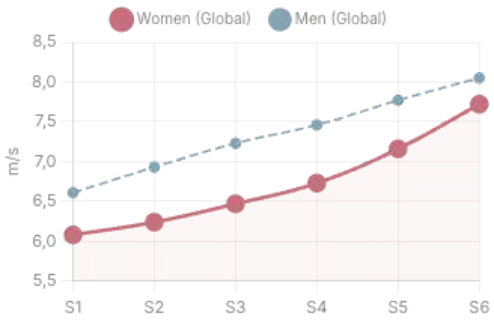
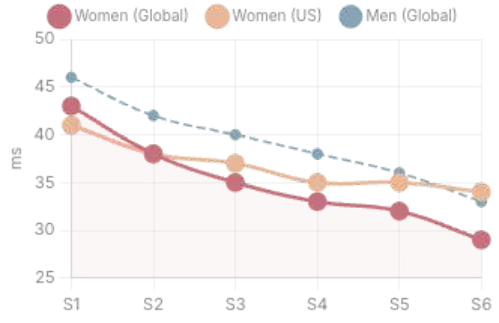


FIG. 6 — HRV: GLOBAL VS US (WOMEN & MEN, MS)[7]



The steepest cardiovascular acceleration occurs between Stage 4 and Stage 5 — the first years *after* menopause. Across our dataset, countries where blood pressure rises the most also show the highest AFib prevalence — suggesting that BP trajectory is an early warning for broader cardiac risk. This is why tracking blood pressure *trajectory* — not just a single reading — matters: it can reveal cardiovascular risk years before a clinical event, giving women and their doctors time to act.

The Sleep & *Energy* Toll

Sleep quality, daily activity, and body temperature all show meaningful differences across the menopause transition — reshaping how women experience *everyday energy and recovery*.[8]

Sleep disruption is partly driven by vasomotor symptoms — hot flashes and night sweats caused by the hypothalamus narrowing its thermoneutral zone as estrogen declines.[8] Meanwhile, average core body temperature decreases as progesterone — which plays a central role in thermoregulation — declines. The result: the temperature gap between women and men shrinks by 70% across the menopause transition.

US women consistently report worse sleep scores (3–5 points below global at every stage). French women, by contrast, maintain strong sleep scores (79–80) — yet their HRV drops by 35% across the menopause transition, the steepest decline in the dataset. This suggests that sleep quality alone may not reflect the full picture of what is changing internally.

FIG. 7 — SLEEP SCORE: GLOBAL VS US VS FRANCE (WOMEN)

