VITALS VAULT

A VITALS VAULT FIELD GUIDE

Make sense of perimenopause blood tests in 20 minutes

For women in their late 30s to 50s: what labs can and cannot show, and a log to bring to your visit

8

CHAPTERS

20 minutes

Every claim is tied to a named study. References are on the last page.

Educational only. Not medical advice.

THIS GUIDE IS FOR YOU IF

- You are in your late 30s to 50s and have symptoms you cannot quite explain.
- You want to know what one blood test can and cannot say about perimenopause.
- You want to know which other labs can mimic these symptoms.
- You want a symptom and cycle log plus questions for your appointment.

HOW TO USE IT

Read one chapter at a time. Each opens with the one thing to remember. Tables show typical ranges printed by labs or reported in studies. Ranges differ by lab and are not personal targets. Keep the log in the last chapter for a cycle or two before your visit. Nothing here is a diagnosis.

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CHAPTER 1

The stages of perimenopause in plain words

THE ONE THING TO REMEMBER

Perimenopause is a stretch of changing cycles before your last period, and no single lab value marks it.

Think of a change of season, not a light switch. Perimenopause (the years before your last period) can begin 2 to 10 years before menopause. Menopause is only known in hindsight: it is 12 months in a row with no period. It usually arrives between 45 and 52, though ages 40 to 60 are seen.

Stage	How researchers define it	Notes
Early transition	Cycle lengths differ by 7 or more days	Cycles get less predictable
Late transition	Gaps of 60 or more days between periods	May last 1 to 3 years
Late perimenopause	No period for 3 to 11 months	Wording from the SWAN staging
Menopause	12 months in a row with no period	Known only in hindsight
Early postmenopause	Up to 24 months, or 2 to 6 years	Staging systems differ on length

WHAT A STUDY FOUND

Johnson 2019, as summarized in a clinical review, reports that menopause occurs between 40 and 60, usually at 45 to 52, and that more than 80% of women have disruptive symptoms that can last 15 years or more. The summary gives no sample size. These are group estimates, so your own course can differ.

Johnson et al., 2019

COMMON BELIEF

"Perimenopause starts when your periods stop."

WHAT THE EVIDENCE SAYS

It is the opposite. Perimenopause is the run-up, with cycles that change in length while you still bleed. Once you have gone 12 months in a row without a period, you are past menopause and in postmenopause.

12 **Months in a row with no period that define menopause. A single hormone level cannot mark that moment.**

ASK YOUR CLINICIAN

- Based on my cycles, which stage do you think I am in, and why?
- Could anything other than perimenopause explain my cycle changes?
- Which symptoms should I log before our next visit?

CHAPTER 2

Why FSH and estradiol swing, and what one result means

THE ONE THING TO REMEMBER

One FSH or estradiol result is a single frame of a moving picture, so it cannot confirm or rule out perimenopause.

Think of a thermostat with a faulty sensor. As the egg supply shrinks, the brain pushes the ovaries harder, so FSH (a brain signal to the ovaries) climbs. The ovaries can overshoot, and estradiol (the main estrogen) can spike, then drop. In early transition, estradiol and progesterone are often unaffected unless irregular ovulation makes estradiol swing, with low progesterone in the second half of the cycle.

Cycle phase	FSH (mIU/mL)	Estradiol (pg/mL)
Early in the cycle (follicular)	2.5–10.2	19–144
Mid-cycle	3.1–17.7	64–357
Second half (luteal)	1.5–9.1	56–214
Postmenopausal	23–116.3	31 or under

WHAT A STUDY FOUND

Joffe 2020 (estradiol variability and mood) and Chiang 2019 (hormone variability and hot flashes) both link symptom severity to how much hormones vary, not only to how low they fall. The summary we drew on gives no sample sizes. The direction is clear. The size of the effect is not.

Joffe et al., 2020; Chiang et al., 2019

COMMON BELIEF

"A normal estradiol result means it cannot be perimenopause."

