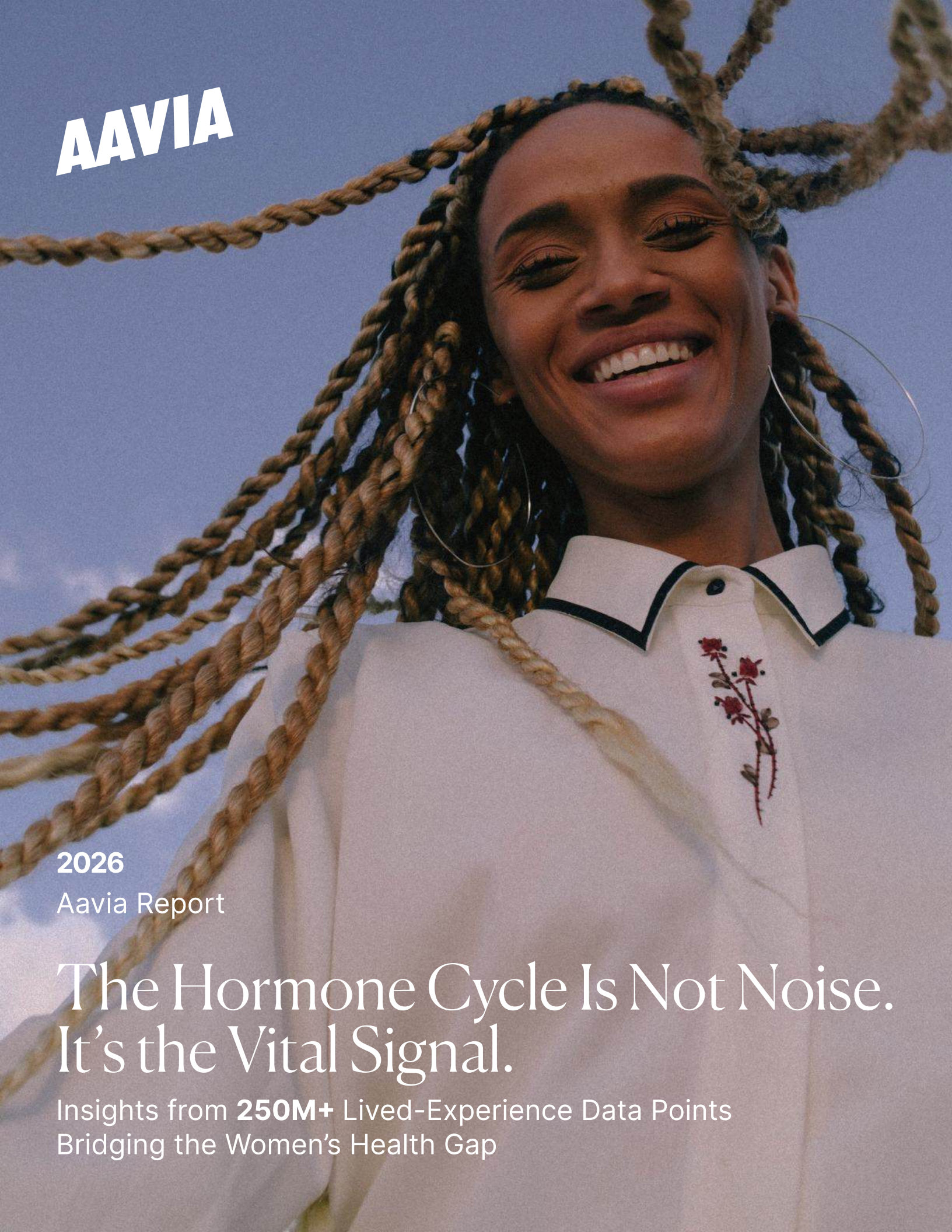

AAVIA

2026

Aavia Report

The Hormone Cycle Is Not Noise. It's the Vital Signal.

Insights from **250M+** Lived-Experience Data Points
Bridging the Women's Health Gap

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> [Aavia is] transforming women's health by helping individuals better understand their bodies and communicate effectively with their doctors, while also giving clinicians the tools to ask better questions and see important patterns... This approach reflects the reality of women's lived hormonal experiences and delivers a more accurate, meaningful foundation for the healthcare industry. It's revolutionary, really.
>
> – DR. UMA LERNER, MD

1. Executive Summary

The Women's Health Gap:

9 more years
women spend in poor health than men[1]

7-10 years
to diagnose a hormone condition[2]

5%
of global health R&D for women's health[3]

What Aavia Built to Bridge the Gap:

This dataset compounds with each cycle and cannot be replicated retroactively

250M+
lived-experience data points from members logging 4x per week

- 11 Across 11 health categories
- Cycle-anchored
- Between menarche and preconception

Commercial Application Across:

View **Strategic Value Matrix** on pg. 5 for more detail

- Pharma, Biotech, and Clinical Trial
- AI, Data Infrastructures, and RWE
- Virtual Care and Diagnostics
- Wearables and Connected Devices
- Performance and Behavior Change

Research shows that approximately 80% of women experience at least one painful mood or physical symptom tied to their hormone cycle[4]. Yet, these symptoms, and their underlying conditions, often take years to be recognized and diagnosed in the healthcare system. That delay exists because the care women receive, the drugs prescribed to treat them, and the AI models now being built to personalize their health were all designed without accounting for the hormone cycle. They were trained on data with documented male-as-baseline and cycle-agnostic bias that treats female biology as a constant.

This is not a knowledge problem. It is a data problem.

Aavia has built the dataset that did not previously exist: longitudinal, self-reported, cycle-anchored, and contributed by members who occupy **the most data-sparse window in women's health research, the years between menarche and preconception**[1]. Aavia also captures what women say before they have the language to name what they are experiencing, forming one of the largest qualitative datasets on hormone health.

What this report shows is a fraction of what the dataset can surface. The findings include condition-specific symptom fingerprints visible months before clinical presentation and medication side-effect trajectories absent from package inserts or clinical trials.

The following sections expose the systemic blind spots in women's health and demonstrate the clinical and commercial insights that emerge when the ovarian hormone cycle is finally integrated as a variable into health data.

How to Use This Report

Building this dataset required member trust that cannot be bought or manufactured. It compounds in value with every cycle logged and an organization starting today would be years behind. For organizations building products, protocols, or personalization engines for women, the hormone cycle is the variable typically missing in their data.

This report is structured to guide stakeholders from the systemic data gap to specific, actionable applications.

Strategic Value Matrix (pg. 5): maps each dataset capability to the sectors where it transforms outcomes and creates the most direct commercial value

Commercial Use Cases (Section 10): breaks down a sampling of the high-value questions Aavia is uniquely positioned to answer, organized by sectors

Research Findings (Sections 4 to 6): covers the data findings that improve patient care, from mood and medication patterns to condition flagging and clinical trial infrastructure

Clinical Application (Sections 5, 7 to 9): shows how the dataset interacts with external variables like GLP-1s and operates across unstructured and intervention data layers

Strategic Value Matrix

Strategic Sector	The Invisible Gap	What Aavia Makes Possible
A. Pharma, Biotech, and Clinical Trial Development	Lack of real-world evidence (RWE) on how hormonal fluctuations impact drug efficacy and side-effect profiles. ~80% of clinical trials miss enrollment timelines, with delays costing sponsors up to $8 million per day in lost revenue[5].	**Clinical De-Risking:** Cycle-anchored efficacy data that exposes trial design blind spots current protocols cannot see[6]. Pre-diagnostic phenotyping before a clinical label exists.
B. AI, Health Data Infrastructures, and RWE	Male-as-baseline training data ignores the hormone cycle entirely[7], leading to algorithms that fail to account for 50% of the population.	**The Foundational Training Layer & Proprietary Moat:** Dataset structured around the hormone cycle, not averaged across it. Daily-level detail that separates a data layer from a diagnostic one. Unstructured data capturing how women describe symptoms before clinical language exists.
C. Women's Health Virtual Care and Diagnostics	Even longitudinal virtual care platforms lack the between-visit behavioral signal, leading to higher patient churn and misdiagnosis or longer diagnosis timeline.	**High-Fidelity Clinical Capture:** Pre-visit symptom context before she books. Between-visit signal that improves diagnostic accuracy and member LTV. Condition-specific referral triggers years before clinical presentation.
D. Wearables and Connected Devices	Physiological signals cannot interpret what a person experienced, on this day, in this phase. Active logging engagement is notoriously difficult to sustain for these devices[8].	**The Proprietary Context Layer:** Transforming raw physiological signals into actionable health intelligence with the subjective context layer, with four times weekly engagement density, increasing hardware stickiness.
E. Performance, Longevity, and Behavior Change (Weight Loss, Sleep, Fitness, Mental Health)	Generic, "linear" health models ignore how hormonal cycles dictate metabolic rate, sleep architecture, recovery, and cognitive resilience.	**Adaptive Intelligence Layer:** Implementing cycle-anchored personalization for physical activity, nutrition, sleep, recovery, mental health and more, shifting to a bio-aligned optimization engine that maximizes user results and platform loyalty. Explains why interventions fail, not just that they did.

2. The Data Gap No One Is Talking About

Women's health has a data problem, and it runs deeper than most people realize.

For decades, health research has been built around a male baseline. Even after the NIH Revitalization Act of 1993 mandated the inclusion of women in clinical trials[9], many studies still fail to account for the hormone cycle as a variable[10].

The fragmented data sources the healthcare system relies on, from claims data, EHRs, and surveys, to lab tests and virtual care platforms, were never designed around a core reality of female biology: that hormones fluctuate in a predictable, cyclical pattern, shaping everything from mood and sleep to medication efficacy and injury risk. Research even shows these patterns may serve as an early indicator of risk across metabolic, cardiovascular, and reproductive conditions[11].

As a result, much of modern health data, including the foundation for drugs, clinical guidelines, and digital health products, systematically overlooks the hormone-driven variation.

