

OURA

Oura:
Your Ally Through the
Perimenopause Journey

Foreword

Each year, millions of women around the world go through perimenopause, a phase of life that can drastically impact physical and mental health, experiences in the workplace and familial and social relationships. Yet, a woman's journey through menopause remains shrouded in collective silence, stigma and misunderstanding. The health care system predominantly centers on the reproductive phases of women's health, inadequately addressing or even dismissing the complex, multifaceted experiences that accompany menopause in primary care settings. Grappling with frustrating symptoms, feelings of invisibility, and a limited range of resources, many women often seek solutions grounded in pseudo-science and unsubstantiated marketing promises.

But hope is on the horizon. Women are taking steps to understand what's happening in their bodies and then—in partnership with their physicians—make informed decisions. Wearables like Oura Ring can equip women with the information they need to understand their bodies. From tracking symptoms to evaluating changes in menstrual cycles, sleep, cardiorespiratory functions, physical activity and other behavioral aspects, wearables can ultimately turn complex data into clear, actionable insights, and help women navigate and feel their best at every stage of their menopause journey. Data from wearables could also be of immense value to healthcare providers, allowing for more tailored, personalized care and eliminating the amount of time spent measuring and interpreting data.

Wearables enable long term tracking of women's health during menopause, allowing physicians to leverage insights into how perimenopausal changes impact wellness while advancing our understanding of this transitional phase.

This report highlights our work to redefine the narrative around perimenopause, shining a much-needed light on the overlooked and under-researched range of physical and mental changes women experience. Built by trusted, world-class experts with decades of experience in women's and reproductive health, we remain steadfast in delivering a comprehensive, meaningful approach to women's health and well-being, no matter their stage of life.

Our work is just beginning. This is the first step in building a future where every woman feels holistically understood and supported in their health, and as their collective needs evolve, so must our technology as well as the scientific knowledge as a whole. We have an ongoing responsibility to innovate forward, scaling our insights to both close the menopausal gap and foster an environment where women feel secured and empowered within every health care setting.



Neta Gotlieb, PhD
Women's Health Product
Senior Product Manager and
Women's Health Lead



Introduction



Only 28% of women report knowing what to expect in their menopause experience¹.

Oura recognizes this information gap and created features to respond to women's needs.

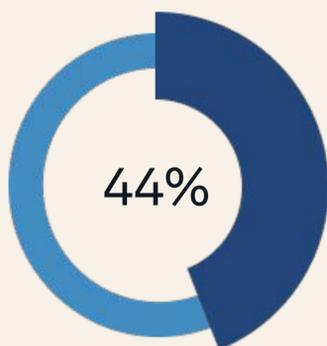
All women who live long enough go through perimenopause, a journey that, for most, takes about four years² but can range from just a few months to as long as 14 years^{3,4}.

During this period, women experience various changes in their physical, mental, and emotional health that can impact all aspects of their daily lives. Some women may be able to reduce the impact of these symptoms through lifestyle changes, such as physical activity or meditation and mindfulness practices. Others may find symptom relief with hormonal interventions. Regardless of their course of action, in order to address their symptoms, they must first recognize the signs of perimenopause and, in many cases, consult a medical professional.

Unfortunately, all too often, women are told they “just have to put up with” these symptoms or, worse, that it’s all “in their heads.”

Oura provides women with a tool to validate their intuition that they're going through physiological changes and equips them with data to inform their decisions. With this knowledge, they can take action to find solutions that work for them.

For this report, we looked at aggregate, de-identified data from more than 100,000 female Oura Members for one year to better understand how their wellbeing changes throughout perimenopause. We analyzed and compared multiple data points — symptoms captured by self-reported tags, sleep data, and cardiorespiratory data — across women in the premenopause, early perimenopause, late perimenopause, and early postmenopause age. Our findings confirm that perimenopause is a time when women experience a range of physical and mental changes that can affect all aspects of their lives.



of women feel not taken seriously by healthcare professionals.⁵

Our members' data validated that:

- 1 Sleep is strongly impacted, and the lack of restorative sleep can impair women's performance at work and home.
- 2 The symptoms that can arise during the menopause transition affect women's physical and mental health.
- 3 There may be an increased risk of cardiovascular issues due to the changes in women's bodies.