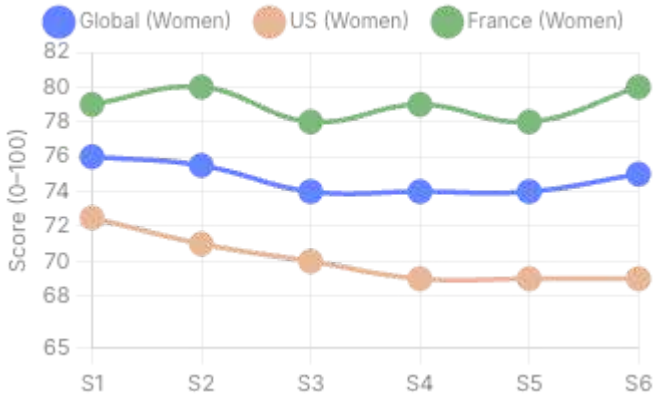


FIG. 8 — DAILY STEPS: WOMEN VS MEN, GLOBAL & US

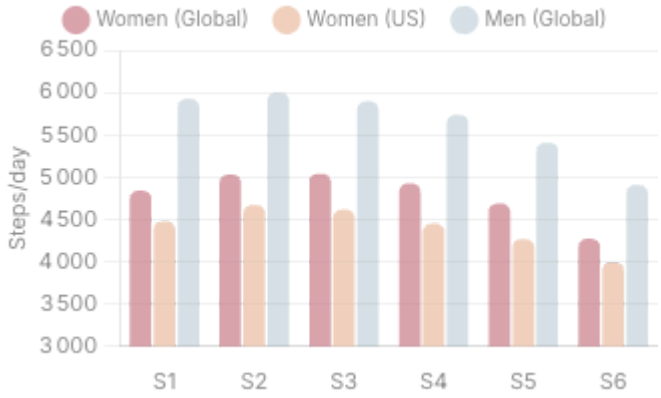
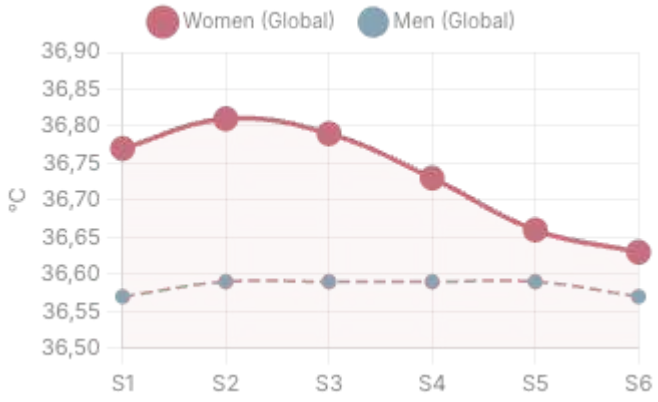


FIG. 9 — CORE BODY TEMPERATURE CONVERGENCE (GLOBAL, °C)[8]



> *Activity peaks at perimenopause — women in their late 40s walk more than those in their 30s — before step counts decline steadily through postmenopause. Sustaining that momentum is one of the most impactful things we can do: physical activity is associated with better cardiovascular, metabolic, bone, and cognitive outcomes throughout the transition.*

The *Recognition* Gap

A striking disconnect between when the body starts changing and when women *recognize* it.

44.5%

of women don't declare perimenopause in the Withings app until age 50+

Despite measurable changes beginning at Stage 2 (ages 40–44)

What data already shows at S2 (40–44)

- HRV declining (−5 ms from baseline)
- Fat mass rising (+0.8%)
- Blood pressure up (+1.8 mmHg systolic)
- Visceral fat increasing (+18%)

Perimenopause declaration in the Withings app

48	49
Median declaration age (US)	Median declaration age (Global)

European women tend to declare perimenopause later — in France, 48.4% declare at 50+, nearly 4 points above global. This may reflect lower awareness of the menopause transition in Europe compared to the US, where public conversation has advanced further.

> *Our bodies know before we do. Withings is committed to closing that gap — surfacing the earliest signals so every woman can start a conversation with her doctor, on her own terms, with data to back it up. Because understanding what's changing is only the beginning: the real impact comes from what you do with that knowledge — whether through lifestyle changes, proactive monitoring, or medical guidance.*

Regional *Spotlights*

Every country has a unique *menopause signature*. The same biological transition unfolds differently depending on baseline health, lifestyle, and environment.

France

The leanest start — and the best sleep

30.6% starting fat mass — lowest of 11 countries

79–80 sleep score maintained across all stages — highest in the dataset

+8.8 mmHg systolic BP rise — 2× the global average

~200,000 women

Germany

Consistent sleep, steepest autonomic decline

77 sleep score maintained across the transition

−39% HRV decline — steepest in the dataset

+31% arterial stiffness increase — fastest in the dataset

~150,000 women

United Kingdom

High activity, fast vascular convergence

Among the most active women in the European dataset

+7.0 mmHg systolic BP rise — second steepest after France

Strong step counts maintained through postmenopause

~180,000 women

United States

The mildest autonomic shift in the dataset

33.7% starting fat mass — highest in the dataset

−17% HRV decline — half the global rate

3.5× atrial fibrillation increase (1.9% → 7.0%)