What's Missing:

- Decades of research built around a **male baseline**
- Women's health largely **unaddressed before fertility care**

→

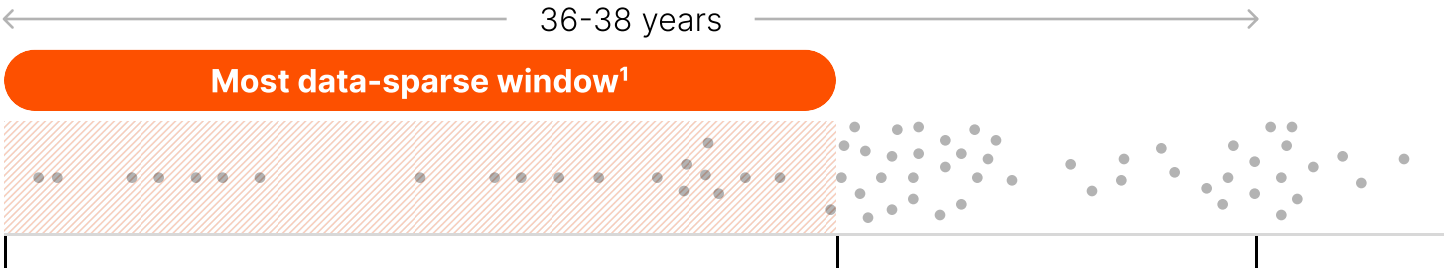
Negative Impact on Women:

- Normalization of pain
- Long diagnosis times
- Medical gaslighting

The scale of this gap has real consequences. A study found that 45.2% of survey respondents missed an average of 5.8 days of work or school in one year due to cycle symptoms[12]. Common hormone conditions remain underrecognized due to misdiagnosis or pain being normalized in the healthcare system: endometriosis takes up to 10 years to diagnose[2], Premenstrual Dysphoric Disorder (PMDD) an average of 12 years[13], and menstrual migraines an average of 7.5 years[14].

A 2024 study found that among women seeking care for chronic gynecological pain, 45% had been told they "just needed to relax more," 39% were made to feel "crazy," and 55% had considered giving up on seeking care entirely[15]. Women are not failing to seek help. They are being turned away from it.

Research has documented that women's health systems have historically framed the 36 to 38 years between menarche, the first occurrence of menstruation, and menopause, 12 months after last menstruation[16], primarily around reproductive function, with little infrastructure designed around the full range of what women experience in between[17]. The time between menarche and preconception is when cycles first become irregular, when mood shifts are attributed to personality rather than hormonal changes, when pain is dismissed as normal, and when the conditions that may take years to diagnose are quietly beginning.



For Illustrative Purposes Only

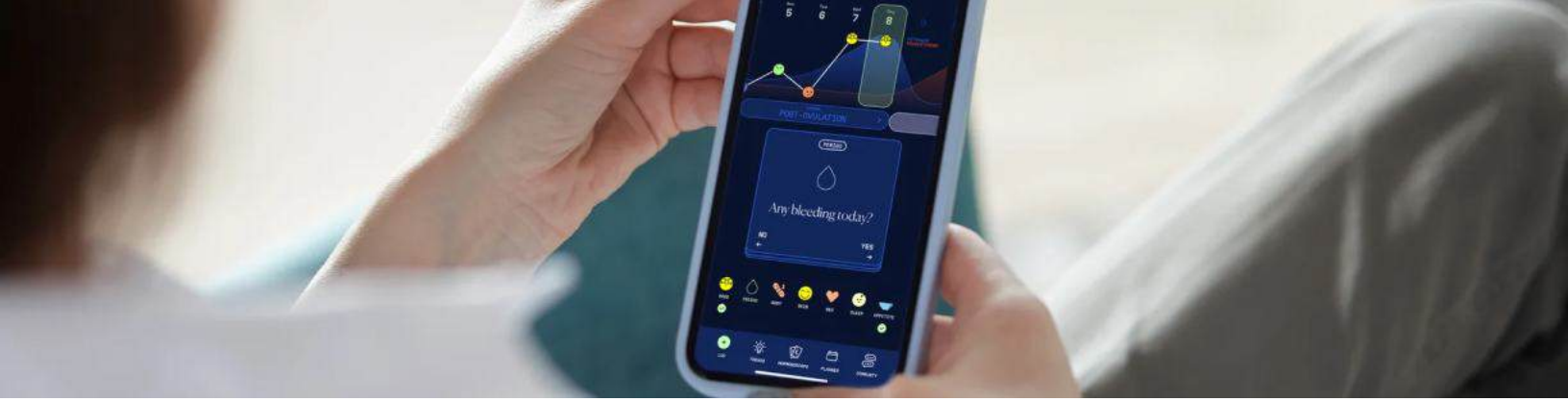
In absence of answers, women are doing their own research to make sense of symptoms and build healing protocols. They are turning to social media, online sources, and community forums, and conducting personal trial and error.

The women described above are not edge cases. They represent the 80% of women who experience cycle symptoms[4], and the associated costs are absorbed by the healthcare system, employers, and individuals without a clear clinical pathway to address them.

> "I've had the same painful symptoms since my first period. I'm 25 years old now, but my cramps are still severe. I got an IUD in the hopes of regulating the pain a bit. The pain is now less frequent, but more significant. I don't know where to go from here besides doing my own online research and getting ideas from social media.
>
> – AAVIA MEMBER, 25

A 2024 World Economic Forum and McKinsey Health Institute report estimated that closing the women's health gap could add $1 trillion to the global economy annually[1].

Aavia was built to close that gap.



3. The Dataset That Did Not Exist Until Aavia Built It

The answer to the women's health data gap is not a better survey, a larger EHR, or the digital period trackers. It is a fundamentally different architecture: a daily-level, cycle-anchored, and longitudinal dataset that makes the hormone cycle a standard variable for the healthcare system.

Women average fewer than two primary care visits per year[18], and telehealth interactions are similarly episodic[19]. EHRs capture a diagnosis after it's been made, lab tests capture a single moment, surveys capture a memory, and wearables capture physiological signals without context. None capture a woman's lived-experience between those encounters.

Aavia bridges the gap. Aavia members log health indicators an average of four times per week, with the top 10% logging every health indicator, every day.

This translates to an average of **200 touchpoints per member per year**, compared to an average of **fewer than ten** across the entire traditional healthcare system for the same person.

Traditional Healthcare System

●

Aavia

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That is not an incremental improvement in data density. It is a structural difference in what becomes visible.

The result is a dataset that did not exist before Aavia built it:

250M+ longitudinal data points

Captured at the moment of experience and anchored to cycle phase

11 health categories:

Menstrual flow · Mood · Pain · Medication · Sexual health · Cervical mucus · Digestive Health · Appetite · Skin · Sleep · Movement

Pain category includes:

Cramps · Fatigue · Nausea · Bloating · Breast tenderness · Headaches · Migraines · Body aches · Lower back pain · Pelvic pain · Missed commitments

Apple Health integration

Syncing passive physiological signals from wearables

Unstructured data from three sources

Including 73,000+ community forum posts and 220,000+ comments, member journal entries, and Ema, Aavia's AI model, capturing what women are struggling with, trying, and cannot yet name

Rich member profiles

Capturing age, ethnicity, diagnosed conditions, symptoms, and prior treatments, so every finding can be broken down by population subgroup

97% international Gen Z and Gen Alpha member base (people born after 1997, under 30 years old as of 2026)

Collecting data at the ground floor of their reproductive health for the most data-sparse window and aging into employer benefits, advanced diagnostics, and chronic condition management over the next decade

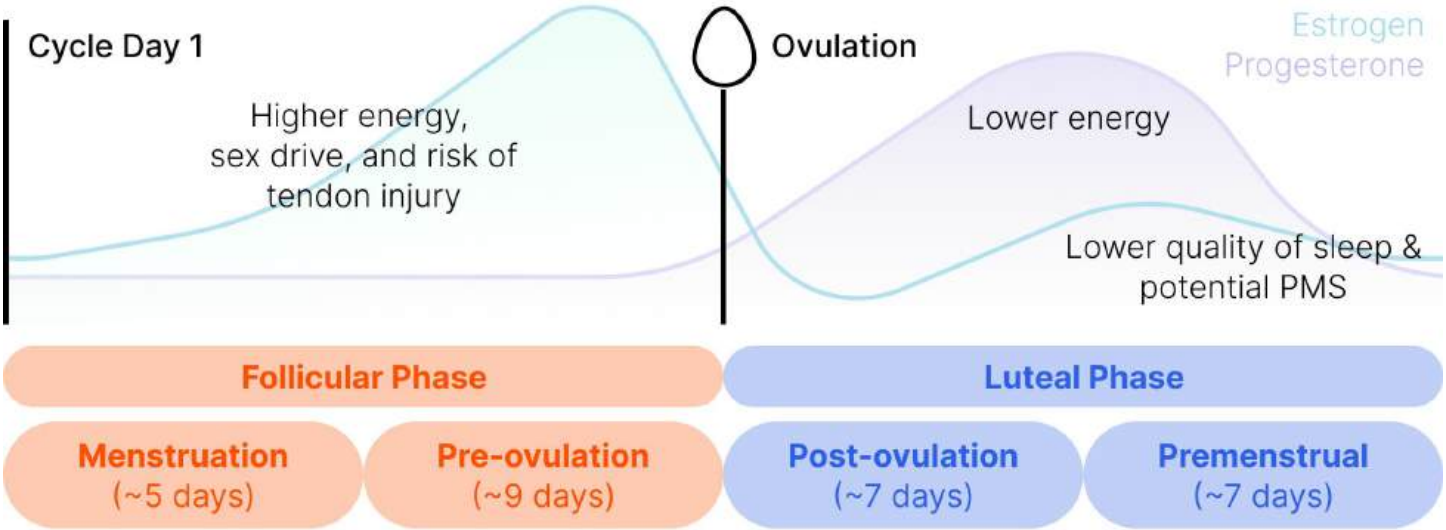
Aavia's member base grew in the wake of widespread privacy concerns about traditional period trackers. Thousands of members transferred years of personal health history to Aavia specifically because they trusted it. That trust is what produces longitudinal depth at this scale. A member who logs for three years contributes not just discrete data points, but a continuous personal health record across condition diagnoses, medication changes, and life events.

For healthcare stakeholders, Aavia is not a consumer app. It is the behavioral and clinical intelligence layer that has been missing from women's health infrastructure for decades.

4. What Becomes Visible When 150,000 Women Log Their Health Indicators 4x per Week

At Aavia, the hormone cycle is not background noise. It is a vital signal[20].

