

A PLANT-BASED COACHING GUIDE

Strong Through the *Change*

A science-checked manual for women before, during and after menopause: how your hormones really work, how to train for muscle and bone, and how to eat on plants to stay strong, lean and energized.

HORMONES EXPLAINED

TRAINING PROGRAMS

PLANT-BASED NUTRITION

EVERY CLAIM LABELED



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START HERE

Your Monday-morning start

If you read nothing else, do these steps this week. They carry most of the result in this guide, and each one points to the page that explains why.

TODAY · 20 MINUTES

- ☐ **Measure your waist** at the navel, take one photo, and write down your weight if you track it. This is your baseline.
- ☐ **Put three lifting days in your calendar** (for example Mon, Wed, Fri, 60 minutes). Pick Program A, B or C in Part 4.
- ☐ **Work out your protein number:** your weight in kg $\times 1.2 =$ ____ g, $\times 1.6 =$ ____ g. Aim between them (up to 2.0 g/kg while dieting). **TRIAL**
- ☐ **Add one 25–40 g protein serving to breakfast** (tofu scramble, soy yogurt plus a scoop, tempeh). Part 5 has the food table.

THIS WEEK

- ☐ **Lift three times and log every session.** Add a rep or a little weight each week.
- ☐ **Count your steps for 7 days,** then add 1,000 a day. Fix steps before you cut food.
- ☐ **Fix your sleep anchor:** same wake time every day, caffeine before noon, daylight within an hour of waking.
- ☐ **Vegan basics:** start B12 (at least 25 mcg a day or 2,000 mcg a week) and book a blood test for vitamin D, B12, ferritin and thyroid (TSH). **GUIDELINE**
- ☐ **Check in with your symptoms.** Hot flashes or poor sleep? Use the training guide in Part 3. Hormone therapy is a conversation with your doctor.

SKIP FOR NOW

Magnesium for sleep, soy pills for hot flashes, detoxes, and any 1,400-calorie plan. The evidence is weak or it costs you muscle. Put that energy into lifting, protein and sleep.

AFTER FOUR WEEKS

Re-measure your waist, compare your lifts, and read Parts 1 and 3 with your own numbers in hand. Want help? The last page shows how to reach me.

BEFORE YOU START

Who this guide is for

Women in their late 30s, 40s and 50s: cycles still regular (pre-menopause), starting to shift (peri-menopause), or behind you (menopause and post-menopause). You eat plant-based, or you want to. You want straight answers about hormones, training and food, not fear and not fads.

How to read the evidence in this guide

Every claim carries a label so you know how much weight to give it.

Label	What it means
TRIAL	Randomized controlled trials, or a pooled analysis of them. The strongest kind of evidence.
OBSERVED	Researchers measured people and found a link. Shows what goes together, not what causes what.
THEORY	A plausible mechanism that fits the data but is not proven in people.
GUIDELINE	Standard intake advice from nutrition and medical bodies.
COACH	What works in practice with clients. No trial behind it, and we say so.

The hierarchy: come back to this order when it all feels complicated

- 1 Energy balance.** Eat a little less than you burn to lose fat, a little more to build muscle.
- 2 Resistance training, 3 times a week.** Nothing else protects muscle and bone like it. **TRIAL**
- 3 Protein, 1.2–1.6 g per kg a day** (1.6–2.0 g/kg while dieting), spread over 3–4 meals. It supports training; it does not replace it. **TRIAL**
- 4 Sleep and stress.** The lever people skip, and the one that makes the other three easier. **OBSERVED**
- 5 Everything else.** Meal timing, most supplements, hacks. The last 5%.

A NOTE FROM LUCA

You do not need to fear your hormones, and you do not need to fear carbohydrates. You need muscle, enough protein, sleep, and a plan you can repeat for years. That is this guide.

PART 1

The three hormones, honestly explained

Insulin, cortisol, estrogen. All three get blamed for belly fat, often in one breath and often wrongly. Here is what each does and how strong the evidence really is.

Insulin: the misunderstood one

Insulin is a nutrient-partitioning hormone. After you eat, especially carbohydrate, it moves glucose into muscle and liver, pauses fat burning for a while and tells fat cells to hold their stores. Around training that is useful: it helps drive nutrients into the muscle you just worked.