~470,000 women · Largest cohort

Nordics

The most active and earliest to recognize — yet AFib exceeds global rates

6,123 steps at S4 in Sweden — highest for any women at any stage

47 median perimenopause declaration age in Norway — earliest in the dataset

11.8% AFib prevalence at S6 — above the 10.5% global average

~82,000 women · Finland, Denmark, Norway, Sweden

Australia

The steepest body recomposition in the dataset

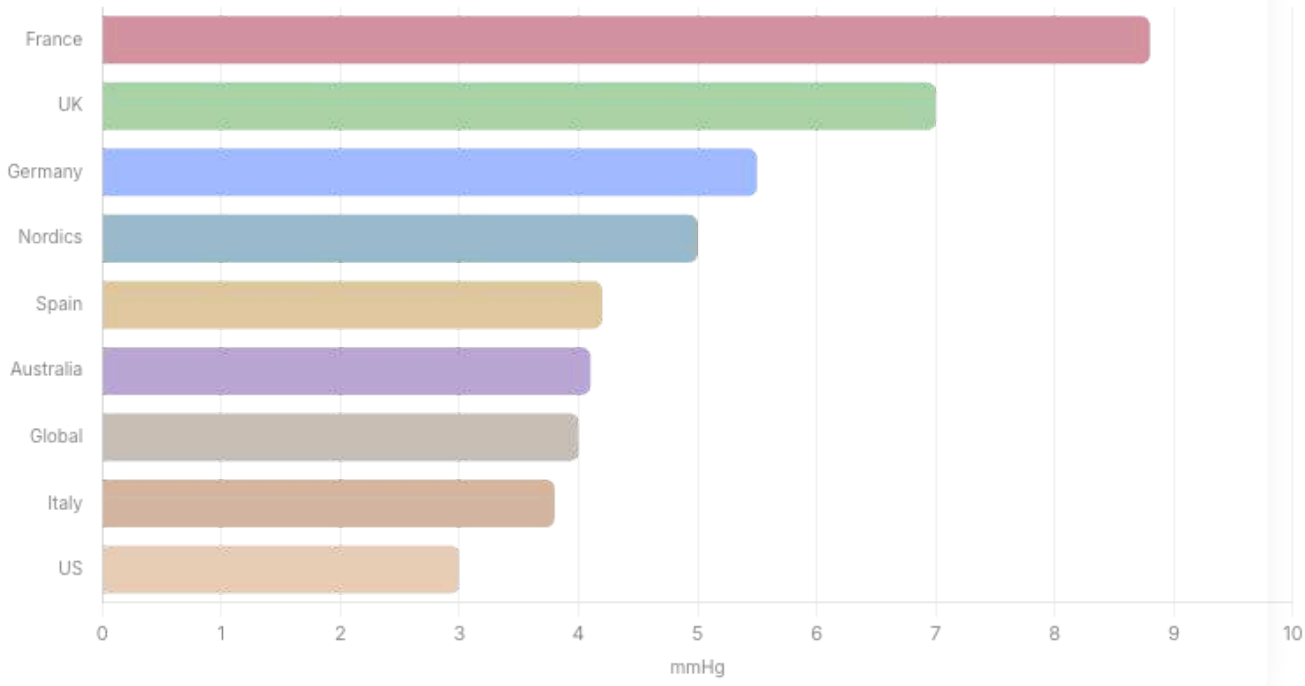
+3.6pp fat mass rise — 20% above the global average

−21% HRV decline — among the mildest, with a late-stage plateau

78% BP gender gap closure — fastest convergence in the study

~48,000 women

FIG. 10 — SYSTOLIC BP RISE ACROSS THE TRANSITION BY COUNTRY (WOMEN, MMHG)



The *Tools* Behind the Data

Every finding in this report originates from real-world measurements collected passively, at home, through connected health devices. Here are the instruments that made this research possible — and that continue to generate the data powering earlier awareness and prevention.

CARDIOMETABOLIC HEALTH

Body Scan

The body composition, visceral fat, bone mass, pulse wave velocity, and vascular age data in this report come from **Body Scan** — a connected health station with segmental body composition across 5 zones (tri-frequency BIA), 6-lead ECG with atrial fibrillation detection, and nerve health assessment. Its successor, **BodyScan 2**, coming soon, adds impedance cardiography, Heart Age, and Glycemic Resilience to push the assessment even further.

HEART & AUTONOMIC HEALTH

ScanWatch 2

HRV trajectories, AFib prevalence, skin temperature patterns, and sleep architecture findings were captured by **ScanWatch 2** — a medical-grade wrist device with continuous heart rate, ECG, SpO2, and 24/7 temperature monitoring. Its 35-day battery enables uninterrupted longitudinal tracking.