Fluctuations in estrogen and progesterone throughout the cycle meaningfully influence mood, sleep, pain, energy, and overall wellbeing, even when daily routines stay constant. Rather than treating the cycle as noise to smooth over as most health datasets do, Aavia's entire platform is built around it. Every data point is anchored to one of four “half-phases”:



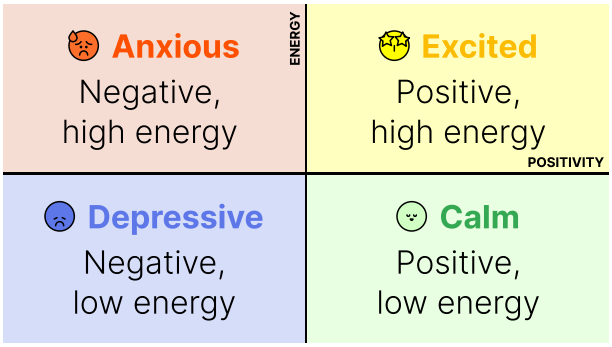
For Reference: Hormone Cycle Half-Phases

This architecture means every finding is contextualized by where a woman is in her cycle. That is a fundamentally different kind of dataset than anything the industry currently has access to.

Daily-Level Detail Makes Clear That Premenstrual Mood Decline Is Gradual, Not Episodic

Aavia members log their moods across four quadrants, anchored to cycle phase.

Data from approximately 150,000 members ($p < 0.01$) show mood differences between Pre-ovulation, known to be the "best mood half-phase", and Premenstrual, commonly known to be the "worst mood half-phase" (Exhibit 1).

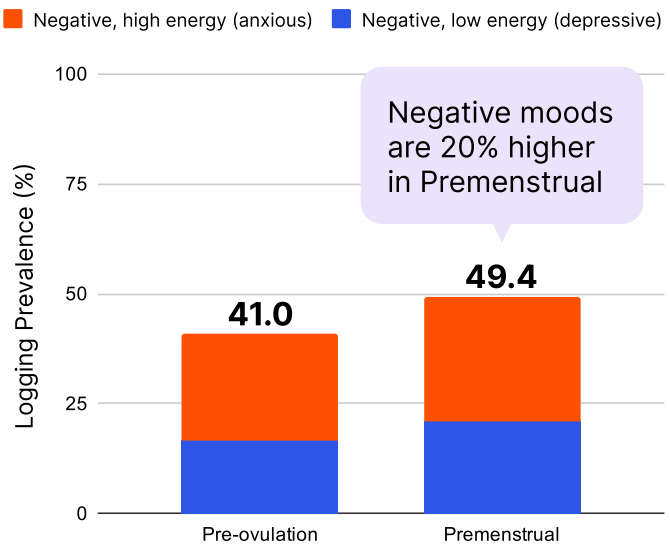


For reference: Aavia Mood Matrix

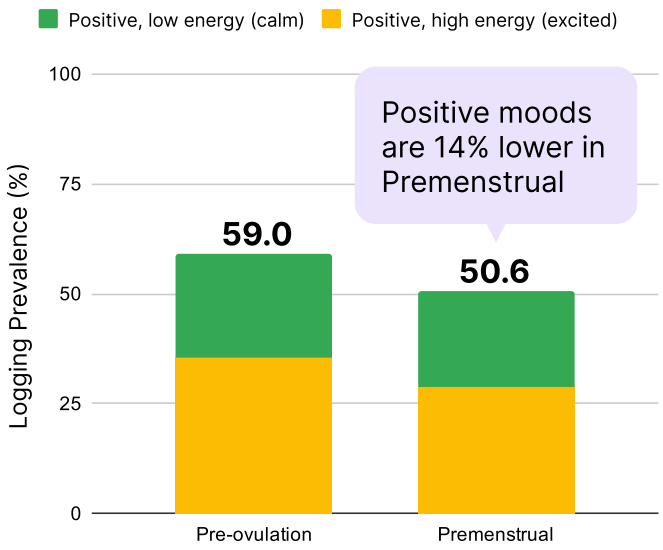
Exhibit 1

Negative moods are 20% higher and positive moods 14% lower in Premenstrual than Pre-ovulation

Negative Moods Across Two Cycle Phases



Positive Moods Across Two Cycle Phases



Source: Aavia Proprietary Data

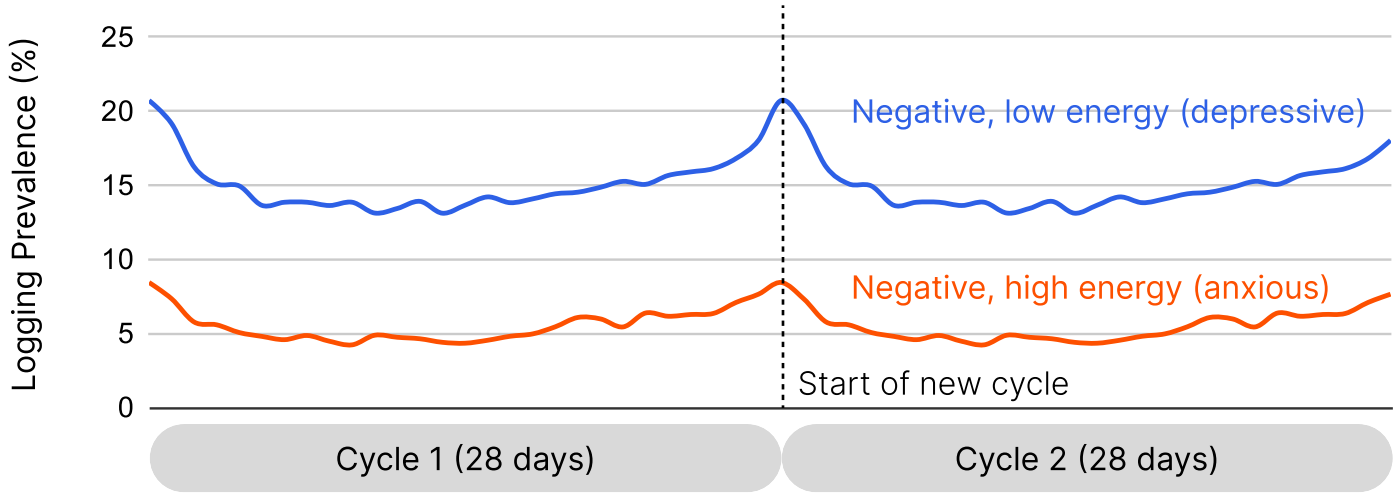
Most datasets only capture these broad phase-level trends and stop there. In contrast, Aavia's daily-level data goes on to show how mood changes unfold across the cycle, and challenges common assumptions.

Both depressive and anxious moods rise during Premenstrual, but not abruptly. Negative, low energy (depressive) mood increases steadily from 15% on day 22 to 18% on day 28 (+20%), while negative, high energy (anxious) mood rises from 5.5% to 7.7% (+40%) over the same period (Exhibit 2). This indicates that mood decline in Premenstrual is gradual and affects both depressive and anxious states, a pattern that contradicts the episodic framing used in most previous large-scale studies[21].

Exhibit 2

Negative moods increase gradually over half a cycle. Most clinical evaluations only recognize the last two days.

Mood Across Cycle Phases (Baseline Population)



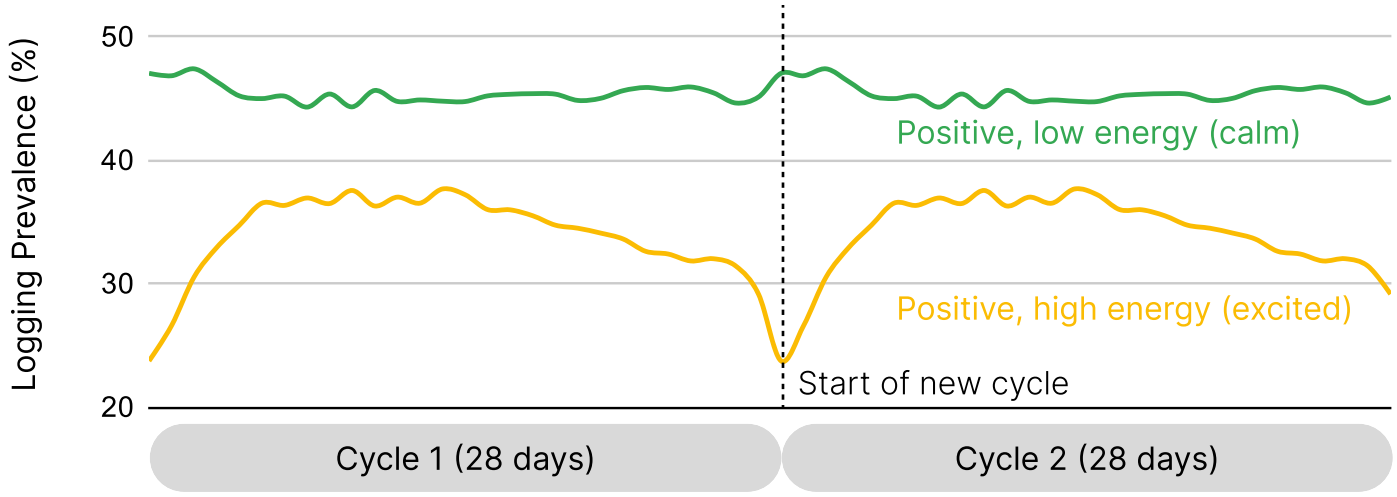
Source: Aavia Proprietary Data

Similarly, energy drops gradually in the last few days of the cycle, and rebounds within ~5 days of cycle reset. Positive, high energy (excited) mood increases from 24% to 35% (+46%) in days 1-5, then plateaus, indicating a return to baseline (Exhibit 3). Across the entire cycle, positive, low energy (calm) mood remains stable in the 44 to 47% range, and variability is driven by positive, high energy (excited) mood declining in luteal phase.

Exhibit 3

Energy declines progressively before menstruation and rebounds within ~5 days of onset

Mood Across Cycle Phases (Baseline Population)



Source: Aavia Proprietary Data

This challenges the common framing of PMS as purely "negative mood" and highlights energy, fatigue, and motivation as targets for intervention, not just mood-stabilizing or antidepressant approaches. A different product, a different trial endpoint, and a different market.

What further sets this finding apart is the level of detail and scale. In past studies, clear premenstrual mood effects are inconsistently detected[21] and often deemed clinically minor[22]. Most studies rely on retrospective recall surveys[21], limiting their ability to capture day-by-day mood trajectories. The largest comparable app-based study tracked 352 women with depression[23]. In contrast, Aavia's analysis spans 150,000 members from the general population.