Note: On average, perimenopause typically starts in the mid- to late-40s, with menopause (defined as the absence of periods for 12+ consecutive months) occurring around age 51. For the purposes of this report, we consider women ages 40 to 44 to be in "early perimenopause", those ages 45 to 49 to be in "late perimenopause", and those ages 50 to 54 to be in "early postmenopause".

Premenopause

The time between a woman's first menstrual cycle and the onset of perimenopause.

Perimenopause

The period before menopause, when a woman's body gradually produces less estrogen and her cycles become irregular.

Menopause

The point in time when a woman hasn't had a period for 12 consecutive months.

Postmenopause

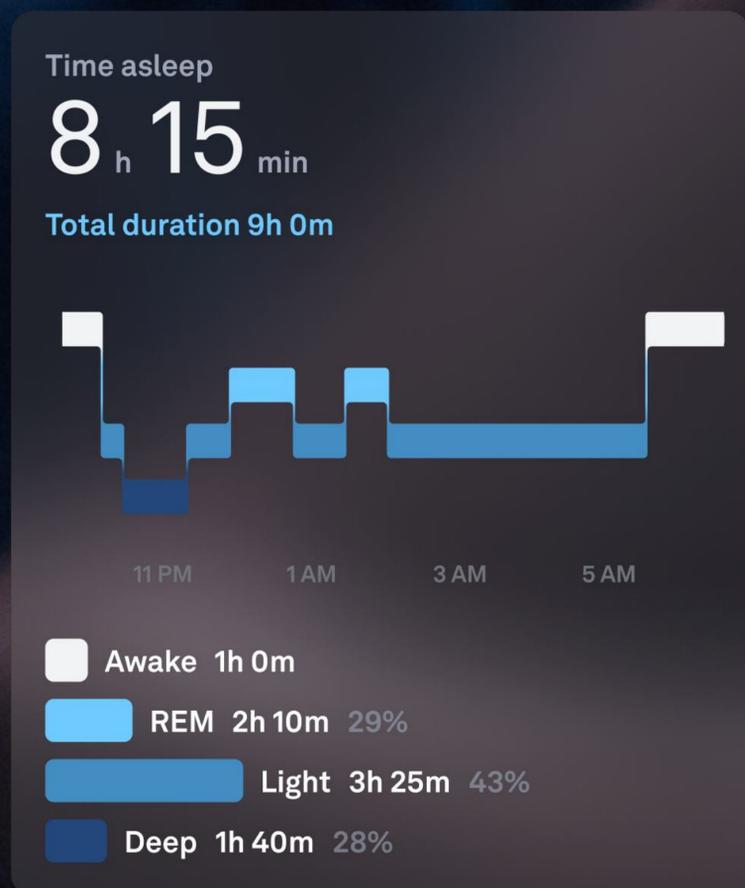
The period after menopause.

Lack of restorative sleep impairs daily *functioning*

We observed a progressive loss in sleep that results in up to two hours of lost sleep each week as women transition from premenopausal to postmenopausal.

Additionally, the sleep that women do get is of lower quality. As they age, women experience a reduction in REM sleep and deep sleep, and their sleep efficiency declines. All of this suggests that the sleep women manage to get may be less restorative, which can affect their functioning at home and work the next day.

“Fragmented sleep from waking during the night increases the risk for sleepiness, reduced performance at work or school, fatigue, irritability, and car accidents and illness, while a night of consolidated sleep offers the optimal benefit to our health, mood, and ability to combat viral infection,” says sleep scientist Rebecca Robbins, PhD. “If you experience awakenings, take them in stride and try to get back to sleep as fast as you can.”



REM (rapid eye movement) sleep is important for:
Learning Creativity
Memory Balancing emotions

Deep sleep is important for:
Repair of muscles, tissues, and bones
Memory



Sleep efficiency:
How much of a person's time in bed is spent sleeping

One possible explanation for these sleep changes is hot flashes and night sweats. More than half of women experience these sensations of heat, flushing, sweating, anxiety, and chills⁶ that can last anywhere from about 30 seconds to 10 minutes⁷. Up to 69 percent of hot flashes are associated with waking up during the night⁸. Accordingly, Oura members recorded more wake-ups during the night as well as more hot flashes as they transitioned through perimenopausal to postmenopausal age.