WHAT THE EVIDENCE SAYS

One clinician described a patient whose estradiol was 200 on day 1 and 900 on day 10 of the same cycle. That is a single case, not a study. The same clinician sees results flip between 3-month checks, from very high estradiol with low FSH to the reverse.

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Late in the transition, FSH can pass 25 IU/L and AMH (a hormone from egg follicles) may be undetectable. Labs and studies draw this line in different places.

ASK YOUR CLINICIAN

- **Would a single FSH or estradiol result change what we do next?**
- **If we test, which cycle day do you want, and will we repeat it?**
- **Which lab will you use, so I can use the same one next time?**

CHAPTER 3

The look-alikes worth ruling out

THE ONE THING TO REMEMBER

Thyroid, iron, B12 and blood sugar problems can feel like perimenopause, and simple labs can check each one.

Think of a smoke alarm: it goes off for a fire, but also for burnt toast. Tiredness, low mood, hair thinning, irregular cycles and weight change fit perimenopause and other problems too. TSH (the thyroid's control signal from the brain) is the usual first thyroid screen. Symptoms alone cannot reliably identify an underactive thyroid, and menopause is the biggest look-alike.

Symptom	Look-alike to rule out	Lab to ask about
Tiredness, poor focus	Low iron stores, thyroid, low B12	Ferritin, TSH, B12
Hair thinning	Low iron stores, thyroid	Ferritin, TSH
Low mood, memory lapses	Thyroid, low B12	TSH, B12
Irregular or heavy cycles	Thyroid; iron loss from bleeding	TSH, ferritin
Sweats, racing heart	Overactive thyroid	TSH, then free T4 if TSH is off
Weight gain at the waist	Blood sugar change	Fasting glucose, HbA1c

WHAT A STUDY FOUND

Fedosov 2015 advised combining 2 to 4 markers, such as serum B12 plus MMA or homocysteine (chemicals that rise if B12 falls), because serum B12 alone may miss up to 45% of people who are deficient. Labs call about 200 pg/mL the low limit. Some authors argue for a higher floor. Experts disagree.

Fedosov et al., 2015

COMMON BELIEF

"A normal blood count means your iron is fine."

WHAT THE EVIDENCE SAYS

Iron can run low with normal hemoglobin. Ferritin (your iron storage protein) is the most reliable first marker, often read against a cutoff near 30 ug/L. Infection or inflammation can push ferritin falsely high, so a second iron test is often added.

5.7% **HbA1c (average blood sugar over months) of 5.7 to 6.4% is the prediabetes range, and 6.5% or above is diabetes (ADA 2021). Iron or B12 anemia and blood loss can skew it.**

WHAT A STUDY FOUND

Vanderpump 1995 followed 2,779 adults for 20 years. Doubling TSH from 2.5 to 5 mIU/L raised the chance of an underactive thyroid from 1% to 4%, higher still with thyroid antibodies. Standard labs call about 0.4 to 4.5 normal. Some argue for a lower ceiling, and illness and some medicines shift TSH.

Vanderpump et al., 1995

ASK YOUR CLINICIAN

- Can you check TSH, ferritin, B12 and HbA1c before we pin this on perimenopause?
- If my ferritin is low, how will we look for the cause?
- Do any of my medicines change these results?

CHAPTER 4

Cholesterol and heart markers across the transition

THE ONE THING TO REMEMBER

In large studies, LDL and other heart markers drift up around the final period, so your earlier results are a useful baseline.

Think of cholesterol as a bank balance: small yearly gains add up. The ovaries use LDL (a main cholesterol-carrying particle) to make estrogen, so when they stop, more LDL stays in the blood. Within a year of menopause, total cholesterol, LDL and ApoB (a count of cholesterol-carrying particles) can be substantially higher. Triglycerides (fat in the blood) tend to rise, and HDL (cholesterol-clearing particles) to fall.