At that scale and daily-level detail, Aavia can show not just that mood shifts occur, but when the shift begins, how quickly it escalates, whether it is linear or stepwise, and when an individual crosses clinically meaningful thresholds. That is not a refinement of existing research. It is a different category of measurement entirely.

WHAT IT ENABLES

A symptom that builds gradually over 14 days before clinical presentation is a predictable, interceptable event. At a daily-level scale, that window becomes an intervention timing target, a recruitment signal for trials, and a signal for when to trigger a clinical referral. Most platforms capture the endpoint. This data captures the trajectory that led to it.

5. The Symptom Fingerprints That Appear Before a Doctor Does

Aavia's dataset goes beyond average experiences to show how members experience clinical conditions in lived reality. By capturing health indicators across the full cycle alongside reported diagnoses, Aavia reflects how symptoms are actually experienced across conditions. Definitions of the conditions referenced in the following sections are provided in the **Appendix** (pg. 38).

Each Condition Has a Distinct Symptom Fingerprint

Symptom co-occurrence measures how often two symptoms appear together in the same day's health log. Unlike single-symptom prevalence, co-occurrence reveals the full burden of a condition, and how that burden differs across diagnoses.

PMDD is classified in the DSM as a depressive disorder[24]. Physical symptoms such as breast tenderness, headaches, bloating, and joint pain are supplementary criteria. In clinical practice this means physical symptom burden is systematically underweighted in how the condition is treated, how trials are designed, and what outcomes are measured.

Aavia's co-occurrence data reveals the scale of what that framing misses: a member with PMDD logs physical symptoms at rates that are as dramatically elevated as her mood symptoms, across every phase of the cycle, not just in the luteal window that clinical protocols target.

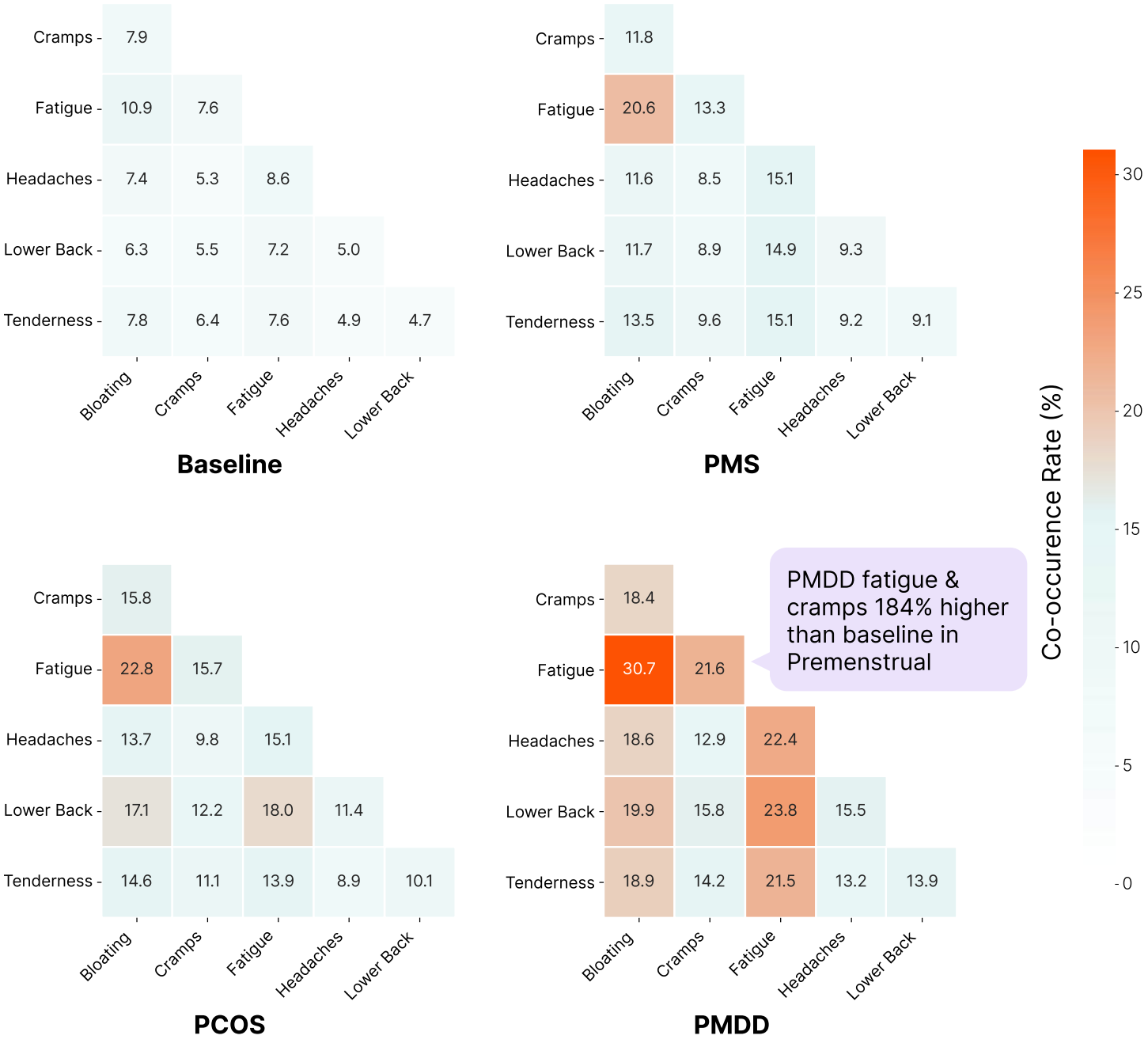
The magnitude of difference is substantial: a member with PMDD has a 21.6% daily probability of logging cramps and fatigue simultaneously during Premenstrual, **184% higher than the baseline rate of 7.6%** among members without diagnosed conditions (Exhibit 4).

Members with Polycystic Ovary Syndrome (PCOS) over-index on lower back pain alongside both fatigue and bloating, while members with PMDD over-index on headaches with fatigue, a distinction that points toward meaningfully different underlying symptom profiles for each condition. A symptom fingerprint.

Exhibit 4

Baseline, PMS, PCOS, and PMDD show meaningfully different co-occurrence patterns in Premenstrual

Symptom Co-occurrences in Premenstrual



Source: Aavia Proprietary Data

WHAT IT ENABLES

Condition-specific symptom fingerprints, visible months before a diagnosis, change what is possible in recruitment, trial design, and diagnostic algorithm development. The question is no longer whether a woman has a symptom. It is which symptoms she carries together, at what phase, and what combination of interventions is most likely to help her specifically. For a woman with PMDD whose co-occurrence data shows significant physical symptom burden alongside mood symptoms, longitudinal tracking enables treatment optimization: assessing response over time, guiding dosage adjustments, and informing sequencing when co-occurring physical symptoms like cramps may shift which first-line approach is tried first. These are clinical distinctions that standard intake forms are not designed to capture.

PMDD Is Not Just a Luteal Phase Condition. Trials Are Measuring the Wrong Window.

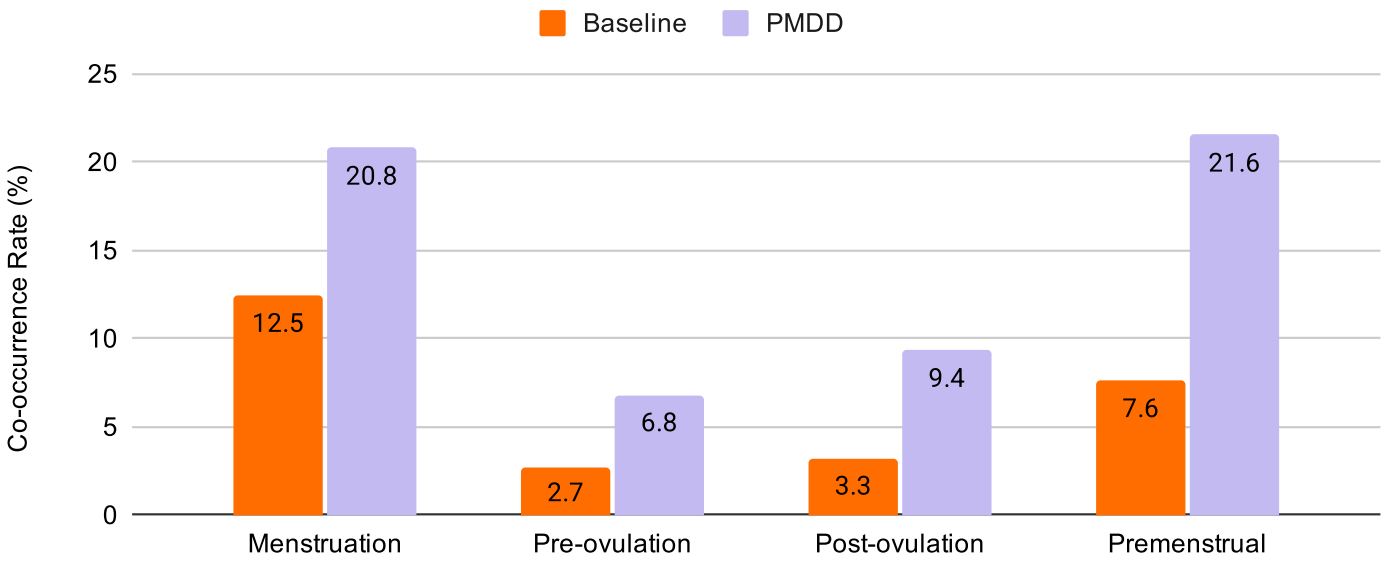
Existing PMDD frameworks focus on only the luteal phase (Post-ovulation and Premenstrual half-phases). Aavia's data shows that is not enough.

While the symptom burden peaks in Premenstrual at +184% of baseline, the elevation across every phase indicates that PMDD is not confined to that half-phase (Exhibit 5).

Exhibit 5

PMDD elevates symptom co-occurrence across every cycle phase

Co-occurrences of Cramps & Fatigue Across Cycle Phases



Source: Aavia Proprietary Data

The standard trial design requires prospective symptom monitoring across two consecutive cycles, with eligibility and outcome measurement concentrated on the luteal phase[6]. If symptom burden is 67% above baseline during Menstruation and **152% above in Pre-ovulation**, then trial designs that measure outcomes only within the luteal window are systematically undercounting the full condition burden and potentially misidentifying the population most in need of intervention.

That is not a research gap. It is an active design flaw.