Average time spent sleeping per night:

Premenopausal age:

7_h 16_{min}

Early perimenopausal age:

7_h 7_{min}

Late perimenopausal age:

7_h 3_{min}

Early postmenopausal age:

6_h 57_{min}



Compared to premenopausal women, those in early perimenopause to early menopause experience an:

8-18%

decrease in deep sleep

5-9%

decrease in REM sleep



Compared to premenopausal women, wake-ups during the night increase:

+7%

in late perimenopause

+17%

in early postmenopause



Compared to premenopausal women, reports of hot flashes increase:

+61%

in late perimenopause age

+128%

in the early postmenopausal age

Perimenopause affects women's *physical and mental* health

Women in the perimenopause age range can experience a wide range of symptoms, including:

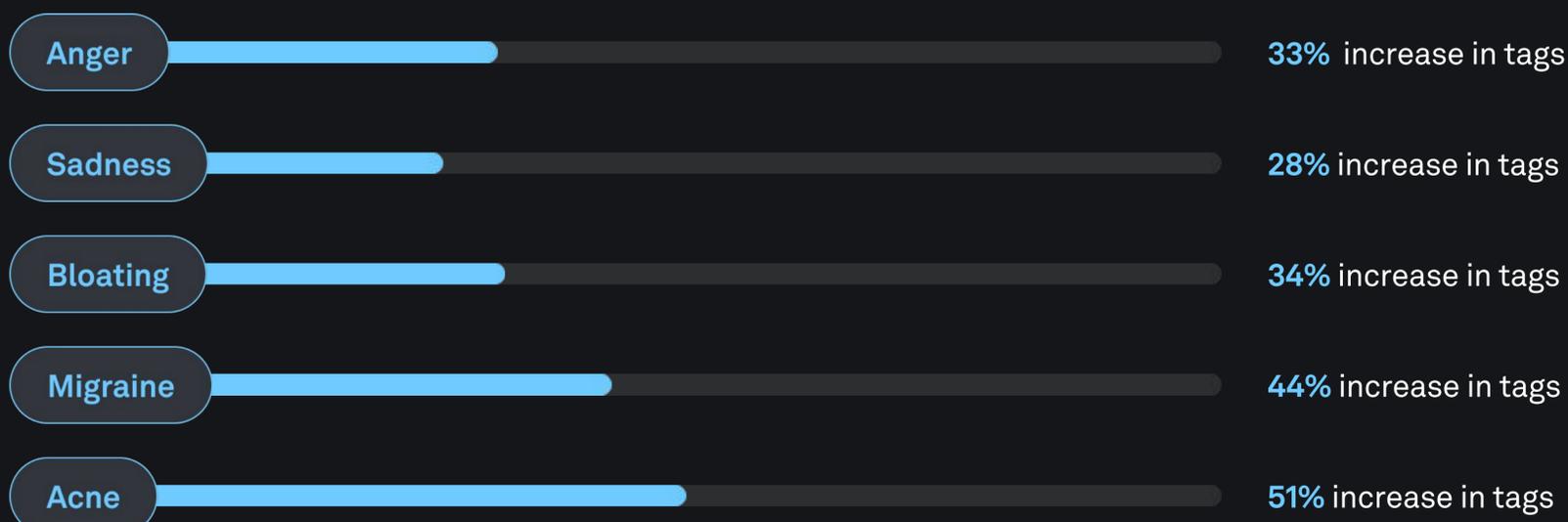
- Sleep disruption
- Hot flashes
- Vaginal dryness
- Discomfort during sex
- Brain fog
- Reduced energy
- Mood changes
- Headaches
- Acne

It's impossible to predict what each woman's experience will be like. Some may deal with more symptoms than others, and some symptoms may be more mild or more severe on different days and as a woman progresses to menopause.

It's no wonder many women have a hard time deciphering the messages their bodies are trying to tell them. "Women do not realize that the symptoms they're experiencing are signs of perimenopause because of a lack of knowledge, both among women and among clinicians," says Sara Szal, MD, precision medicine practitioner and author of *Women, Food, and Hormones*.