The viral claim goes further: insulin is the *only* fat-storing hormone, so carbs make you fat whatever your calories. That is the carbohydrate-insulin model of obesity, and it has been tested in the strictest setting nutrition science has: metabolic wards where every bite is weighed.

Same calories, different carbs and fat: body fat lost per day TRIAL

Carbohydrate restriction



53 g/day

Fat restriction



89 g/day

Hall et al. 2015, Cell Metabolism: 19 adults with obesity, 6-day diets in a metabolic ward, same calories, exercise daily. Fat restriction gave the larger loss ($p = 0.002$). The authors' model predicts the gap shrinks over longer diets.

SCIENCE SPOTLIGHT: THE WARD TRIALS

2015. The result above: with calories matched, the diet with *more* insulin (low-fat, high-carb) lost slightly *more* body fat over six days.

2016. 17 men moved from a high-carb diet to a ketogenic diet at the same calories. The keto diet was not accompanied by more body-fat loss. TRIAL

2021. 20 adults ate freely from a minimally processed plant-based diet (75% carbohydrate) and from a ketogenic diet, two weeks each. On the plant-based high-carb diet they ate about **689 fewer calories a day**. That was the trial's main measurement; it did not set out to compare fat loss. TRIAL

THE DEBATE, FAIRLY STATED

In 2021 David Ludwig and colleagues updated the carbohydrate-insulin model: high-glycemic carbs raise insulin, lock calories into fat tissue and drive hunger. In 2022 Kevin Hall and colleagues answered with the energy-balance model: the brain integrates many signals, and insulin is one of them. Ludwig's side argues that two-week ward trials are too short to settle it. Both sides agree calories matter; they disagree about why people eat too many.

LISTEN: THE FULL DEBATE

Sigma Nutrition Radio #429: Kevin Hall and Stephan Guyenet on the carbohydrate-insulin model versus the energy-balance model. Search "SNR 429" in any podcast app.

What this means for you

- **Do not fear carbohydrates.** On a plant-based diet they arrive with fiber. Watch the sustained surplus instead. **COACH**
- **Put carbs around training.** A carb-rich meal 1–3 hours before lifting fuels the session; carbs plus protein afterwards support recovery. **GUIDELINE**
- **Build your glucose sink.** Muscle is where glucose goes. More muscle, trained more often, means better carb handling. **OBSERVED**
- **Protein, fiber and fat slow glucose absorption.** Handy for steady energy and appetite, not because the spike itself stores fat.

TAKEAWAY

Insulin directs traffic; it does not choose the destination. Total energy, protein and training decide whether you gain or lose fat. A high-carb vegan diet is fully compatible with getting lean.

Cortisol: the belly-fat link is real, the cause is not settled

You need cortisol: its morning pulse wakes you, its spikes handle emergencies. The trouble is chronic elevation, from months of short sleep, constant stress, aggressive dieting or all three. Deep abdominal (visceral) fat also contains an enzyme, 11 β -HSD1, that turns inactive cortisone into active cortisol inside the fat tissue. **THEORY** That would make the midsection extra sensitive to stress, but the human data only show a link.

SCIENCE SPOTLIGHT

24 men. Higher measured cortisol production went with more intra-abdominal fat but not more subcutaneous fat, and with worse insulin sensitivity (Andrew 2009). **OBSERVED**

59 premenopausal women. Women with central fat, including lean ones, secreted more cortisol under repeated lab stress (Epel 2000). **OBSERVED**

Cushing's disease, where the body makes far too much cortisol, produces central obesity. That shows extreme cortisol can do it; it does not show ordinary stress does.

TAKEAWAY

Managing stress and sleep is a sensible body-composition habit, backed by a real mechanism and consistent associations. It is not proven to be the cause of your belly fat, so do not let anyone sell it as one. Part 6 turns it into a daily protocol.

Estrogen: the architect of female fat distribution

Before menopause, estrogen steers fat to the hips, thighs and buttocks (the "pear" pattern), which is metabolically quieter. After menopause, storage shifts toward the abdomen and visceral fat rises.

