

SPORTS PERFORMANCE — NUTRITION & SUPPLEMENTS

Athletic Performance & Nutrition

An evidence-based guide to fueling, creatine, and supplements — for athletes and parents

FOOD FIRST — THE FOUNDATION NO SUPPLEMENT REPLACES

- **Protein: 1.4–2.0 g per kg of body weight per day** (ISSN). A 150-lb athlete needs roughly **95–135 g/day**, ideally 20–40 g every 3–4 hours. Most "what supplement should I take?" questions are answered here.
- **Carbohydrate scales with training:** ~3–5 g/kg/day on light days up to 8–12 g/kg/day in very heavy training; 30–60 g/hour during events over an hour. Fuel for the work required.
- **Hydration:** losing more than 2% of body weight in sweat degrades performance. Weigh before/after practice — each pound lost ≈ 16 oz to replace.
- **Underfueling is an injury:** athletes (especially in lean/endurance/aesthetic sports) who chronically eat too little develop REDs — stress fractures, missed periods, frequent illness, stalled performance, and in youth, stalled growth. **Parents: those warning signs mean a doctor visit, not a new supplement.**

CREATINE — THE MOST-STUDIED SUPPLEMENT IN SPORTS

Does it work? Yes. The International Society of Sports Nutrition calls creatine monohydrate "the most effective ergogenic nutritional supplement available" for high-intensity performance and lean mass. It raises muscle creatine stores 20–40%; typical results are ~8% greater strength gains and 10–20% better repeated high-intensity performance versus training alone, plus faster recovery between hard sessions.

Which kind? Plain **creatine monohydrate** — third-party certified. No fancier form (HCl, "buffered," liquid) has ever beaten it in a study, and it's the cheapest.

How to take it: 3–5 g once daily, every day, with food. (Optional faster start: 20 g/day split in 4 doses for 5–7 days, then 3–5 g/day.) Timing doesn't matter; consistency does. Expect 1–2 kg of water-weight gain early — that's intramuscular water, not fat.

Is it safe? In healthy people, yes — studied up to 30 g/day for 5 years without kidney harm. Two honest notes: (1) creatine raises *creatinine*, a lab value used to estimate kidney function — tell your doctor you take creatine so labs are interpreted correctly; (2) it is not a steroid, doesn't cause dehydration or cramping (studies show equal or fewer cramps), and the hair-loss claim comes from a single small study never replicated.

What about teenagers? Professional societies differ, and we'll tell you that straight: the ISSN considers creatine reasonable for *post-pubertal athletes in serious training*, at normal doses, with parental supervision — while the American Academy of Pediatrics has historically recommended against performance supplements under 18, citing limited youth-specific data rather than documented harm. **Our ask: talk to us before your athlete starts anything — and never use an unverified product.**

Beyond muscle (emerging, not established): creatine is being studied for cognition under fatigue, concussion recovery, and preventing muscle loss during injury and immobilization — occasionally relevant after orthopedic injury; ask us.

THE SHORT LIST OF SUPPLEMENTS WITH REAL EVIDENCE

Supplement	Evidence-based use	Grade*
Creatine monohydrate	3–5 g daily — strength, power, recovery	A
Caffeine	3–6 mg/kg ~60 min pre-exercise (adults). Not for youth athletes; no energy drinks.	A
Whey / casein protein	20–40 g to fill daily protein gaps; 30–40 g casein pre-sleep	A
Vitamin D	Test, don't guess — replete deficiency (common in indoor/winter athletes)	A (medical)
Beta-alanine	3.2–6.4 g/day ≥4 weeks for 1–4-minute all-out events (harmless tingling)	A (small effect)
Beetroot / nitrate	Endurance events 5–30 minutes	A
Omega-3 (fish oil)	1–2 g EPA+DHA/day or two fish meals weekly — recovery/joint support	B
Tart cherry	Concentrate twice daily for 4–5 days around competitions — soreness	B

*Australian Institute of Sport framework: A = strong evidence for specific uses; B = emerging.

SAVE YOUR MONEY — OR WORSE

- **BCAAs**: redundant if you're hitting your protein target — whole protein already contains them.
- **"Testosterone boosters"**: in an analysis of 50 top sellers, only ~25% of ingredients had ANY supporting human data — and 10% contained ingredients shown to LOWER testosterone.
- **Prohormones / "legal steroids"**: banned, harmful, and a leading cause of failed drug tests.
- **Contamination is real**: in a landmark IOC study, ~15% of 634 supplements (19% of US-bought) contained unlisted steroids. Competitive athletes are under strict liability — you own what's in your body.

The one buying rule: only use products certified by **NSF Certified for Sport** or **Informed Sport** — both test every batch for banned substances. Certified creatine, whey, and caffeine all exist. And loop us in before starting anything new.

Evidence base: ISSN position stands (protein 2017; creatine 2017; caffeine 2021; nutrient timing 2017); ACSM/AND/DC joint position 2016; IOC REDs consensus 2023; AIS Sports Supplement Framework; Clemesha 2020; Geyer 2004. Education only — not a prescription; discuss individual use, medications, and medical conditions with our team.



SCAN FOR THE LATEST VERSION ONLINE

robertpettitmd.com/handouts/performance-nutrition.pdf

This handout is for general patient education and does not replace personalized medical advice. Always follow the specific instructions given by Dr. Pettit and your care team.