Additionally, until they experience them firsthand, many women can't grasp just how these symptoms may impact their well-being. "Dropping progesterone levels and wildly fluctuating, and ultimately declining, estrogen levels lead to increased anxiety and depressive symptoms in the perimenopause stage, along with worsening premenstrual syndrome, mood swings, brain fog, and early subjective cognitive decline," Dr. Szal explains. "These changes contribute to less sleep and declining health, which may diminish a woman's resiliency in relationships and at work."

We observed that Oura members in the perimenopausal age range tag many of these symptoms. Compared to premenopausal women, women in late perimenopause age show:



Cardiovascular risk factors *increase*

In addition to family history, many changes that occur as women progress through menopause stages can contribute to an increased risk of cardiovascular problems. This includes:

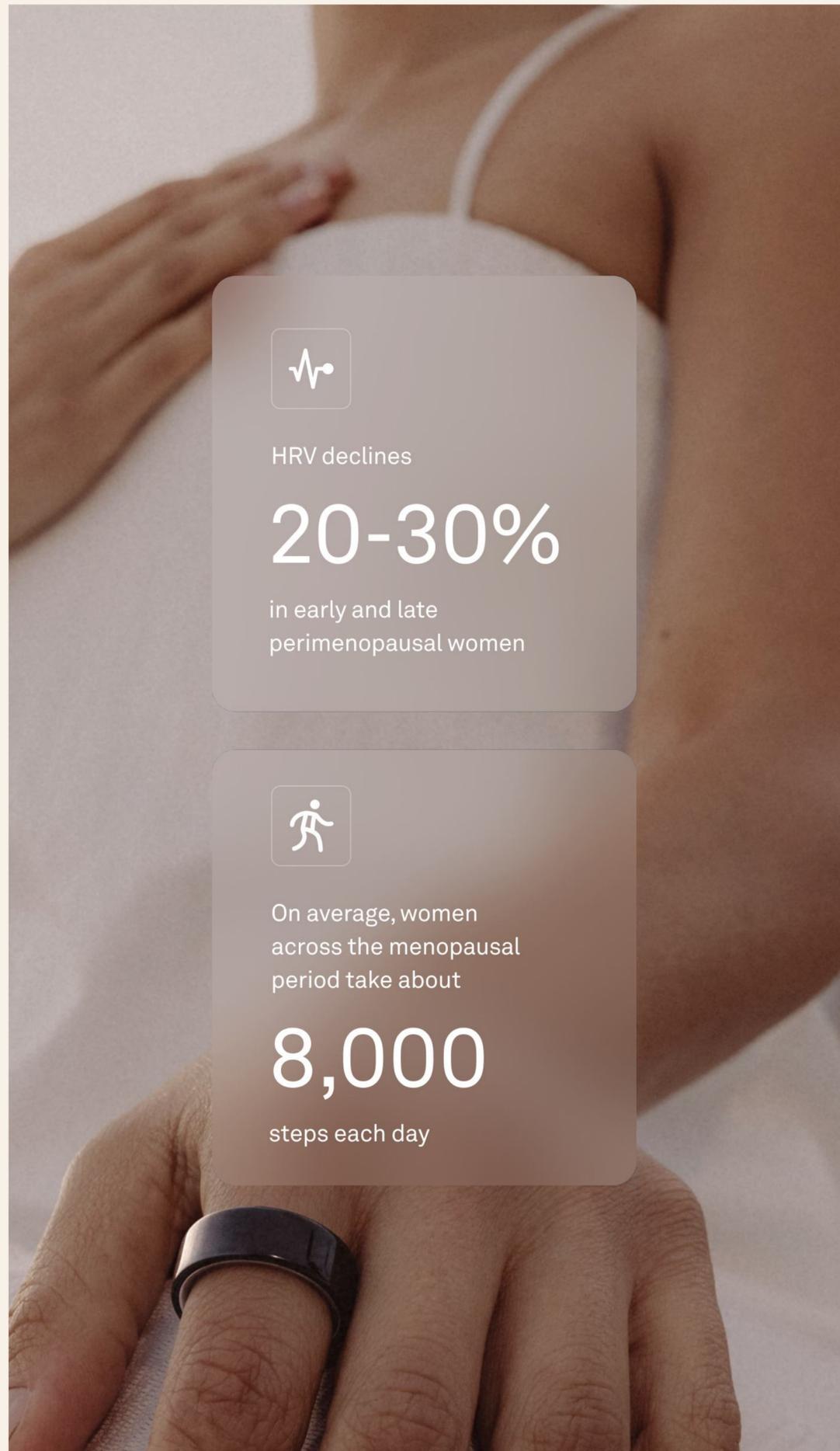
- Decreased estrogen
- Increased belly fat
- Sleep disruption
- Stress
- Decreased heart rate variability (HRV)

HRV, or the variation in timing between heartbeats, is a marker of health. A higher HRV is believed to translate to better fitness and general health⁹.