WHAT A STUDY FOUND

SWAN (a long US midlife women study) followed 2,659 women. Average cholesterol rose 9.33 mg/dL from before the transition to late perimenopause, versus 6.52 mg/dL from 4.84 years of normal aging. Total cholesterol, LDL, triglycerides and Lp(a) (a largely inherited LDL-like particle) peaked in late perimenopause and early postmenopause. Observational.

Derby et al., SWAN, 2009

Madrid, 275 women (mg/dL)	Perimenopause	Postmenopause
Total cholesterol	205	214
LDL	122.7	134
HDL	66	62
Triglycerides	76	87.5
Fasting glucose	92	96

30–49%

Small, dense LDL particles can rise by this much around menopause, in studies pointing to menopause and not only age (Wang 2018; Ko 2020).

COMMON BELIEF

"Higher estradiol after menopause is always protective."

WHAT THE EVIDENCE SAYS

Not always. In 101 postmenopausal women not on hormones, average estradiol rose with body fat: 3.26 pg/mL at normal weight, 4.55 when overweight, 8 with obesity. More body fat also went with more inflammation and insulin resistance (Marchand 2018). Fat tissue makes estrogen.

WHAT A STUDY FOUND

In MESA (a large US heart study), 2,834 postmenopausal women were included. A higher testosterone-to-estradiol ratio went with more heart disease and heart failure, and higher estradiol with less heart disease. The ratio averaged 15.42 with heart disease and 11.55 without. Observational, and not a personal target.

Zhao et al., JACC, 2018

ASK YOUR CLINICIAN

- Can I get a lipid panel and ApoB now, as a baseline for later?
- Should Lp(a) be checked in my case, since it is largely inherited?
- How often should we repeat these as my cycles change?
- If menopause hormone therapy (a class of medicine) comes up, which baseline labs do you want first?

CHAPTER 5

Bone, and what blood tests do not show

THE ONE THING TO REMEMBER

Blood markers show how fast bone is being remade, not how much bone you have, so they cannot replace a bone scan.

Picture a warehouse. Blood markers count the trucks moving in and out right now. A DEXA (a low-dose X-ray bone scan) measures what is on the shelves. Estrogen restrains bone breakdown, so markers rise after menopause. Bone loss is fastest from one year before the last period to two years after: about 1.8 to 2.3% a year in the spine and 1 to 1.4% in the hip.

Marker (Honour 2018)	Premenopausal	Postmenopausal
CTX (bone breakdown, ng/mL)	0.19	0.31
P1NP (bone building, ng/mL)	30.1	41.3
Bone alkaline phosphatase	9.8	14.1
Osteocalcin (ng/mL)	17.9	24.5
25-OH vitamin D (ng/mL)	31.5	26.5
PTH (calcium-control hormone, pg/mL)	27	34.9

WHAT A STUDY FOUND

In SWAN, each doubling of FSH went with a 39% higher risk of significant spine bone loss and 27% at the femoral neck, while each halving of estradiol went with 10% and 12%. FSH flagged imminent bone loss better than estradiol. These are associations, and not every study agrees.

Shieh et al., SWAN, 2019

COMMON BELIEF

"A normal bone marker panel means your bones are fine."

WHAT THE EVIDENCE SAYS

Markers show turnover, not how much bone you have, and they do not diagnose osteoporosis. Liver or kidney disease can distort them. They are read against your own baseline, and bone scans can miss subtle changes too.

WHAT A STUDY FOUND

In 433 women, time since menopause mattered more than FSH or estradiol for osteoporosis (Yoldemir 2012). Urine NTx (a bone breakdown fragment) climbs sharply approaching menopause, then falls within 1 to 2 years but stays about 20% above premenopausal levels (Sowers 2013). The source gives no sample size for Sowers.

Yoldemir et al., 2012; Sowers et al., 2013

10% **Osteopenia is about a 10% drop in bone density from a young healthy adult, and osteoporosis about 25%. A T-score compares you with that adult, a Z-score with your age group.**

ASK YOUR CLINICIAN

- Do my age, family history and symptoms justify a bone scan now?
- Which bone-related labs, such as vitamin D and PTH, are worth checking?
- If I have a scan, can I see the hip and spine results, not just a summary?

