



NUTRITION 101 PART 2

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OVERVIEW

- **Body Composition**
- **Cutting Safely**
- **Hydration**
- **Energy Systems – why diet matters**
- **Recovery**
- **Supplements**

BODY COMPOSITION: MUSCLE MASS & BODY FAT %

- **Why it matters:**
 - Lean mass = strength potential + metabolic rate.
 - Body-fat % influences power-to-weight ratio, not worth chasing unrealistically low numbers.
- **Healthy ranges:**
 - When below 18% BF, menstrual cycle irregularity can occur
 - Being under healthy BF% ranges is more dangerous than being over

CUTTING WEIGHT SAFELY

- **Goal: lose water + glycogen strategically, not muscle + metabolism.**
 - **Safe framework:** Aim for $\leq 1.5\%$ body-weight loss/week.
 - Keep protein $\geq 1.8\text{--}2.2$ g/kg BW/day.
 - Taper carbs only 1–2 days pre-weigh-in, then restore immediately after.
 - Use progressive dehydration only last 12–18 hr, with planned electrolyte rehydration.
- **Rehydration protocol example:**
 - 1.5 L of fluid + 600 mg sodium + 30 g carb per kg lost → split across 2–3 hr.
 - Chocolate milk + Pretzels + Sports Drink = perfect post-weigh-in combo.
- **1% of water lost = 11% higher injury rate**

HYDRATION & ELECTROLYTES

- **Even 2 % dehydration = ~10 % drop in strength/speed**
- **What to monitor:**
 - Urine color and frequency.
 - Weigh before/after practice; replace 150 % of fluid lost.
 - 1lbs = 16oz
- **Simple DIY electrolyte mix:**
 - 16 oz water + $\frac{1}{8}$ tsp salt + 1 Tbsp sugar + splash of OJ or lemon.
- **Avoid overhydration without sodium → hyponatremia.**

ENERGY SYSTEM OVERVIEW: WHY NUTRITION MATTERS

Energy System	Time Frame	Power Output	Limitation	Example Sport
ATP-PCr (Creatine)	0–10 sec	Maximal	PCr depletion	100 m sprint, baseball pitch
Glycolytic (Carbs)	10–90 sec	Moderate	Lactate accumulation	400 m run, wrestling
Oxidative (Fats)	>2 min	Low	Oxygen delivery	Distance running

RECOVERY = RETURN TO HOMEOSTASIS

- **After exercise:**
- **Neural:** CNS fatigue (neurotransmitter depletion).
- **Hormonal:** Elevated cortisol; lowered testosterone ratio.
- **Cellular:** Glycogen depletion, protein microdamage.
- **Immune:** Cytokine response, inflammation, soreness.
- **Recovery is where adaptation actually happens.**

RECOVERY HIERARCHY

Priority	Mechanism	Why It Matters
1. Sleep	GH pulses, CNS reset	7–9 hrs for neural & hormonal recovery
2. Nutrition	MPS & glycogen	20–40 g protein + 1–1.2 g/kg carbs post-training
3. Hydration	Fluid & electrolyte balance	Supports circulation & thermoregulation
4. Active Recovery	Blood flow	Reduces soreness, promotes healing
5. Modalities	Psychological relief	Cold/contrast aid perception, not adaptation

RECOVERY MYTHS

- **Ice baths:** ↓ soreness but may blunt muscle growth if used excessively.
- **Compression:** aids perceived recovery more than physiology.
- **Active recovery:** may be as beneficial as rest.
- **Pain relievers:** reduce inflammation, but inflammation signals adaptation to stressor.
- **Sleep + nutrition outperform all.**

SUPPLEMENTS

- **Tier 1 (Strong Evidence & Safe):**
 - **Creatine Monohydrate:** 3–5 g/day → ↑ power, ↑ lean mass, no weight-cut penalty when dosed smartly.
 - **Caffeine:** 3–6 mg/kg ~ 60 min pre-practice → ↑ focus, reaction time.
 - **Beta-Alanine:** ~ 3–6 g/day (2 wk+) → delays fatigue.
- **Tier 2 (Contextual):**
 - **Omega-3s (fish oil)** → anti-inflammatory; useful during high volume.
 - **Vitamin D, Iron, Calcium** → especially for female athletes with restricted intake.
- **Tier 3 (Minimal Evidence / Hype):** BCAAs, detoxes, “fat burners,” greens powders → low return on investment

SUMMARY

- **Performance = Fuel × Hydration × Recovery × Consistency**
 - Eat for what you *want to perform like*, not for what you *fear to weigh*.
- **You can't wrestle strong if you refuel and recover weak.**
- **No food is bad – some are just better**
 - One thing will not hurt you badly, but consistently doing the one thing can
- **Supplements do not replace food, nor does ice packs, Advil, heat packs, etc. replace sleep and good diet**
- **Eating shouldn't be guessing – all the information is in front of you**