Share of body fat stored in the upper body (android)

OBSERVED



Ley et al. 1992, DXA scans of 131 healthy women. Different women at each stage, so it shows a difference, not a change within one woman. Bars start at zero.

SCIENCE SPOTLIGHT: FOLLOWING THE SAME WOMEN

A 4-year study of 156 women, measured every year until some passed through menopause (Lovejoy 2008): fat in the abdominal wall grew with age in everyone, but **visceral fat rose only in the women who became postmenopausal**. In that group sleeping energy expenditure fell 7.9% (versus 5.3% in those who did not), fat oxidation fell 32%, and daily activity dropped from about two years before menopause.

OBSERVED

ABOUT "ESTROGEN DOMINANCE"

Big thighs do not mean "estrogen dominance". Lower-body fat before menopause is the healthy female pattern. Do not let anyone pathologize a normal body shape to sell a detox.

TAKEAWAY

The pear-to-apple shift is real and measurable, and part of it is the drop in movement and metabolism that arrives with it. Strength training, protein, daily movement, sleep and stress management all push back.

PART 2

Pre-menopause: bank muscle now

Roughly late 30s to mid-40s, cycles regular. Everything still works, which is why this is the highest-leverage decade of your training life: the muscle and bone you build now are the reserve you spend later.

What is happening

Estrogen and progesterone cycle normally, fat still goes mostly to the lower body, recovery is at its lifetime best. Underneath, muscle slowly declines with age and bone approaches the end of its building years. Neither announces itself, and both are easiest to fight early.

Your three priorities

1. BUILD AS MUCH MUSCLE AS YOU CAN

Lift 3–4 times a week with progressive overload (more weight or reps over time), on full-body or upper/lower splits built from squats, hinges, presses, rows and carries. Learn barbell technique now while recovery is forgiving. **COACH**

2. BUILD BONE ON PURPOSE

Lifting heavy-ish is the best-supported tool (Part 4). Many coaches add 2–3 short weekly doses of impact (jump rope, step-ups, stair sprints, jogging intervals). Brisk walking alone is a weak bone stimulus. Start low and build up, and check with your doctor first if you have osteoporosis or joint problems. **COACH**

3. EAT LIKE SOMEONE BUILDING SOMETHING

- **Protein:** 1.2–1.6 g/kg a day over 3–4 meals of 25–40 g (food table in Part 5). **TRIAL**
- **Stop chronic dieting.** The most common mistake at this age is a permanent 1,400-calorie day. If fat loss is the goal, run a focused 8–12 week phase at a moderate deficit, then eat at maintenance and build. **COACH**
- **Vegan foundations:** B12 (non-negotiable), vitamin D3 (test, then supplement), iodine (iodized salt), algae omega-3. **GUIDELINE**

COACH'S NOTE

Think of muscle as a retirement account. A woman who enters peri-menopause with more muscle has more strength, a more forgiving metabolism and more to spend. The deposits are cheapest now.

Pre-menopause checklist

- ✓ Strength training 3–4 times a week, logged, progressing monthly
- ✓ Protein target hit 6 days out of 7
- ✓ 8,000–10,000 steps most days
- ✓ 2–3 easy cardio sessions a week (30–45 min at a conversational pace)
- ✓ Sleep 7–9 hours with a fixed wake time
- ✓ Annual blood work (vitamin D, B12, ferritin, TSH, lipids); bone-density baseline if you have risk factors

Peri-menopause and menopause: navigate the transition

Peri-menopause usually runs from the mid-40s to early 50s, with irregular cycles for 4–10 years. Menopause is 12 months without a period (average age about 51). Post-menopause is everything after.

This is when many women feel their body has betrayed them: what worked for years stops working. Nothing is broken. The hormonal context changed, so the strategy has to change with it.

What is changing

- **Fat storage moves toward the abdomen** and visceral fat rises (Part 1). **OBSERVED**
- **Bone loss speeds up around the final period.** In 862 women followed for ten years, loss peaked from one year before to two years after the last period. **OBSERVED**
- **Energy expenditure dips.** Sleeping energy expenditure fell more in women who became postmenopausal, and activity had already dropped. **OBSERVED**
- **Muscle responds less to small protein doses** ("anabolic resistance"), so protein is worth taking seriously and spreading out. **GUIDELINE**
- **Insulin sensitivity often worsens**, which is one more reason for weights and daily movement.

