

Metabolic Tug-of-War

Your metabolism is like a game of tug-of-war. On one side, muscle-building hormones (Team Anabolic) pull your body toward strength, energy, and fat burning. On the other side, muscle-wasting hormones (Team Catabolic) pull toward muscle loss, fat storage, and sluggish energy.

The good news? You control which team wins. Your choices—food, exercise, light exposure, sleep, and stress management—determine whether your body stays in growth mode or breakdown mode.

But there's a wild card: insulin. If balanced, insulin can support muscle-building and fat loss. If chronically elevated, it can drive fat storage and muscle breakdown. Your daily habits decide your body's fate.

TEAM ANABOLIC (MUSCLE-BUILDING GOOD GUYS)

Hormone	Roles	Key Nutrients	How to Boost
Testosterone	Master anabolic hormone. Helps build muscle, burn fat, and keep energy levels high.	Zinc, Vitamin D, Magnesium, Omega-3s, Cholesterol	Eat healthy fats (eggs, beef), get sunlight, strength train, and sleep well.
Thyroid (T3)	Keeps your metabolism running and prevents sluggish energy.	Iodine, Selenium, Iron, Tyrosine, B12	Avoid extreme diets, nutrient-dense diet, and reduce stress.
Growth Hormone (GH)	Helps with fat loss, muscle repair, and anti-aging.	Glycine, Arginine, Vitamin C, Magnesium, Deep Sleep	Get deep sleep, circadian eating, and do high-intensity workouts.
Mitochondrial Melatonin *	Helps produce energy and fights aging.	Magnesium, Zinc, Vitamin B6, Antioxidants (CoQ10, Polyphenols)	Get morning & sunset light, eat antioxidant-rich foods, and use red light therapy.
Vitamin D	Boosts metabolism and supports muscle-building.	Vitamin D3, Magnesium, K2, Omega-3s	Get 30 minutes of sunlight daily or take Vitamin D supplements in winter.

* Mitochondrial melatonin is not technically a hormone because it acts locally inside the mitochondria rather than being released into circulation

TEAM CATABOLIC (MUSCLE-WASTING BAD GUYS)

Hormone	Roles	Key Nutrients	How to Reduce
Cortisol	Master catabolic hormone that breaks down muscle and stores fat.	Vitamin C, Magnesium, Omega-3s, Adaptogens (Ashwagandha, Rhodiola)	Reduce stress (deep breathing, meditation), avoid overtraining, and get enough sleep.
Reverse T3	Slows metabolism and blocks fat burning.	Selenium, Iodine, Zinc, Iron	Avoid extreme dieting, manage stress, and get enough thyroid-supporting nutrients.
Excess Estrogen	Leads to fat gain and suppresses testosterone.	Diindolylmethane (DIM), Calcium D-Glucarate (CDG), Omega-3s, Zinc	Strength training, cruciferous vegetables (DIM/CDG), avoid endocrine disruptors (plastics, chemicals).

THE TIEBREAKER

Hormone	Roles	Key Nutrients	How to Optimize
Insulin	Shuttles nutrients into muscle if controlled (anabolic); wastes muscle if chronically elevated (catabolic).	Chromium, Magnesium, Omega-3s, Alpha-Lipoic Acid (ALA)	Circadian eating, adequate protein, strength training