WHAT IT ENABLES

Trial protocols, diagnostic criteria, and intervention programs built around the luteal window are measuring a fraction of the condition. Full-cycle, daily-level data changes the eligibility criteria, the outcome windows, and the treatment targets. That is not a refinement of current PMDD research design. It is a correction of it.

PMDD Is Not More Severe Depression. The Trajectory Is Different.

PMDD is frequently misdiagnosed as depression or anxiety[13]. Symptoms overlap and most clinical evaluations do not track how they evolve across the full hormone cycle.

56%

of patients with PMDD reported prior misdiagnosis or medical gaslighting[13]

Aavia's data shows that the difference is not just in severity. It is in the trajectory.

Negative, high energy (anxious) mood rises by 72% from Pre-ovulation to Premenstrual in PMDD, compared to 47% in depression, indicating a stronger premenstrual escalation (Exhibit 6).

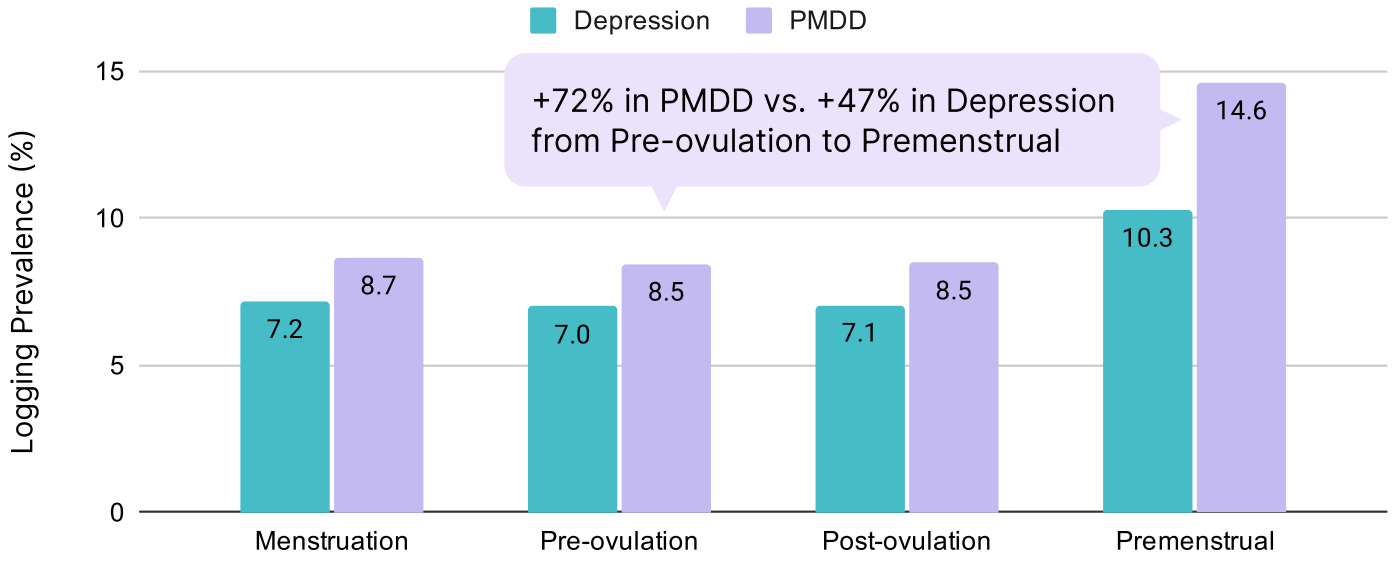
Data shows similar trends for other moods: negative, low energy (depressive) moods increase more sharply in PMDD (+34% from Pre-ovulation to Premenstrual vs. +15% in Depression) and positive, high energy (excited) mood decreases more sharply in PMDD (-35% vs. -21%).

PMDD is not simply a more severe form of depression. It is a cycle-amplified condition, characterized by rapid symptom escalation and decline within a defined window.

Exhibit 6

Anxious mood increases more sharply in PMDD than in Depression

Negative, High Energy (Anxious) Mood Across Cycle Phases



Source: Aavia Proprietary Data

Aavia Flags PMDD in Under 100 Days. The Healthcare System Takes 12 Years.

Aavia combines DSM diagnostic criteria with its proprietary symptom co-occurrence data to identify members whose symptom profiles match PMDD across at least three consecutive cycles. The algorithm compares symptom prevalence and clustering half-phase by half-phase, requiring not just the presence of symptoms but the specific pattern of co-occurrence that distinguishes PMDD from baseline and from other conditions. Aavia's platform classifies members as low, medium, or high likelihood and notifies them so they can seek better care.

On average, **Aavia flags members in fewer than 100 days** from the start of logging (average: 96.4 days, median: 88 days). In practice, flagging typically occurs within 3 months, with the longest observed timeline to date at 6 months. By contrast, traditional clinical diagnosis of PMDD can take an average of 12 years[13], highlighting the advantage of real-world, daily-level data.

Healthcare System:

12 years to diagnose PMDD

Aavia:

<100 days to flag PMDD

The flagging is already working: 12% of all Aavia members surveyed self-reported that they have received better care from their doctors as a direct result of Aavia's trend reports and/or condition flagging.

Both members and providers have shared how Aavia helped at the doctor's office:

> Thanks to Aavia and its algorithms and monitoring, I found out there is something not ok which I couldn't figure out for many years. It wasn't all in my head. Now I am on meds and omg I can live again! No more hardcore PMDD.
>
> **- AAVIA MEMBER, 28**

> When my patients come to me with a new recurring symptom, I routinely recommend they track... Aavia makes it incredibly easy to see their tracked patterns of symptoms in relation to their menstrual cycle, which helps me not only accurately diagnose them, but also focus potential treatment options.
>
> **- DR. STACI TANOUYE, MD, FACOG**

Aavia is not just flagging conditions for members. It is giving both patients and their physicians a shared framework for recognizing hormonal patterns and asking better clinical questions.

WHAT IT ENABLES

Diagnostic timelines that often take years are not a clinical inevitability. Identifying condition-specific symptom fingerprints at the earliest possible stage changes what is possible in trial recruitment, diagnostic algorithm development, and early intervention design. The same architecture that flags PMDD is extensible to conditions including PCOS, endometriosis, and menstrual migraines. The dataset is already built. The algorithms are what makes it possible.

6. Most Medications Women Take Were Never Studied Against the Hormone Cycle

Sex-specific dosing is rarely reflected in drug labels, with exceptions like zolpidem (Ambien), where the FDA required a lower dose for women due to higher blood levels and next-day impairment[25]. Yet, a PubMed 2020 analysis identified 86 drugs that affect women differently than men, often resulting in stronger effects and more adverse reactions[26].

Beyond sex differences, most drug trials are not designed to ask cycle-anchored questions: whether efficacy or side-effect profiles change across cycle phases, whether symptoms worsen in specific half-phases, or whether cycle regularity itself is disrupted. For the vast majority of medications women take, these questions remain largely unanswered.

What's Missing:

Sex-based differences are rarely translated into dosing

Most drug trials are not designed to ask **cycle-anchored questions**

Each of the 11 medications a member can log in Aavia sits on top of a rich foundation of data from 11 health categories. This means Aavia can observe at population scale how different medications correlate with shifts in symptom burden, mood trajectory, and cycle regularity across the hormone cycle.

Birth Control Triggers a Month 1 Symptom Spike That No Package Insert Documents

The conversation around birth control has shifted dramatically. According to the 2024 KFF Women's Health Survey, half of women ages 18 to 25 have encountered birth control content on social media in the past year, and 1 in 7 say they made a change or considered making a change to their method because of it[27]. Much of that content is anecdotal, unverified, and driving decisions without real-world evidence behind it.

Starting a new birth control method is often described to have a 3 to 6 month adjustment period, but what that transition actually looks like in day-to-day life is not well documented. To understand this, Aavia tracked over 1,400 members month-by-month for 12 months following method initiation.

Aavia's data reveals that an initial "shock" increase in symptoms is common across methods, but the magnitude of that increase and the recovery curve differ meaningfully by method.

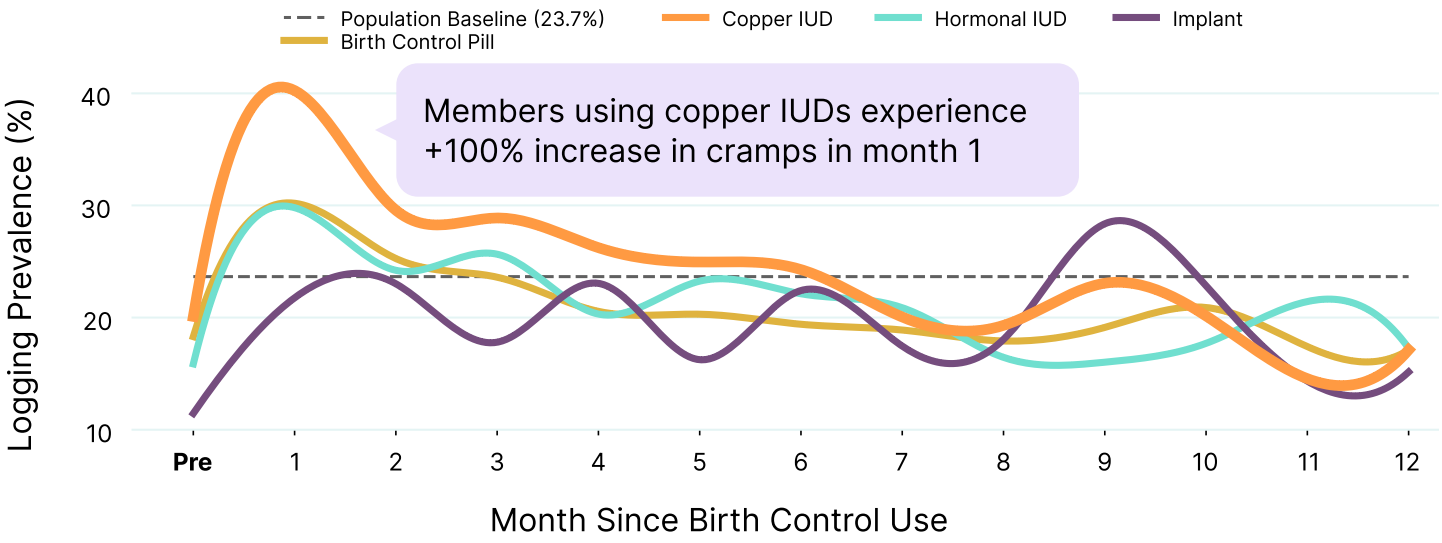
For example, members using copper IUDs reported a sharp increase in menstrual cramps, rising from 20.1% pre-start to 40.2% in month 1 (+100%), before declining to 17.1% by month 12 (Exhibit 7).