Spine bone-density loss over 10 years around the final period **OBSERVED**



SWAN study, Greendale 2012: 10-year spine loss 10.6%, of which 7.4% fell in the transmenopause (1 year before to 2 years after the final period, roughly 2.5% a year). The 3.2% is the remainder, worked out from those two figures. Femoral neck: 9.1% total, 5.8% in the transmenopause. Greater body mass index meant slower loss.

Symptom-by-symptom training guide COACH

Symptoms limit performance. Program around them. These are coaching rules from practice, not trial results.

Symptom	What to do
Hot flashes, night sweats	Train in the morning in a cool room, dress in layers, keep sessions to 45–60 minutes. After a bad night cut volume 30–40% the next day.
Broken sleep	Cut high-intensity conditioning first and keep lifting. Walk more. Skip the 6 a.m. hard class on 5 hours of sleep.
Joint aches, stiffness	10-minute warm-ups. Choose machines, cables and dumbbells where barbells hurt. Full range with lighter load beats heavy partials.
Low mood, anxiety	Keep the training appointments. Outdoor walks and daylight help mood and sleep.
Brain fog	Write the session down beforehand. Simple repeatable programs beat clever ones.
Weight gain on "the same" habits	Track steps for a week (they have usually dropped). Add one easy cardio session. Change one variable at a time.

Nutrition upgrades for this phase

- **Protein 1.2–1.6 g/kg**, up to 2.0 while dieting, in 25–40 g servings. A full block of tofu or a generous tempeh serving, not a sprinkle of chickpeas. TRIAL
- **Calcium about 1,200 mg a day, from food:** fortified soy milk, calcium-set tofu, tahini, kale. GUIDELINE
- **Vitamin D3 1,000–2,000 IU a day** after a blood test, rechecked yearly. GUIDELINE
- **Iron needs fall** without periods (about 8 mg versus 18 mg a day). Pair legumes with vitamin C, and test ferritin before supplementing. GUIDELINE
- **Fiber 25–30 g a day** from legumes, vegetables, fruit and whole grains. GUIDELINE

SOY: WHAT THE EVIDENCE ACTUALLY SAYS

Hot flashes. A 2012 meta-analysis of 19 trials found that extracted or synthesized isoflavone *supplements* cut hot-flash frequency by about 21% and severity by about 26% versus placebo, with large differences between trials. Higher-genistein products did better. TRIAL A 2025 review of 12 studies found a small benefit, and the North American Menopause Society does not recommend isoflavones for hot flashes. So soy is not a reliable hot-flash treatment.

Safety. Soy foods are not linked to worse breast-cancer outcomes. In a meta-analysis of 12 studies (37,275 women with breast cancer), soy eaten after diagnosis was not linked to worse survival, and soy before or after diagnosis was linked to lower recurrence. OBSERVED Women with a history of hormone-sensitive cancer should still talk to their oncologist.

Verdict. Tofu, tempeh, edamame and soy milk are excellent protein staples. Eat them for the protein, not as a hot-flash fix.

CREATINE: THE HONEST VERDICT

A 2026 meta-analysis of 7 trials (608 postmenopausal women) found creatine plus resistance training added about 0.37 kg of lean mass and 7.5 kg to leg-press strength compared with training alone. The benefit appeared at about 5 g a day. Bone density did not change overall. **TRIAL** Without training, 3 g a day for two years did nothing, and a two-year trial combining creatine with lifting (237 women) did not improve its main bone measure.

Verdict. About 5 g of creatine monohydrate a day is cheap, safe and vegan-friendly, and a modest amplifier *if you lift*. It will not build bone, and it is no shortcut.

A WORD ON HORMONE THERAPY

Menopausal hormone therapy is the most effective treatment for hot flashes and night sweats, and it protects bone density. Whether it is right for you depends on your history, symptoms and risk. That is a decision for you and your doctor, not this guide. Everything here works with or without it.