CHAPTER 6

Sleep, mood and stress: what labs can and cannot show

THE ONE THING TO REMEMBER

Poor sleep, low mood and stress are real, but no single hormone test explains them, so your own record counts for more.

A blood draw is one frame of a film, and sleep and mood are the whole film. Hot flashes, night sweats and sleep disruption are the most disruptive symptoms for many women. Poor sleep is in turn linked with higher blood pressure, higher cholesterol risk and more insulin resistance. Many things besides hormones disturb sleep, such as pain, stress, a warm room or sleep apnea.

WHAT A STUDY FOUND

In 444 postmenopausal women, severe symptoms went with higher triglycerides, higher testosterone (for psychological symptoms and the total symptom score) and lower progesterone. The study is cross-sectional, so it cannot say which came first.

Kaya et al., 2017

Test	What it can show	What it cannot show
Morning cortisol (main stress hormone)	Where you sit on the daily curve	Whether stress causes your symptoms
Estradiol	Your level at one moment	Why symptoms vary, as swings matter too
Progesterone	A level tied to the cycle day	Why you sleep badly or feel low
TSH	A thyroid cause of fatigue and low mood	Whether perimenopause is also present

COMMON BELIEF

"Adrenal fatigue shows up on a cortisol test."

WHAT THE EVIDENCE SAYS

Adrenal fatigue is not a recognized diagnosis, and the idea that stress ends in adrenal exhaustion is a model, not an established pattern. Cortisol peaks on waking, falls toward midnight and rises within 15 minutes of acute stress, so time of draw changes the result.

WHAT A STUDY FOUND

Greendale 2020 found that melatonin (the sleep-timing hormone) falls from premenopause to postmenopause. The summary we drew on gives no sample size or values, so treat it as background, not as a reason to test.

Greendale et al., 2020

SLEEP AND MOOD SIGNS WORTH NOTING

- [ ] Trouble falling asleep or waking often
- [ ] Snoring or daytime sleepiness
- [ ] Night sweats that wake you
- [ ] Irritability, low mood or anxiety
- [ ] Brain fog or memory lapses

ASK YOUR CLINICIAN

- Could my sleep trouble have a cause other than hormones?
- Is a cortisol test useful for me, and at what time of day?
- Which symptoms should we treat as a priority, and which can we watch?

CHAPTER 7

Timing: which day of your cycle to test

THE ONE THING TO REMEMBER

Hormone and cholesterol results shift across a cycle and between labs, so match the day and the lab each time you repeat a test.

Comparing two results is like comparing two photos: it only works if both were taken from the same spot. Estradiol and progesterone rise and fall across a cycle, and reference ranges vary by lab and draw timing. Use the same lab to repeat a test. If your periods are irregular, write down the date of your last period and the cycle day of the draw.

Test	Timing to ask about	Why it matters
FSH and estradiol	Same cycle day each time; one clinician uses day 5	Estradiol runs 19–144 early, 64–357 mid-cycle
Progesterone	Mid-luteal phase (second half of the cycle)	Under 1.0 ng/mL before ovulation, 2.6–21.5 after
Cholesterol panel	Same point in each cycle, often during the period	Cholesterol shifts about 10 to 12 mg/dL in a cycle
Morning cortisol	In the morning, as ordered	It peaks on waking and falls toward midnight
Ferritin and TSH	Not during or right after an illness	Illness can raise ferritin, peaking in 3 to 5 days

10–12

The mg/dL swing in total and LDL cholesterol across a menstrual cycle, rising after the period and falling as estradiol peaks. Small, but enough to blur a repeat test.

WHAT A STUDY FOUND

Kruszynska 2017, summarized in a clinical review, reports that AMH fell from above 1.5 to below 0.2 ng/mL about 5.99 years before menopause in women 45 to 48, and about 9.94 years before in women 35 to 39. Smoking can bring menopause forward by up to three years. The summary gives no sample size.