In contrast, members using the implant began with a lower pre-start cramp rate of 11.4%, and experienced a smaller +90% "shock" increase in month 1. Their cramps declined more quickly, settling back down to 15.1% by month 12.

Exhibit 7

Birth control methods show unique month 1 "shock" spikes in menstrual cramps, followed by declines

Menstrual Cramps Progression with Different Birth Control Types



Source: Aavia Proprietary Data

Notably, pre-start symptom levels differ across birth control methods, suggesting that members selecting different methods may have distinct underlying symptom profiles prior to starting birth control. Evaluating symptom trajectories for a method relative to its own pre-start value, rather than against a single baseline population average, captures the full range of real-world experiences, including individuals whose symptoms do not follow expected adjustment timelines. This creates a clearer picture of what constitutes a "typical" vs. "atypical" adjustment, which is not well-defined in traditional clinical literature.

WHAT IT ENABLES

The copper IUD cramp trajectory from 20.1% to 40.2% in month 1 and back to 17.1% by month 12 does not appear in any package insert. It exists primarily in the logged experience of the women who went through it. Aavia captures not just the average trajectory but the distribution around it, including the members who do not follow expected recovery timelines and may need follow-up. That is the scale and daily-level detail at which real-world contraceptive evidence has never been available.

GLP-1s and the Hormone Cycle: The Most Urgent Open Question in Women's Metabolic Health

Glucagon-like peptide-1 receptor agonists (commonly referred to as GLP-1s) are the fastest growing drug class in modern medicine. Millions of women are on them for weight management, metabolic health, and increasingly, hormone-related conditions[28], yet there are currently no clear answers to: Do they cause cycles to become irregular? Do they worsen cycle-related symptoms? Do their effects differ depending on when in her cycle she takes them?

The stakes are especially high for women with PCOS, a fundamentally metabolic condition linked to insulin resistance[29]. GLP-1s, which directly target this pathway, are increasingly being prescribed to this population as a metabolic intervention.

7x

increase in U.S. GLP-1 prescriptions among women with PCOS since 2021[30]

But PCOS already disrupts cycle regularity, symptom patterns, and hormone balance in ways that vary from woman to woman. Whether GLP-1s improve, worsen, or simply shift those patterns is unknown, and the answer matters enormously for the tens of millions of women with PCOS who may be candidates for this drug class.

Further, early research into GLP-1 combination therapies suggests enhanced outcomes for metabolic, cardiovascular, and potentially reproductive health conditions, though evidence specific to the hormone cycle remains limited[31]. What remains largely unstudied is how these combinations interact with hormone cycles specifically. For a woman taking a GLP-1 alongside an antidepressant, a hormonal contraceptive, or a migraine medication, the cycle-phase context of those interactions is a question that current clinical infrastructure is not designed to answer.

Aavia captures all of them simultaneously, across a member base already using these drug combinations in real life, alongside the health indicators members log. Aavia launched medication logging in mid-March 2026. The infrastructure is built. The data is accruing now.

The dataset captures:

- **Start and stop dates**
- **Dose changes**
- **Brand**
- **Adherence**

As GLP-1 adoption and tracking grows within the member base, Aavia will be among the first platforms with cycle-anchored, lived-experience outcome data on this drug class.

WHAT IT ENABLES

As the $100B GLP-1 market expands, a critical gap remains: no clinical dataset tracks how these drugs affect the hormone cycle or vice versa. Pharma companies are making label, dosing, and trial decisions without accounting for the variable that may determine real-world outcomes. As real-world data is increasingly accepted by the FDA for regulatory submissions and label expansion[32], Aavia's cycle-anchored dataset is positioned to contribute to GLP-1s.

7. Aavia Identifies Trial Participants Before They Have a Diagnosis

Aavia's dataset inverts the traditional model of trial recruitment.

Traditional Model
Limited pool, slow, and expensive[5]

Diagnosed patients in registries
Requires a woman to already be diagnosed, in the system, and seeking care

↓

Clinical trial recruitment
Misses pre-clinical population entirely

vs.

Aavia Model
Larger pool, fast, and lower cost per recruit

Prediagnostic candidate pool
Detects condition-specific symptom fingerprint and identifies members months before a clinical label

↓

Consent-based opt-in
Enables direct, privacy-preserving outreach within platform

Importantly, this operates within a privacy-preserving, consent-based framework. Aavia never shares individual member data with third parties. Eligible participants can be identified using de-identified data, and outreach would occur directly within Aavia's platform. Members can then decide whether to opt in and share their information with a study sponsor.

WHAT IT ENABLES

The ability to reach a pre-qualified, privacy-consenting population months before clinical presentation is not a feature of the platform. It is a structural cost and time advantage in drug development that no trial registry or patient advocacy database can replicate.

It also changes what hypotheses are worth testing. Observational signal at this scale and level of detail does not replace clinical trials. It tells you which ones are worth running.

8. The Language Women Use Before Entering the Healthcare System Is Missing From Datasets

Community forum posts. Member journal entries. An AI model fielding thousands of conversations about hormone health.

This is not passive data. This is women in the middle of a health experience they cannot name, reaching for language before the healthcare system has given them any.

The most common words in Aavia's community forum are:

"help"

18,452 times, 1 in 4 posts

Urgent, unresolved need rather than passive observation

"normal"

10,466 times

"Is it normal that I have suicidal ideation before my period? Is yellow discharge normal?"

"scared"

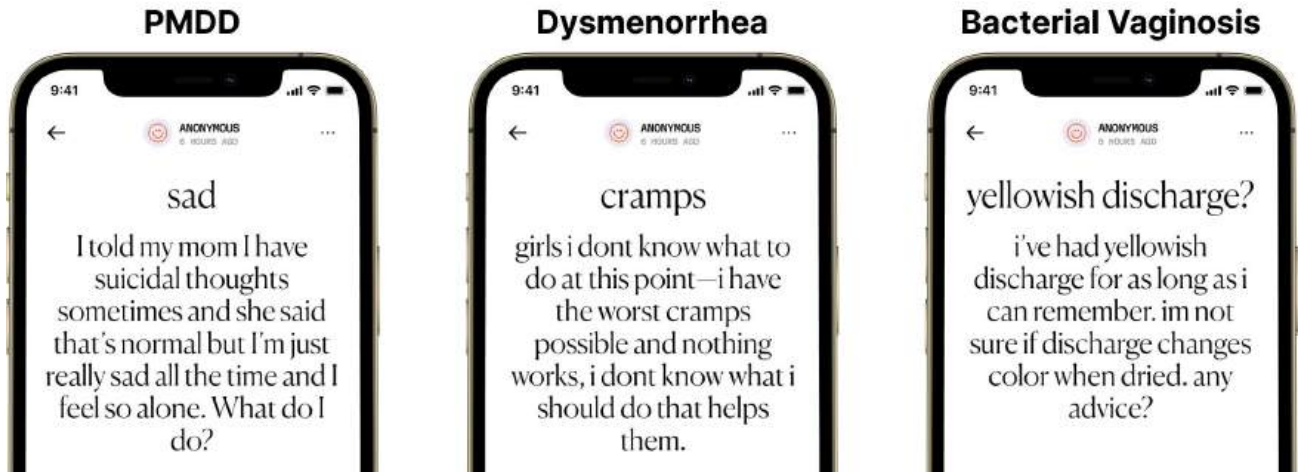
8,053 times

Often associated with unexplained symptoms

And the posts reveal consistent patterns:

Navigation of care and treatment	"pregnant/pregnancy," "birth control," "doctor/gyno"	**26,164 times**
Emotional distress	"worried/worry," "anxious/anxiety," "depressed/depression"	**12,016 times**
Symptom burden in plain language	"pain," "hurt," "tired"	**9,844 times**

Patients don't speak in clinical terms and that is missing from training datasets:



Source: Aavia Community Forum Posts

A similar pattern is visible in how members use Aavia's AI model to build personalized relief plans. In addition to "period," the most prominent terms used are **"help"** and **"change,"** showing that members are not just tracking their symptoms. They are actively trying to solve a problem the healthcare system has not solved for them.

Source: Aavia Proprietary Data

These are not just keywords. They show how women articulate symptoms before diagnosis, how that language evolves over time, and where the healthcare system fails to provide clarity.

WHAT IT ENABLES

The next generation of health intelligence tools, whether coaching agents, recommendation engines, or diagnostic support systems, will only reflect how women actually experience their health if they were trained on language from before a clinical label exists. Aavia's unstructured data is that layer: pre-diagnostic, at population scale, in the words women use before the healthcare system gives them any. That is what makes the difference between a health tool that sounds like a medical record and one that actually understands what a woman is trying to say.