PART 4

Training: programs and principles

The principles first, then three ready-to-use programs (2, 3 or 4 days). Pick the one you will actually repeat for a year.

The principles

1. PROGRESSIVE OVERLOAD IS THE WHOLE GAME

Muscle and bone adapt to rising demand. Aim for slightly more than last time: a rep, a little weight, a set. Log every session. If your numbers do not move over 4–6 weeks you are maintaining, which is fine sometimes but does not build. **COACH**

2. INTENSITY BEATS VARIETY

Work mostly in the 6–12 rep range, stopping 1–3 reps short of failure. Ten comfortable reps followed by scrolling your phone builds little. The last hard reps are the signal. **COACH**

3. COMPOUNDS FIRST, MACHINES WELCOME

Squat, hinge, press, row, pull, carry. Dumbbells, cables and machines build muscle with less joint stress. Use what lets you train hard without pain.

4. THE BONE PROTOCOL

SCIENCE SPOTLIGHT

A pooled analysis of 17 trials (690 postmenopausal women) found resistance training improved bone density at the spine, femoral neck and hip. The best results came with sessions three times a week at 70% of your one-rep max or more, kept up for a long time. There was a lot of difference between trials.

TRIAL A second analysis of 40 trials (2,230 women aged 50–60) found that combined resistance and aerobic training worked best for bone. **TRIAL**

Translation: lift three times a week, do not go too light, and be patient. Bone remodels over a year or more.

5. CARDIO SUPPORTS, LIFTING LEADS

Two or three easy sessions a week (30–45 minutes at a conversational pace) for heart health and recovery. Daily hard intervals compete with recovery. **COACH**

6. STEPS ARE THE SILENT LEVER

8,000–12,000 a day is the usual coaching target. When fat loss stalls, steps have usually dropped first. Fix them before cutting food. **COACH**

Program A: 3 days a week (the sweet spot) COACH

Day	Session (60–75 min)	Sets × reps
Mon Full body A	Goblet or barbell squat Bench or dumbbell press Bent-over row Romanian deadlift Farmer's carry	4×6–8 3×8–10 3×8–10 3×8–10 3 × 40 m
Wed Full body B	Deadlift or trap-bar deadlift Overhead press Lat pulldown or pull-up Walking lunge Pallof press	4×5–6 3×8–10 3×8–12 3×10/leg 3×12/side
Fri Full body C	Leg press Incline dumbbell press Seated cable row Hip thrust Plank	3×10–12 3×8–10 3×8–10 3×10–12 3 × 45 s

Rest 90–150 s on compounds, 60–90 s on accessories. Add easy cardio Tue/Thu or Sat (30–40 min) and daily steps.

Program B: 2 days a week (minimum effective dose) COACH

Day	Session (60 min)
1	Squat 4×6–8 · Bench press 3×8–10 · Seated row 3×10–12 · Romanian deadlift 3×8–10 · Core 2×12
2	Deadlift 4×5–6 · Overhead press 3×8–10 · Lat pulldown 3×8–12 · Lunge 3×10/leg · Carry 3 × 40 m

Two hard days beat four half-hearted ones. Add one easy cardio session and keep your steps up.

Program C: 4 days a week (upper/lower) COACH

Day	Focus
Mon	Lower: squat, Romanian deadlift, leg press, calf raise, core
Tue	Upper: bench press, row, overhead press, pulldown, arms
Thu	Lower: deadlift, lunge, hip thrust, step-up, core
Fri	Upper: incline press, pull-up or lat work, cable row, lateral raise, arms

DELOADS

Every 6–8 weeks, or whenever sleep, symptoms or stress pile up, halve the volume for a week and keep the weights moderately heavy. The women who last back off before they are forced to.

How to track progress beyond the scale

The scale lies during recomposition: you can lose 2 kg of fat, gain 1.5 kg of muscle and see 0.5 kg. Track four things.

- ✓ **Strength log.** Are your lifts going up? That is progress, period.
- ✓ **Waist measurement** at the navel, same day each week.
- ✓ **Photos** in the same light and clothes every 2–4 weeks.
- ✓ **Sleep and energy** scored 1–10 each morning. Trends beat single days.