HRV is also linked to cardiovascular disease: Higher HRV is associated with lower risk of cardiovascular disease, while lower HRV is associated with an increased risk of cardiovascular events¹⁰.

We observed a decline in Oura members' HRV of 20 to 30 percent during perimenopause.

At the same time, regular physical activity may reduce the risk of heart problems. Good thing Oura members appear to keep up with their steps as they age.



How Oura *supports* women during this significant life transition

For far too long, women have not received the support they need to thrive during perimenopause—through no fault of their own. Only recently have discussions about this phase entered the mainstream. Exacerbating the issue, doctors report receiving insufficient education to serve patients during this time: In a small survey of medical students, a mere 7 percent said they felt adequately prepared to support women experiencing menopause¹¹.

To help women make the connection between their various symptoms and the fact that they may be going through perimenopause, Oura offers two standout features that can also empower them during conversations with their healthcare providers:



Members can tag their perimenopause-related symptoms and



Generate a Cycle Insights Report that illustrates their symptoms' patterns in relationship to their cycle phases

Data gives women agency in their healthcare. In addition to several existing tags, Oura has added new tags specific to this transition to help women track their symptoms and interventions:

HRT

Mood swings

Hot flashes

Vaginal dryness

Low sexual desire

Crying

Difficulty concentrating

Forgetfulness

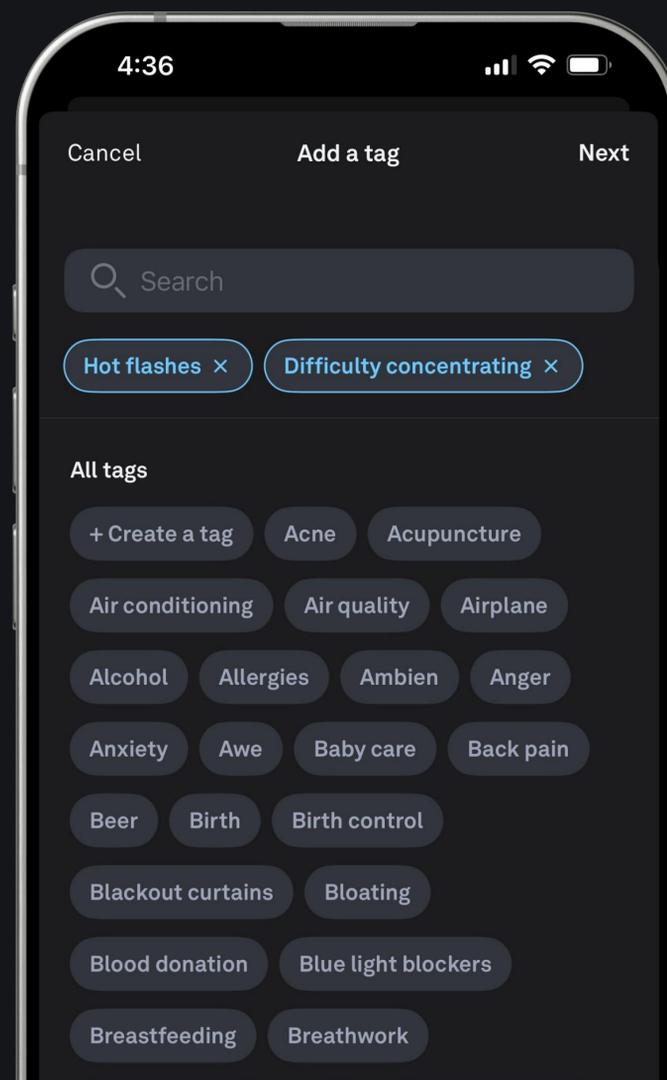
Irritability

Joint pain

Low motivation

Spotting

Urinary issues

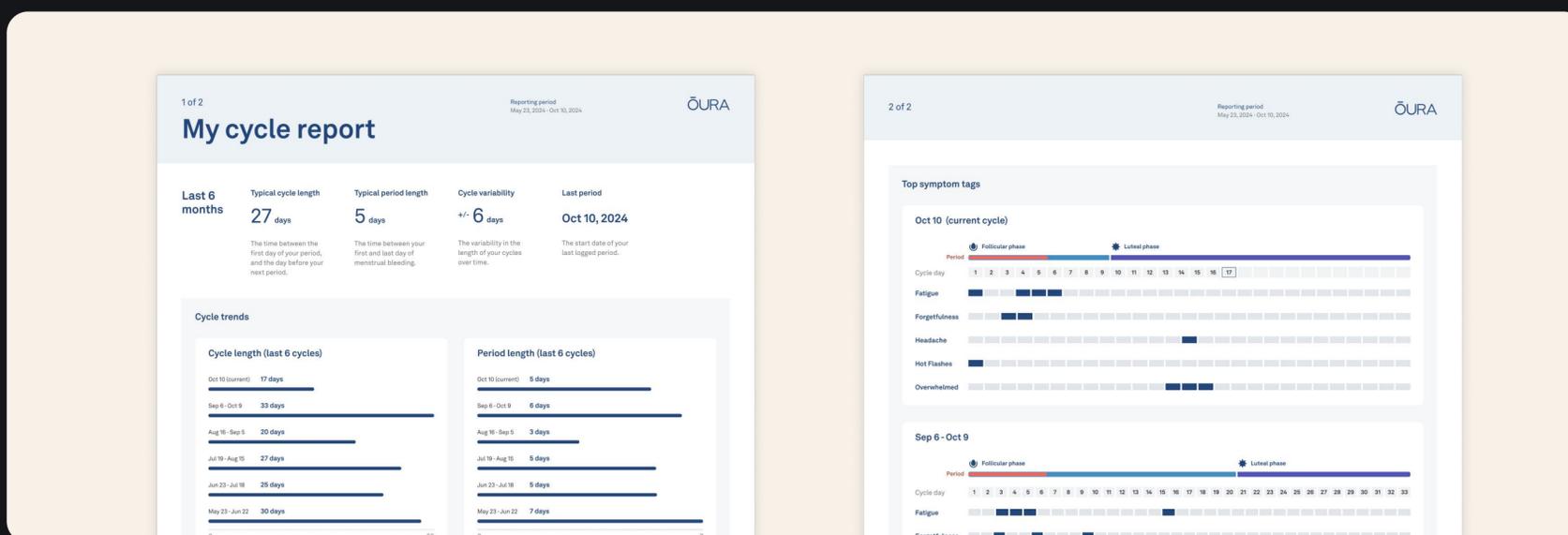


By using the Tags feature, women can contextualize changes and trends in their Oura scores and data over time in relation to how they progress through the menopause stages.

Take Lisa, 53, who dealt with sleep disorders and night terrors her whole life. During the menopause transition, her sleep worsened. “I would wake up with brain fog and think it was related to menopause,” she says.

But once I started examining my overnight resting heart rate graph in Oura, I realized I didn’t get brain fog the nights I have the ideal heart rate curve.

“So then I made my dinner earlier and my workouts in the afternoon, and I stopped drinking alcohol and coffee. My HRV doubled.”

