

Circadian Nutrition Guide

Evidence-Based Wellness

WHAT IS CIRCADIAN NUTRITION?

Your body runs on a 24-hour internal clock — the circadian rhythm — that governs nearly every physiological process: hormone secretion, digestion, insulin sensitivity, sleep, and repair. Emerging research shows that **WHEN** you eat matters as much as what you eat. Aligning meals with your circadian biology can improve metabolic health, sleep quality, and energy levels without changing calorie intake.

THE CIRCADIAN WINDOW: CORE PRINCIPLES

Eat within a consistent window

Research from the Salk Institute (Panda et al., 2019) shows time-restricted eating (TRE) of 8–10 hours aligns with peak insulin sensitivity and improves metabolic markers.

Front-load calories earlier

A 2013 trial in Obesity found that participants consuming 700 kcal at breakfast and 200 kcal at dinner lost 2.5x more weight than the reverse group over 12 weeks — same total calories.

Stop eating 2–3 hours before bed

Evening meals elevate core body temperature and blood glucose, both of which impair the onset of sleep and suppress nocturnal growth hormone release.

Expose yourself to morning light before eating

Light entrains the suprachiasmatic nucleus (SCN), the master clock. Morning light exposure increases cortisol appropriately and primes the metabolic system for food intake.

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IDEAL MEAL TIMING FRAMEWORK

6:00 – 8:00 AM

Morning light first. Delay first meal 1–2 hours after waking. If you exercise fasted, protein within 45 min post-workout.

8:00 – 10:00 AM

Largest meal of the day. Prioritize protein (30–50g), complex carbohydrates, healthy fats. Insulin sensitivity is highest.

12:00 – 2:00 PM

Moderate lunch. Include vegetables, lean protein. Avoid high-glycemic foods — post-lunch glucose spike worsens afternoon cognition.

5:00 – 7:00 PM

Final meal of the day. Light to moderate in calories. Emphasize protein and fibrous vegetables. Minimize refined carbohydrates.

7:00 PM onward

Eating window closed. Herbal teas (without additives) are fine. Avoid alcohol — it fragments sleep architecture even if it induces drowsiness.

MACRONUTRIENT TIMING

- Protein: Distribute 0.7–1g per lb bodyweight evenly across meals. Leucine threshold (~2–3g per meal) is required to trigger muscle protein synthesis.
- Carbohydrates: Best tolerated in the morning and around training. Evening carbohydrate consumption spikes nighttime insulin and can delay fat oxidation during sleep.
- Fats: Beneficial any time of day. Avoid high-fat meals within 3 hours of sleep — fat delays gastric emptying and can cause reflux when lying down.
- Fiber: 25–35g daily minimum. Fiber feeds short-chain fatty acid production in the gut, which supports the intestinal clock and reduces systemic inflammation.

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WHAT TO EAT: CIRCADIAN-FRIENDLY FOODS

Morning — Metabolically Active Window

- Eggs and fatty fish (DHA supports brain clock entrainment)
- Oats, berries, Greek yogurt
- Coffee — peak cortisol occurs 30–45 min after waking; delay caffeine 90 min for optimal effect
- Nuts and seeds (healthy fats + slow-release energy)

Midday — Sustained Focus

- Lean proteins: chicken, tuna, legumes
- Dark leafy greens and cruciferous vegetables
- Whole grains: quinoa, brown rice, farro
- Olive oil as primary fat source

Evening — Wind-Down Foods

- Tryptophan-rich foods: turkey, tofu, pumpkin seeds (precursor to melatonin synthesis)
- Tart cherry juice — contains natural melatonin, studied for sleep improvement (Howatson et al., 2012, European Journal of Nutrition)
- Chamomile tea — apigenin content supports GABA-A receptor activity
- Avoid: alcohol, high-sugar desserts, heavily processed foods

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WEEKLY IMPLEMENTATION CHECKLIST

- ☐ Set a consistent eating window (8–10 hours) and stick to it 6 out of 7 days.
- ☐ Get outdoor morning light within 30 minutes of waking — even 5 minutes helps set your circadian clock.
- ☐ Eat your largest calorie load before 2 PM. Front-load protein at breakfast.
- ☐ Close your eating window at least 2 hours before bed. Record your last meal time daily for one week to build awareness.
- ☐ Avoid eating in the 2 hours before your workout if training for fat adaptation; otherwise, a small protein meal 1–2 hours before is fine.
- ☐ Hydrate consistently throughout the day. Dehydration impairs circadian signaling and worsens afternoon energy dips.
- ☐ Limit caffeine after 1 PM. Caffeine has a half-life of 5–6 hours — a 2 PM coffee still has residual levels at midnight.
- ☐ On weekends, maintain your eating window within 1 hour of weekday timing. Social jet lag — shifting meal timing drastically — disrupts the metabolic clock.
- ☐ Track how you feel: energy, sleep quality, hunger, mental clarity. Adjust your window by 30-minute increments based on data.
- ☐ Review and adjust after 3 weeks. Circadian adaptation takes time. Give protocols a minimum of 21 days before evaluating effect.

KEY RESEARCH REFERENCES

- Panda S (2019). Circadian physiology of metabolism. *Science*, 354(6315), 1008–1015.
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