Plant-based nutrition: the complete manual

Protein: the headline nutrient, without the hype

Starting point: 1.2–1.6 g per kg of body weight a day, and 1.6–2.0 g/kg while dieting. For a 65 kg woman that is about 80–105 g a day, or 105–130 g in a deficit. Count the grams for a week; most women find they are well below target and not above it. **GUIDELINE**

SCIENCE SPOTLIGHT: DOES MORE PROTEIN BUILD MORE MUSCLE IN WOMEN?

In a 2026 trial, 108 women aged 40–77 did 12 weeks of supervised resistance training (some added cycling) and were assigned 0.8, 1.6 or 2.2 g/kg of protein a day. Muscle mass (by body-impedance scan) did not differ by protein target ($p = 0.73$), among the 83 who finished. **TRIAL** It is one 12-week trial with a body-impedance measure, so it does not close the question. Large pooled analyses in mostly younger adults found gains leveling off around 1.6 g/kg. The practical lesson: training is the driver, protein is the support.

Serving size and spread

Aim for 25–40 g of protein in each of 3–4 meals. Older muscle may need a bigger dose per meal, but the evidence that an even spread builds more muscle is thin: in a review of 15 studies, 3 of 7 linked an even spread to more muscle mass, 2 of 7 to more strength, and 1 of 6 to protein turnover. Do not over-engineer it.

OBSERVED

Food	Serving	Protein (approx.)
Seitan	100 g	~25 g
Tempeh	100 g	~19 g
Extra-firm tofu	150 g	~18–22 g
Red lentils, cooked	200 g	~18 g
Edamame, shelled	150 g	~17 g
Fortified soy milk	500 ml	~16–18 g
Vegan protein powder	1 scoop (30 g)	~20–25 g
Chickpeas, cooked	200 g	~14–16 g

Approximate. Brands differ, so check the label. Mixing foods within a day covers all essential amino acids.

THE 4-MEAL TEMPLATE

Four meals of about 25–35 g protein: a palm-and-a-half of protein, plenty of vegetables, a whole-grain or starchy carb and a thumb of healthy fat. Simple, repeatable, effective. **COACH**

The vegan micronutrient checklist GUIDELINE

A review of 141 studies found vegans' intake and status of B12, vitamin D, iron, zinc, iodine and calcium are generally lower than meat-eaters', and EPA/DHA are lower too. Check them rather than guess.

- **Vitamin B12:** at least 25 mcg a day or 2,000 mcg a week. Non-negotiable: deficiency can cause lasting nerve damage.
- **Vitamin D3:** test yearly; most women need 1,000–2,000 IU a day in fall and winter (vegan D3 comes from lichen).
- **Calcium:** about 1,200 mg a day after menopause, mostly from food (fortified soy milk about 300 mg a cup, calcium-set tofu, tahini, kale).
- **Iodine:** 150 mcg a day from iodized salt or a supplement.
- **Omega-3 (EPA/DHA):** 250–500 mg a day from algae oil.
- **Iron:** about 8 mg a day after menopause. Test ferritin before supplementing.
- **Zinc:** 8–12 mg a day from legumes, nuts and seeds; phytates reduce absorption, so variety matters.

The supplement stack: honest grades

Supplement	Dose	Evidence	Verdict
Creatine monohydrate	~5 g/day	Strength and lean mass with training in 608 postmenopausal women; bone unchanged; nothing without training	If you lift
Vitamin B12	25+ mcg/day	Vegans must supplement	Non-negotiable
Vitamin D3	1,000–2,000 IU/day	Corrects deficiency. In healthy adults, calcium and D alone did little for fractures in a 69-trial review	Test, then supplement
Algae omega-3	250–500 mg EPA/DHA	Fills a gap vegans commonly have	Reasonable
Soy isoflavone pills	~50 mg	Small, inconsistent hot-flash effect; not recommended by NAMS	Skip; eat soy foods for protein
Magnesium	200–400 mg	2026 review of 12 trials: mixed, low certainty for sleep	Not proven for sleep
Calcium pills	—	Food first	Get it from food

Sample days COACH

Templates for a ~65 kg woman, not prescriptions. Protein is approximate; your coach adjusts portions to your weight, goal and phase.