Kruszynska et al., 2017

COMMON BELIEF

"Any day is fine for a hormone test."

WHAT THE EVIDENCE SAYS

For some markers the day matters a lot. Estradiol and progesterone move through the cycle, so a result means little without the cycle day beside it. For others, such as TSH and ferritin, illness matters more than the cycle.

BEFORE YOU BOOK A BLOOD DRAW

- [ ] Cycle day or date of last period noted
- [ ] Any illness in the last two weeks noted
- [ ] Same lab as last time, if possible
- [ ] Medicines and supplements written down

ASK YOUR CLINICIAN

- Which cycle day do you want for each test, and why?
- If my cycles are irregular, how will we pick the day?
- Can we repeat the test at the same lab so results compare?

CHAPTER 8

Your symptom log and questions page

THE ONE THING TO REMEMBER

Your own log of cycles and symptoms is the strongest evidence you can bring, because labs alone cannot name the stage.

Staging is built on your cycles. In research, early transition means cycle lengths that differ by 7 or more days, and late transition means gaps of 60 days or more. A log shows your clinician those patterns directly. The Menopause Rating Scale (a validated symptom checklist) sorts symptoms into three groups.

Symptom group	Examples from the scale
Body (somatic)	Hot flashes, joint and muscle aches, sleep trouble, heart discomfort
Mind (psychological)	Anxiety, low mood, exhaustion, irritability
Urinary and sexual	Bladder issues, vaginal dryness

CYCLE LOG

Date each period started _____

Length of each cycle in days _____

Days with heavy bleeding _____

Cycle days when symptoms peak _____

SYMPTOMS TO TRACK EACH WEEK

- [ ] Hot flashes or night sweats
- [ ] Sleep: hours and wake-ups
- [ ] Mood and energy
- [ ] Brain fog or memory lapses
- [ ] Joint aches or palpitations

WHAT A STUDY FOUND

STRAW+10 (a cycle-based staging system) defines stages by bleeding patterns: a difference of 7 or more days between consecutive cycle lengths marks early transition, and gaps of 60 or more days mark late transition, which may last 1 to 3 years. Early postmenopause lasts 2 to 6 years. Other systems draw the lines differently.

Harlow et al., STRAW+10, 2012

ASK YOUR CLINICIAN

- Here is my log. Which stage does it suggest to you?
- Which of my symptoms point to a cause other than perimenopause?
- Which labs, if any, will change what we do, and when do we repeat them?
- When should I come back, and what should prompt an earlier visit?

THE WHOLE GUIDE ON ONE PAGE

If you remember nothing else

1. Perimenopause is defined by changing cycles and later 12 months without a period, not by one lab value.
2. FSH and estradiol swing, so one result cannot confirm or rule out perimenopause. Repeat at the same lab.
3. Thyroid, iron, B12 and blood sugar problems can mimic symptoms. Ask about TSH, ferritin, B12 and HbA1c.
4. Around the final period, LDL, triglycerides and ApoB tend to rise. A baseline lipid panel helps later.
5. Bone markers show turnover, not density. A bone scan measures the bone itself.
6. No single test explains sleep, mood or stress. Cortisol and hormones need timing and context.
7. Write down the cycle day and the lab with every result so repeat tests can be compared.
8. Bring a cycle and symptom log. It shows a clinician what a single blood draw cannot.

WHAT THIS GUIDE CANNOT DO

This guide cannot say whether you are in perimenopause. That is a clinical judgment built on your age, cycles and symptoms. It cannot predict your own hormone, cholesterol or bone numbers, or say what any treatment would do for you. What you still lack is your own results, repeated over time with notes beside them. A clinician who knows your history has to interpret them.

A FREE NEXT STEP

Read our short free page on which hormone markers are worth looking at together, so your next blood draw answers a clearer question.

vitalsvault.com/lp/hormones

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This guide is educational. It is not medical advice and not a diagnosis, and it does not replace a clinician who knows your history. Study findings describe groups of people and may not apply to you.