9. Women Are Running Their Own Clinical Trials. Aavia Is Measuring the Results

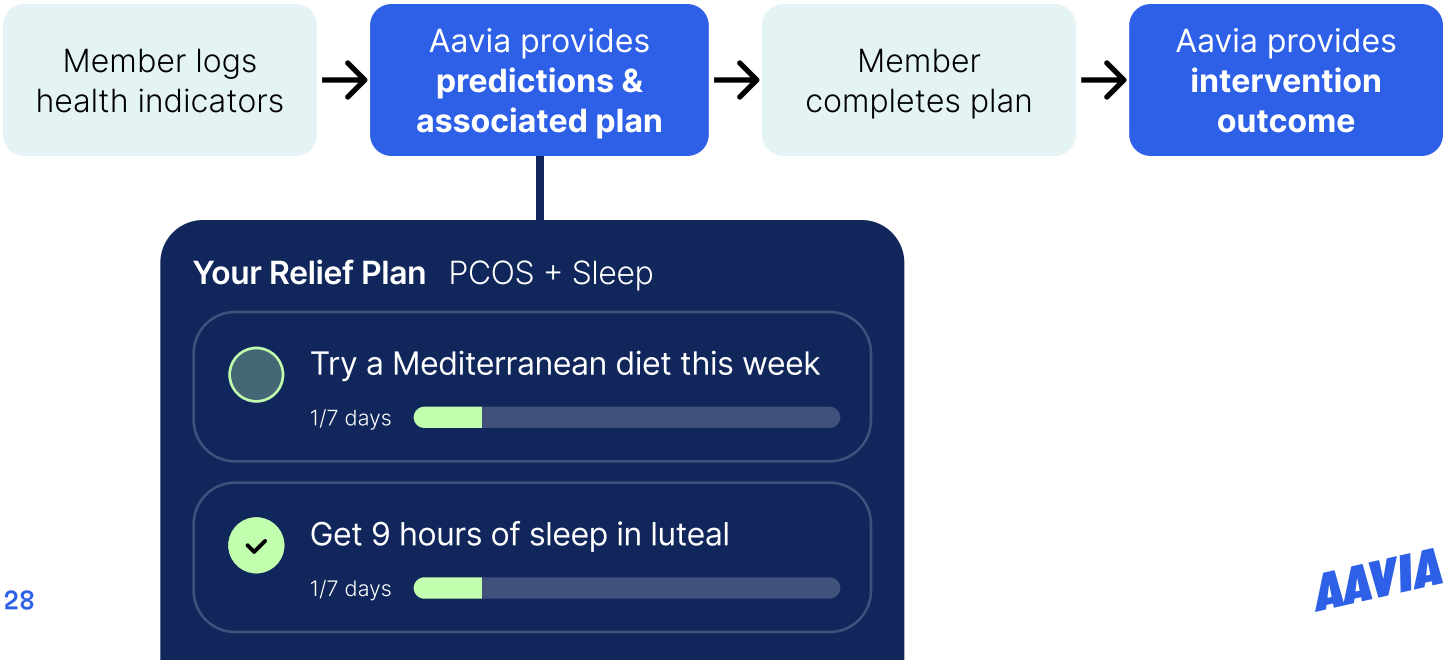
Clinical research has rarely been designed to ask one of the most important questions in women's health: not whether an intervention works, but whether it works for her.

There is limited real-world evidence on how to manage hormone-related symptoms, and almost none that captures which interventions work for which individuals, under which conditions. In practice, this leaves women to figure it out themselves.

One Aavia member with PCOS shared her experience in dealing with symptoms before Aavia:

> My worst experiences were when doctors prescribed different medications, birth control, and spironolactone. I was gaslighting myself for years that they were working when they weren't. When I started to dial in on lifestyle changes, I actually saw results much quicker. Looking back, I wish I got off the meds quicker and knew that while lifestyle changes take longer, they were more sustainable in the long run.
>
> **- AAVIA MEMBER, 27**

Aavia transforms that experimentation into measurable evidence.



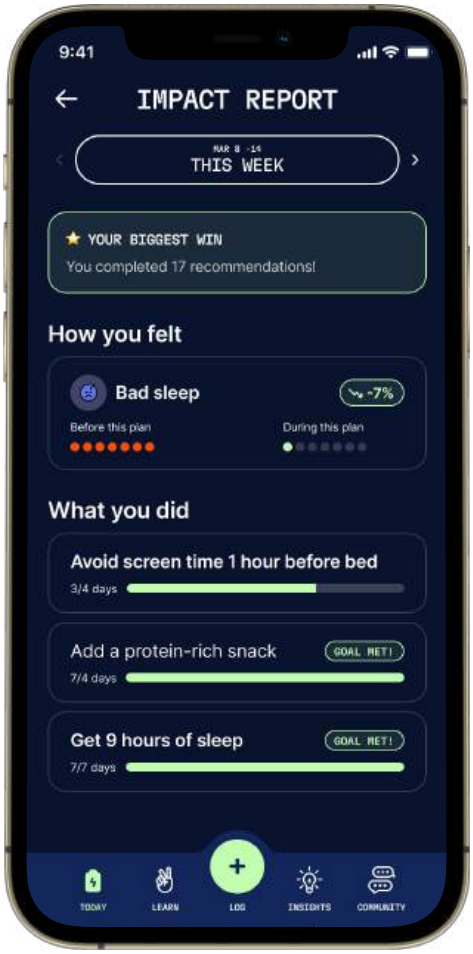
Members are actively adapting and iterating on their health strategies in real time:

> *Only rest/supplements for today. I'm getting results back and will have a clearer plan tomorrow*

> *I am a professional soccer player. Right now I am rehabbing from a hamstring injury. Once I'm back, I have high intensity trainings and lifts*

The result is a growing body of real-world individual-level outcome data on what interventions work, for what symptoms, and at what point in the cycle.

Sleep quality is highly correlated with hormonal and metabolic function[33], making it one of the highest-impact targets for cycle-anchored intervention. Aavia's AI model provides personalized sleep recommendations tied to cycle phase. In just the first three weeks after launch, early results showed a **7% improvement in member-reported sleep quality**, driven by simple behavioral nudges (e.g., reducing screen time before bed or adding a protein-rich snack). These are positive early signals and begin a scalable path to building a real-world, cycle-anchored intervention outcomes dataset in women's health.



WHAT IT ENABLES

Individual-level outcome data, anchored to cycle phase, is a different category of evidence than population averages. It is what makes the difference between knowing that yoga reduces cramps on average and knowing whether it reduces cramps for this woman, in her luteal phase, given her specific symptom profile. That level of detail makes recommendations personalized, actionable, and potentially clinically meaningful. The infrastructure to generate it at scale is already built.

10. The Commercial Questions Only Aavia Can Answer

The findings in this report represent a fraction of what Aavia's dataset can surface. Each question below can be answered within 48 hours, broken down by population subgroups where relevant.

A. Pharma, Biotech, and Clinical Trial Development

Aavia's dataset is not a clinical endpoint. It is the signal that tells pharma where to invest, which indications to pursue, and where existing trial design has blind spots it did not know existed.

- Which women are already exhibiting the pre-diagnostic symptom fingerprints of hormone conditions, how early can they be identified before entering the healthcare system, and how quickly can Aavia match a cohort to specific symptom severity criteria before a clinical diagnosis exists?
- How does a drug's efficacy or side-effect profile shift across the four cycle half-phases, and what does a one-size-fits-all dosage actually cost in disease burden that trials are missing?
- How do PMDD symptom clusters differ from PMS clusters at the daily level, and what does that mean for trial inclusion criteria?
- What language do women use to describe hormone symptoms before they have a clinical diagnosis, and how does that language evolve as symptoms intensify, so that the patient voice informs trial endpoints and recruitment messaging?
- How do medications including GLP-1s, antidepressants, stimulants and hormonal contraceptives correlate with shifts in symptom burden, mood trajectory, and cycle regularity?

Clinical trials tell you whether a drug works. Aavia tells you what it feels like to be a woman taking it, every day, anchored to her cycle.

OUTCOME

Pre-diagnostic recruitment at a scale no registry can reach, making it faster and cheaper, real-world evidence that extends beyond clinical endpoints, and cycle-anchored signal that corrects active design gaps in current trials.

B. AI, Health Data Infrastructure, and Real-World Evidence

Most major health AI models today are trained on cycle-agnostic data[7], making them structurally less accurate for half the population. Aavia's dataset is the training layer that corrects that gap. The daily-level detail distinguishes a supplementary data layer from a diagnostic one, and it captures the preconception behavioral baseline missing from profiles currently on the market. The unstructured data is the qualitative layer that makes language models for women's health actually reflect how women talk about their health.

- What training data is required for health AI models to perform reliably for women, given cycle-driven variability in mood, pain, sleep, skin, and appetite?
- How does Aavia's unstructured data complement and extend profiles built from EHR and claims data?
- What does the preconception behavioral health baseline look like across hormone conditions, and how does that cohort's symptom profile today predict their diagnostic and treatment trajectories over the next decade?
- What does a real-world evaluation dataset for hormone health look like, and how do Aavia's population baselines map onto existing diagnostic codes for PCOS, PMDD, and endometriosis?

Traditional datasets only capture women once they enter the healthcare system. Aavia captures the years before they do.

OUTCOME

More accurate models, differentiated datasets with high-resolution subgroup visibility, and infrastructure that reflects the real-world complexity of women’s health.

C. Women's Health Virtual Care and Diagnostics

The effectiveness of virtual care platforms depends on the quality of behavioral data available to them. Most operate without cycle-phase context, symptom co-occurrence patterns, or any longitudinal view of what a member experiences between visits. This matters most for long-term care platforms, where the value of between-visit intelligence compounds across a member relationship.

- Which symptom clusters, logged over 14 days, most reliably predict conversion to a specific diagnostic test, and how does that signal differ for hormone panels, vaginal health diagnostics, migraine workups, or dermatology referrals?
- What is the daily symptom profile of a member in the 30 days before she books a telehealth visit, and how does that profile differ by population subgroup and cycle phase?
- How does cramp severity and co-occurring symptom burden vary across birth control methods in the first six months, and which transitions correlate with the highest likelihood of follow-up care?
- What are the most common unmet needs expressed by members in the weeks before they seek care? What context does a member bring into a visit that no intake form captures, and how does that change diagnosis or treatment decisions?

A virtual care platform knows when a member books an appointment. Aavia identifies the symptom clusters that led to it. The community and journal data add what no structured logs capture: what she was asking, what she was scared of, and what language she was using before she had a diagnosis to name it. Daily-level detail enables predictive alerts and staged interventions before a crisis, not after.

OUTCOME

Higher conversion rates on diagnostics, better patient-provider matching, more efficient care pathways, and a pre-visit and between-visit context layer that improves both diagnosis accuracy and member retention / LTV.

D. Wearables and Connected Devices

Wearables and connected devices generate rich physiological signals with almost no reliable subjective context. While most offer manual logging, some even cycle-anchored, active engagement is a barrier[8]. Aavia members log health indicators four times per week on average because the platform is built around their cycle and delivers personalized value in return.

- What does an HRV dip actually mean to a woman on cycle day 25 versus cycle day 10, and how does the subjective experience differ by age?
- When does the same physiological signal correspond to completely different lived experiences, and what subjective data is required to distinguish them?
- How do migraine frequency and severity map onto physiological variability windows, and what do the pre-migraine symptom fingerprints look like in the days before onset?
- How does sleep quality correlate with self-reported fatigue, cramp severity, and mood burden across cycle phases, and when does that correlation diverge from population norms?
- When a physiological anomaly occurs, what words do women use to describe it in their own language, and how does that subjective framing differ across cycle phases?

A wearable or connected device can detect that something has changed. Aavia can tell you what it meant to this person, on this day, in this phase of her cycle. The subjective context layer is what transforms hardware from a tracking device into a genuinely personal health tool.