Fat-loss day (~1,800 kcal · ~125 g protein)

Meal	What	Protein
Breakfast	Soy yogurt 250 g, 40 g oats, berries, 1 tbsp ground flax, 1 scoop vanilla protein	~34 g
Lunch	Tempeh 120 g bowl: 60 g dry quinoa, edamame, kale, tahini-lemon dressing	~37 g
Snack	Smoothie: 300 ml fortified soy milk, banana, 1 scoop protein	~30 g
Dinner	Tofu 150 g stir-fry, mixed vegetables, 150 g cooked brown rice	~24 g

Building day (~2,200 kcal · ~130 g protein)

Meal	What	Protein
Breakfast	Tofu scramble (200 g tofu), 2 slices whole-grain bread, avocado, nutritional yeast	~35 g
Lunch	Seitan 120 g wrap: whole-wheat tortilla, hummus, roasted vegetables, salad	~38 g
Pre-workout	Banana and 1 scoop protein in water	~22 g
Dinner	Red lentil and chickpea curry (200 g lentils, 100 g chickpeas), 80 g dry rice	~31 g
Evening	250 ml warm fortified soy milk with cinnamon	~8 g

Eating out and traveling

- Anchor every restaurant meal on the protein: double tofu or tempeh, add edamame, pick the lentil or bean dish.
- Travel kit: protein sachets, roasted chickpeas, oat bars, a piece of fruit.
- One imperfect meal changes nothing. The week is the unit that matters.

The cortisol protocol: stress, sleep and recovery

Stress management is not proven to cause or cure belly fat, but poor sleep and high stress make training, eating and recovery harder. Treat it as the base the other habits sit on.

Sleep: 7–9 hours, protected like a training session COACH

- **Fixed wake time**, weekends too. It anchors your body clock.
- **Morning daylight**: 5–10 minutes outside within an hour of waking.
- **Cool, dark, quiet**: a room of 18–19 °C, light bedding if night sweats strike, no screens for 30–60 minutes before bed.
- **Caffeine curfew**: nothing after noon. If you are anxious or wired, cap it at 1–2 cups before 10 a.m.
- **Train earlier** when sleep is broken; hard evening sessions push sleep later.
- **Bad night, easy day**: cut volume 30–40%, walk, go to bed early.

Two weeks of dieting at 8.5 h vs 5.5 h sleep: where the weight came from TRIAL

Fat lost

8.5 h sleep  1.4 kg

5.5 h sleep  0.6 kg

Fat-free mass lost

8.5 h sleep  1.5 kg

5.5 h sleep  2.4 kg

Nedeltcheva et al. 2010, Annals of Internal Medicine. Only 10 adults (3 women, 7 men), a 14-day crossover. A small but striking study: short sleep cut the share of weight lost as fat by 55%. Treat it as a strong hint, not a verdict.

The daily downshift (15 minutes) COACH

- **Midday**: one real break, a 10-minute walk, no phone.
- **Evening**: 5 minutes of slow breathing (in for 4, out for 6–8) or gentle stretching.
- **Weekly**: one properly restorative activity: nature, sauna, a long bath, people you like.

Alcohol: the honest audit

A 2025 meta-analysis of 27 studies found alcohol delays and shortens REM sleep, and that this starts at about two standard drinks and worsens with dose. TRIAL Alcohol also adds about 7 kcal per gram with no nutrition.

If fat loss or sleep is the goal, many of our clients cut to 0–2 drinks a week for a focused phase and notice the difference within two weeks. COACH

Stop diet-hopping COACH

Aggressive cuts and cleanses cost muscle, which is the thing you cannot spare in this phase. The formula: a moderate deficit (300–500 kcal), enough protein, weights 3–4 times a week and patience. If the scale stalls for 3 weeks or more, change one variable, usually steps or calories, not everything at once. A week or two at maintenance after a long diet is a sensible reset, though we found no trial showing it improves hormones.

Go deeper: podcasts and papers

Podcast

INSULIN AND OBESITY: THE SCIENTIFIC DEBATE

Sigma Nutrition Radio #429: Kevin Hall, PhD and Stephan Guyenet, PhD on the carbohydrate-insulin model versus the energy-balance model. The two sides of the 2021–2022 exchange discuss the metabolic-ward trials and where the field stands. Search "Sigma Nutrition Radio 429".