BLOOD PRESSURE & VASCULAR AGING

BPM Connect & BeamO

The blood pressure trajectories and pulse wave velocity data powering our cardiovascular findings rely on **BPM Connect** (ISO 81060-2 validated, triple-reading averaged) and **BeamO** — a 4-in-1 device combining ECG, SpO2, temperature, and digital stethoscope for a 60-second cardiovascular checkpoint.

CONNECTED HEALTH ECOSYSTEM

Withings Intelligence

By combining data from scales, watches, blood pressure monitors, and sleep trackers into a single longitudinal profile, the Withings ecosystem enables a uniquely holistic view of each user's health — the kind of cross-domain visibility that powers the correlations in this report. **Withings Intelligence** translates these connections into personalized insights and trends, helping women understand how body composition, cardiovascular, and sleep patterns relate to one another over time.

> *When women see what's changing, they can act earlier, advocate for themselves, and work with their doctors to build a personalized plan — combining lifestyle changes, proactive monitoring, and medical care when needed. That is the promise of connected health — and our commitment.*

Learn More About the Devices Behind This Study →

Methodology

Cross-sectional analysis of anonymized data from approximately 2.5 million Withings connected device users across 11 countries (US, France, Germany, UK, Spain, Italy, Sweden, Denmark, Norway, Finland, Australia), January 2025 – March 2026. Eight physiological domains: body composition, daily activity, sleep quality, heart rate variability, core body temperature, blood pressure, pulse wave velocity, and atrial fibrillation prevalence.

Reproductive stages (S1–S6) defined by age-based proxies inspired by STRAW+10, anchored on average European menopause age of 51 (EMAS). All findings represent between-cohort differences, not individual-level changes. Cohort sizes range from ~200,000–470,000 (body composition) to ~4,000–5,000 (blood pressure, PWV). All values are medians (P50). Withings users are self-selected and may not represent the general population. The data describes patterns and associations, not causes.

References

1 Harlow SD, Gass M, Hall JE, et al. Executive summary of the Stages of Reproductive Aging Workshop +10. *J Clin Endocrinol Metab.* 2012;97(4):1159-1168.

2 European Menopause and Andropause Society (EMAS). Menopause terminology and definitions. *Maturitas.* 2023.

3 Greendale GA, Sternfeld B, Huang M, et al. Changes in body composition and weight during the menopause transition. *JCI Insight.* 2019;4(5):e124865.

4 Mendelsohn ME, Karas RH. The protective effects of estrogen on the cardiovascular system. *N Engl J Med.* 1999;340(23):1801-1811.

5 Laurent S, Cockcroft J, Van Bortel L, et al. Expert consensus on arterial stiffness. *Eur Heart J.* 2006;27(21):2588-2605.

6 Magnani JW, Moser CB, Murabito JM, et al. Sex hormones, aging, and atrial fibrillation. *Circ Arrhythm Electrophysiol.* 2014;7(2):307-312.

7 Thayer JF, Yamamoto SS, Brosschot JF. Autonomic imbalance, HRV and cardiovascular disease risk. *Int J Cardiol.* 2010;141(2):122-131.

8 Baker FC, de Zambotti M, Colrain IM, Bei B. Sleep problems during the menopausal transition. *Nat Sci Sleep.* 2018;10:73-95.

9 Tchernof A, Després JP. Pathophysiology of human visceral obesity. *Physiol Rev.* 2013;93(1):359-404.

10 Charkoudian N, Stachenfeld NS. Reproductive hormone influences on thermoregulation in women. *Compr Physiol.* 2014;4(2):793-804.

11 International Osteoporosis Foundation. Epidemiology of osteoporosis and fragility fractures. 2024. Available at: osteoporosis.foundation.

12 Zhu D, Chung HF, Dobson AJ, et al. Vasomotor menopausal symptoms and risk of cardiovascular disease. *J Am Coll Cardiol.* 2020;76(7):872-885.

13 Blacher J. Cardiovascular risk factors at menopause. Presentation at the Congrès National de la Ménopause, GEMVI (Groupe d'Étude sur la Ménopause et le Vieillissement hormonal Individuel).

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What gets measured
gets understood.
What gets understood
gets changed.

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