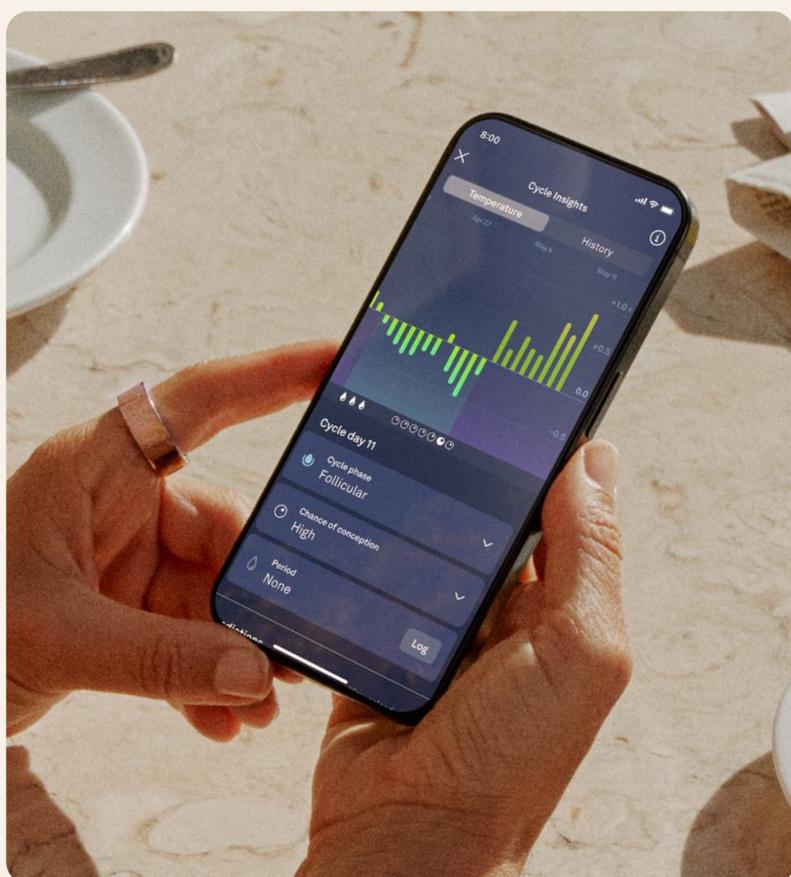


Additionally, Cycle Stats, including average cycle length, variability, and regularity, help women understand how their cycle is changing over time. Members can also download a six-month report of their Cycle Insights data. This report includes cycle length, period length, temperature variation, cycle phases, and symptom tags. So rather than simply telling their doctor, “I’ve been having brain fog, hot flashes, and mood swings,” they can show them what’s going on and how long it’s been going on. This data can give them confidence to discuss their symptoms with healthcare providers and be sure they leave their appointment with a plan to address their concerns, such as lifestyle changes, medication like hormone replacement therapy, or supplements.

“Using Oura’s Cycle Insights and my doctor’s guidance, I learned that I could monitor how my body was responding to hormone replacement therapy by tracking my body temperature trends,” says Saša M., 45. “Having access to this information about my body makes me feel empowered.”

Conclusion

Together with our members and our cutting-edge technology and science, Oura is advancing the knowledge we have as a society to learn about menopause and build solutions. One of our goals is to help women develop body literacy so they can be the expert in themselves and, in turn, be their own advocate. These new tags and reports are a step. But this is only the beginning of a journey. Oura will continue to listen to women and respond to their needs in an effort to benefit our members and society at large.



Cycle Insights



Cycle day 10
-0,2 °C

Follicular phase

The follicular phase is associated with increased creativity and energy, so take advantage of it! Maybe it's time to start a project you've been putting off.

[Estimated period start Apr 25–30](#)

Body temperature
+0.2 °F
From baseline

Cycle day
27
May 29

[Estimated period start May 30–June 3](#)
In the next 5 days
Based on your body temperature

[Calendar](#)

[Log period start](#)

“
Having access to
this information
about my body
makes me feel
empowered.”

Saša M., Oura Member

References

¹ [US Women's Wellness Market Report 2024](#)

² [Perimenopause](#)

³ [Needs assessment study for management of menopause in the community](#)

⁴ [What Is Menopause?](#)

⁵ [Main issues experienced by women when accessing healthcare in the United Kingdom as of 2022](#)

⁶ [Menopausal Hot Flashes: A Concise Review](#)

⁷ [What Is Menopause?](#)

⁸ [Nocturnal Hot Flashes: Relationship to Objective Awakenings and Sleep Stage Transitions](#)

⁹ [The Role of Heart Rate Variability \(HRV\) in Different Hypertensive Syndromes](#)

¹⁰ [Heart Rate Variability and Risk of All-Cause Death and Cardiovascular Events in Patients With Cardiovascular Disease: A Meta-Analysis of Cohort Studies](#)

¹¹ [Menopause Management Knowledge in Postgraduate Family Medicine, Internal Medicine, and Obstetrics and Gynecology Residents: A Cross-Sectional Survey](#)