Key papers, by topic

- **Insulin and fat loss:** Hall 2015 (Cell Metab); Hall 2016 (Am J Clin Nutr); Hall 2021 (Nat Med); Ludwig 2021 and Hall 2022 (both Am J Clin Nutr).
- **Cortisol and belly fat:** Andrew 2009 (Am J Physiol Endocrinol Metab); Epel 2000 (Psychosom Med).
- **Menopause and body composition:** Ley 1992 (Am J Clin Nutr); Lovejoy 2008 (Int J Obes).
- **Bone:** Greendale 2012 (J Bone Miner Res); resistance-training meta-analysis, 17 trials (PMID 40420105); exercise-modality meta-analysis, 40 trials (PMID 40715912).
- **Protein:** 108-woman randomized trial (PMID 42735207); protein distribution review (PMID 33550490).
- **Soy:** Taku 2012 (Menopause); 2019 meta-analysis on breast-cancer survival (PMID 30382332); 2025 isoflavone review (PMID 40718787).
- **Creatine:** 2026 meta-analysis in postmenopausal women (PMID 42141930).
- **Sleep:** Nedeltcheva 2010 (Ann Intern Med); alcohol and sleep meta-analysis 2025 (PMID 39631226); magnesium and sleep review 2026 (PMID 42661485).
- **Vegan nutrient status:** review of 141 studies (PMID 35010904).

Myth-busting questions

"Do carbs spike insulin and make me store fat?"

Carbs raise insulin; that is its job, and around training it is useful. In ward trials with matched calories, the higher-insulin diet did not cause more fat gain, and when people ate freely, a high-carb plant diet led them to eat about 689 fewer calories a day than a keto diet. Fear the sustained surplus, not the sweet potato.

"Will lifting weights make me bulky?"

No. Building even a little muscle after 40 takes deliberate effort and a surplus. Weights give you denser bones, better posture, less back pain and the "toned" look, which is muscle with less fat over it.

"Should I do fasted cardio to burn belly fat?"

Fasted versus fed exercise made no meaningful difference in the studies we checked. Pick the timing you will repeat.

"Is soy safe? I heard it messes with hormones."

Soy foods are safe protein staples. Isoflavones are weak plant compounds, and soy foods are not linked to worse breast-cancer outcomes. They are not a reliable fix for hot flashes, and they are not HRT.

"My friend lost 10 kg on an extreme diet. Should I?"

Rapid losses are largely water and muscle, and muscle is what you cannot spare. Losing about 0.5 kg a week while lifting keeps your muscle, bones and metabolism. **COACH**

"Do I need HRT to see results?"

No. HRT helps symptoms and bone for many women, and that is a decision for you and your doctor. Lifting, protein, steps, sleep and stress management work with or without it.

"How fast will I see changes?"

Strength: 4–6 weeks. Visible body-composition change: 12–16 weeks of consistency. Bone density: a year or more. Anyone promising faster is selling something. **COACH**

"Should I eat more on training days?"

You can: extra carbs around the session, a little less on rest days. Keep protein steady. The weekly average matters more than any single day.

"What if I cannot do barbell lifts?"

Then do not. Dumbbells, machines and cables build muscle with less joint stress and less skill demand. The program that respects your joints is the one you will still be doing in five years.

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Each entry was checked against its published abstract. Find any of them by PubMed ID (PMID).

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READY FOR THE NEXT STEP?

You do not have to figure this out alone.

This guide gives you the map. A coach gives you the route: training matched to your phase and your joints, nutrition targets that move as your body changes, and someone beside you when symptoms, travel or life get in the way.

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Medical disclaimer. This guide is for education only and is not medical advice. It does not diagnose, treat or prevent any condition. Hormone therapy, supplements and training changes should be discussed with your doctor, especially with osteoporosis, cardiovascular disease, diabetes, thyroid disorders or if you take medication. Stop and get checked for pain beyond normal muscle soreness. If you have a history of hormone-sensitive cancer, discuss soy and any hormonal strategy with your oncologist.