OUTCOME

A subjective context layer with the engagement density to actually interpret physiological signals at the individual level, stronger user retention through personalized actionable insights, and increased product stickiness through context-aware personalization that passive physiological signals alone cannot deliver.

E. Performance, Longevity, and Behavior Change (Weight Loss, Sleep, Fitness, Mental Health)

Apps and platforms are building personalization engines for women without accounting for where she is in her hormone cycle. The hormone cycle drives metabolic rate[34], sleep architecture[35], recovery capacity, appetite regulation, and cognitive resilience in ways that shift meaningfully across a 28-day window. Static models cannot account for this.

- How do metabolic rate, appetite, and cravings shift across cycle phases, and what does that mean for nutrition and weight management interventions built around static daily targets?
- Which phase transitions produce the most significant disruptions in sleep onset and next-day cognitive performance, and how does that differ for women with PMDD?
- What behavioral signals, such as skipped workouts, appetite changes, or disrupted sleep, most reliably precede a significant mood episode, and how far in advance do they appear?
- How do members using GLP-1s, antidepressants, or hormonal contraceptives log differently from those without, phase by phase, and in which half-phase do they cause the greatest difference from baseline?

A weight loss platform that does not know a member is in Premenstrual does not know why her appetite spiked or why she abandoned her plan. A sleep app that does not know she is on cycle day 24 is missing the biological reason her sleep onset time increased. A fitness platform prescribing the same workout intensity every day is working against her physiology half of the time. Daily-level detail is what turns cycle awareness from a feature into a personalization engine that actually works.

OUTCOME

Personalization engines that reflect real female biology, higher engagement and retention through cycle-aware recommendations, and a reduction in a primary driver of churn for wellness platforms: one-size-fits-all interventions not tailored to daily needs[36].

WANT TO DIVE DEEPER?

The questions that matter most will depend on your pipeline, patient population, and the gaps your current datasets cannot fill. Aavia invites strategics for a Data Deep Dive. Reach out to **team@aavia.io**.

11. In Summary

The findings in this report represent a fraction of what this dataset can surface. The full dataset spans 250M+ longitudinal data points across 11 health categories, anchored to cycle phase, broken down by age, ethnicity, and diagnosed conditions, as well as intervention outcomes and unstructured data.

The findings and questions asked here are illustrative. The infrastructure that answers them is not.

Three properties make this dataset structurally irreplaceable, and they are visible in everything the preceding sections showed. It is:

Longitudinal

where clinical data is episodic. It captures the months and years before a woman enters the healthcare system rather than the moment she does.

Cycle-anchored

where every other behavioral dataset assumes the same woman every day. It makes visible the patterns that only emerge when biology is treated as the variable it actually is.

Built on trust

that was earned and cannot be bought or manufactured, by a community that logged years of personal health history into Aavia specifically because they knew Aavia would do something meaningful with it.

That trust is what makes this dataset pre-diagnostic. Aavia captures the years before a woman enters the healthcare system, before she has a label, before she appears in a registry, before she books an appointment. The healthcare system sees her at the moment of crisis. Aavia sees the build. That is not a feature of the platform. It is a structural property of when and how the data was collected.

What that means in practice differs by who is reading this.

For **pharma and biotech**, it is the population of women exhibiting condition-specific symptom phenotypes months before any clinical infrastructure can see them, available for hypothesis generation, trial recruitment, and real-world evidence at a scale no existing clinical infrastructure can provide.

For **AI and health data platforms**, it is the foundational training layer that corrects the cycle-agnostic bias built into health models currently on the market.

For **virtual care and diagnostics platforms**, it is the pre-visit intelligence layer that reveals what drove a patient to seek care and the between-visit layer that provides predictive alerts and improves intervention plans.

For **wearables and connected devices**, it is the subjective context layer that transforms a physiological reading into something personally meaningful, with the engagement density to sustain it.

For **performance, longevity, and behavior change platforms**, it is the hormone intelligence layer that explains why most personalization engines fail women on half the days of the month.

This dataset took three years to build. As the population baseline expands, it does not just grow. It compounds. A member logging today adds to a record that makes every earlier data point more interpretable. The dataset transitions from a historical archive to a predictive engine, becoming more precise, more defensible, and more valuable with every cycle logged.

The hormone cycle has been a blind spot in women's health data for decades. Aavia turns it into the most actionable dataset in women's health.

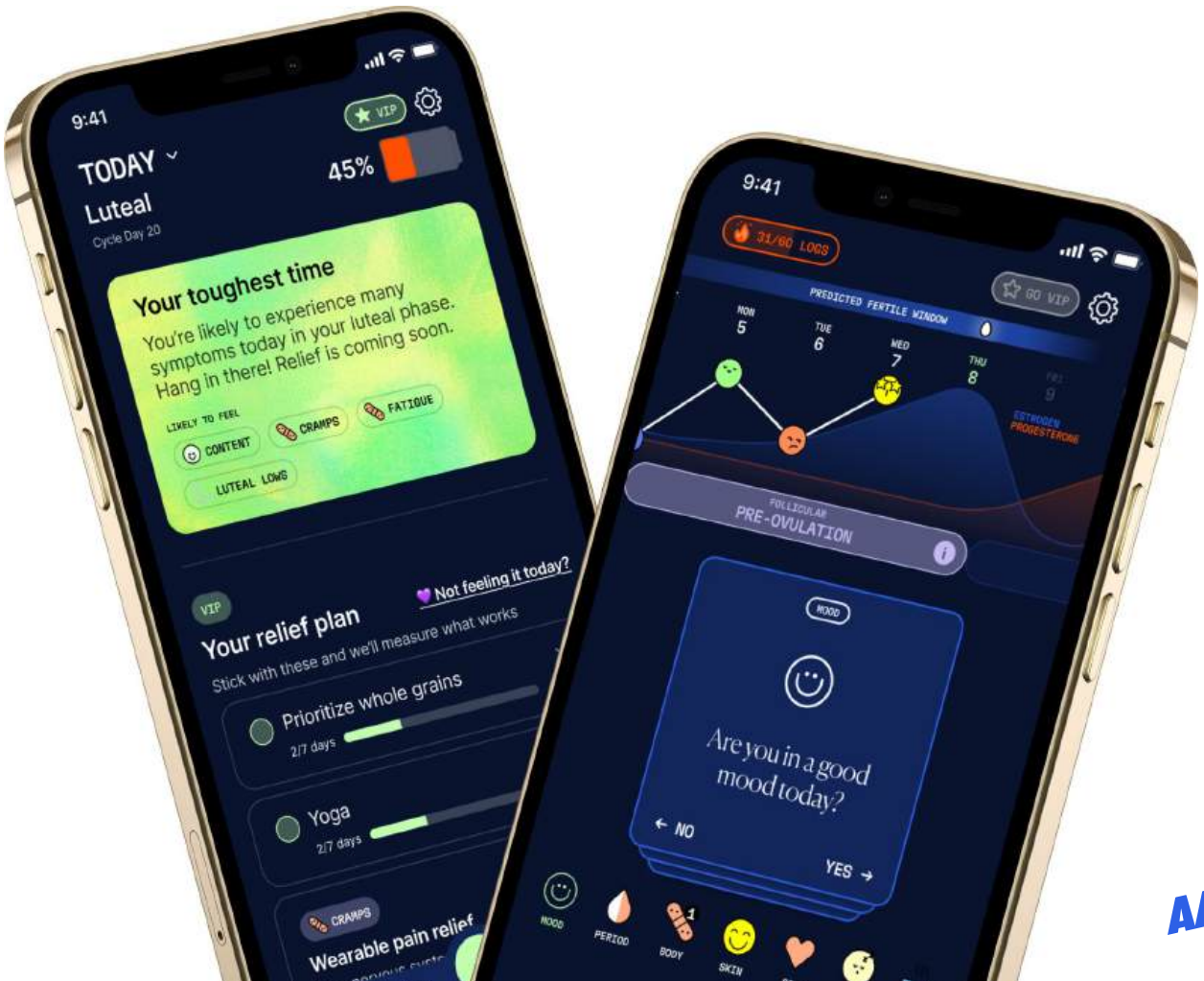
12. About Aavia

Founded out of MIT, Aavia is a science-backed women's health app and data platform. Aavia is backed by 776, Asset Management Ventures, and Starting Line, among others, with strategic investors including Halle Tecco (cofounder Cofertility; founder Natalist; founder Rock Health), Julia Cheek (founder Everly Health), and John Capodilupo (cofounder Whoop; cofounder Throne). Aavia was one of ten companies globally selected for the 2024 Mayo Clinic and ASU MedTech Accelerator. Medical advisors include Dr. Staci Tanouye, MD, FACOG, a board-certified gynecologist and Dr. Uma Lerner, MD, a board-certified reproductive health psychiatrist.

Aavia members log health indicators across 11 categories an average of four times per week. They receive daily mental and physical health predictions, track personal health trends over time, and get AI-driven recommendations personalized to their symptoms and phase.

The depth of this dataset exists because members trust Aavia with their data and to translate their data into actionable insights. All data in this report is de-identified and aggregated. Aavia does not profit from individual health information.

Note on language: Aavia uses the terms "women" and "she/her" to reference its member community in this report, while recognizing that not all people who have ovaries identify as women or use she/her as their pronouns.



13. Appendix

Hormone Conditions

Dysmenorrhea

Physical pain associated with menstruation, typically occurring 1 to 2 days per cycle. Primary dysmenorrhea is caused by prostaglandins, while secondary dysmenorrhea results from underlying conditions such as endometriosis.

Endometriosis

A condition where endometrial-like tissue grows outside the uterus, causing chronic pain and potential fertility complications.

Menstrual migraines

A subtype of migraine linked to hormonal fluctuations across the hormone cycle. It affects approximately 60% of migraines and is frequently misdiagnosed.

Polycystic Ovary Syndrome (PCOS)

An endocrine and metabolic condition where ovaries produce excess androgens, leading to polycystic ovaries, irregular cycles, and/or symptoms like hirsutism (excess growth of dark coarse hair in male-pattern areas).

Premenstrual Dysphoric Disorder (PMDD)

A severe form of premenstrual disorder with symptoms peaking in the 1 to 2 weeks before menstruation. It is associated with heightened sensitivity to hormonal fluctuations, particularly affecting mood.

Premenstrual Syndrome (PMS)

A condition involving physical and emotional symptoms such as bloating, fatigue, and mood changes in the 1 to 2 weeks before menstruation.

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