

NUTRITION ACROSS TRAINING PHASES

Summary Guide

A practical, evidence-based guide to adjusting nutrition from off-camp to post-fight for combat sport athletes

Off-Camp Phase

Goal: Restore health, rebuild capacity, stabilise body mass

The off-camp phase is the period after a fight and before a structured fight camp begins... restoring health and recovery... stabilising body mass and body composition

Training characteristics

- Lower intensity and frequency
- Focus on recovery, aerobic rebuild, strength and power maintenance, and technical skill
- Psychological decompression and sleep restoration

Nutritional priorities

- Restore energy availability and hormonal balance
- Normalise appetite and eating patterns
- Maintain a healthy walk-around weight

- Prepare metabolism and body composition for the next camp

Nutrition in the off-camp phase must support recovery from the previous camp and fight... stabilisation of appetite and eating patterns... preparation for the next training cycle

Energy and macronutrient guidelines

Energy availability

- Target >30 kcal/kg FFM/day to prevent RED-s and metabolic suppression

Carbohydrates

- 3–5 g/kg/day for light activity
- Up to 8–12 g/kg/day during more intense off-camp blocks
- Support aerobic development, technical learning, and recovery

Protein

- 1.2–2.4 g/kg/day
- Use higher end during strength-focused blocks or when recovering from muscle damage

Fat

- Around 1.0 g/kg/day
- Typically, 20–35% of total daily energy

Body mass and composition

- Maintain walk-around weight at 12–15% above weight class
- Avoid rapid weight loss methods (sauna, dehydration, fasting)
- Use body composition (FFM, body fat %, total body water) as baseline

Supplementation

- Review and simplify supplement use
- Focus on:
 - Creatine monohydrate
 - Vitamin D (if deficient)
 - Omega-3 fatty acids
 - Probiotics
 - Multivitamin/mineral if needed

Assessment and monitoring

- Body composition: FFM, body fat %, total body water
- Metabolic: RMR, TDEE
- Bloodwork: micronutrients, hs-CRP, oxidative stress, RBC health, cortisol, CK, uric acid

Elevated CK (creatin kinase enzyme), hs-CRP, or uric acid may indicate accumulated fatigue, muscle damage, or metabolic stress — even when the athlete feels fine

Common mistakes

- Staying in **weight-cut mode** after a fight
- Excessive restriction and low energy availability
- Rebound overeating
- Neglecting aerobic development
- Ignoring bloodwork and sleep

Practical takeaways

- Restore health, energy availability, and hormonal balance
- Maintain a sustainable walk-around weight (12–15% above class)
- Rebuild aerobic capacity and strength with adequate fuel
- Use bloodwork and previous camp data to plan the next cycle

Early Preparatory Phase

Goal: Shift from restoration to structured performance development

The Early Preparatory Phase marks the shift from general recovery to structured performance development... This phase is where athletes begin accumulating meaningful training stress

Training characteristics

- Rising training volume and intensity
- Aerobic base building + repeatability
- Structured strength and power blocks
- Higher technical density and conditioning tolerance

Nutritional priorities

- Fuel progressive overload
- Increase carbohydrate availability for key sessions
- Maintain full energy availability to optimise adaptation
- Stabilise body mass before later weight descent

Energy and macronutrient guidelines

Energy availability

- Maintain >30 kcal/kg FFM/day

Carbohydrates

- 4–7 g/kg/day, scaled to session intensity
- Begin carbohydrate periodisation:
 - High-carb on high-intensity days
 - Moderate-carb on technical days
 - Low-carb only when strategically appropriate

Protein

- 1.4–2.2 g/kg/day

Fat

- 20–30% of total energy

Body mass and composition

- Maintain walk-around weight 10–14% above class
- If adjustment needed: reduce ~0.5% body mass/week
- Avoid rapid weight loss methods

Supplementation

- Performance-oriented:
 - Creatine monohydrate
 - Omega-3 fatty acids

- Vitamin D (if deficient)
- Probiotics
- Caffeine for selected high-intensity sessions
- Carbohydrate–electrolyte solutions on double-session days

Assessment and monitoring

- Biomarkers: CK, hs-CRP, uric acid, cortisol, testosterone
- Body composition: lean mass, hydration
- Sleep: >7 hours, consistent timing
- Subjective: mood, fatigue, vigour

Common mistakes

- Increasing training load without increasing carbohydrates
- Beginning weight cutting too early
- Under-fuelling high-intensity sessions
- Allowing sleep quality to decline

Practical takeaways

- Fuel to match rising training demands—especially carbs
- Maintain stable walk-around weight without early restriction
- Monitor fatigue using biomarkers and subjective measures
- Use this phase to prepare the body for mid-camp demands

Fight Camp Phase

Goal: High-intensity, fight-specific work with controlled weight descent.

The fight camp phase is highly structured, high-intensity, and fight specific... A key physiological goal is to reduce body fat while preserving lean mass

Training characteristics

- High volumes of striking, wrestling, grappling
- Repeated high-intensity efforts and scrambles
- Sport-specific conditioning and positional rounds
- Long-run weight descent, not crash cutting
- Heat acclimation may begin 4–5 weeks out

Nutritional priorities

- Support high-intensity, high-density training
- Controlled, gradual weight loss
- Preserve lean mass and immune function
- Maintain hydration and electrolyte balance
- Prepare for taper and fight-week strategies

Energy and macronutrient guidelines

Energy and weight loss

- Plan for 0.5–1.0 kg/week loss via controlled deficit
- Maintain sufficient energy availability to support training quality

Carbohydrates

- Should not fall below 3–4 g/kg/day
- Increase intake on sparring, wrestling, and conditioning days
- For sessions <6 hours apart:
 - 0.6–1.0 g/kg within 30 minutes post-exercise
 - Then carbs every 2 hours for 4–6 hours

Protein

- 1.2–2.2 g/kg/day
- Use higher end during caloric deficit

Fat

- 0.7–1.3 g/kg/day, adjusted to meet caloric goals

Body mass and composition

- Use long-run descent, not aggressive cuts
- Preserve lean mass to support strength, power, and later water manipulation
- Avoid early dehydration; save acute strategies for fight week

Hydration and heat

- Use sodium/potassium-containing drinks to avoid imbalance
- For rehydration: 1.5 L per kg of body mass lost
- Heat acclimation options:
 - Sauna 3–4×/week for 15–25 minutes
 - Hot-water immersion 2–3×/week for ~20 minutes

Supplementation

- Creatine monohydrate
- Omega-3 fatty acids
- Vitamin D (if deficient)
- Probiotics
- Curcumin
- Carbohydrate–electrolyte solutions
- Caffeine for selected high-intensity sessions

Assessment and monitoring

- Biomarkers: CK, hs-CRP, uric acid, cortisol, testosterone
- Subjective: mood, tension, fatigue, vigour
- Body composition: lean mass, fat mass, hydration
- Sleep: >7 hours, stable timing

Taper (1–2 weeks before Fight Week)

- Reduce training load by ~40%
- Maintain high-intensity, fight-specific drills
- Often involves reduced carbs and fluids alongside reduced load
- Protein remains high; fats adjusted to meet energy

Practical takeaways

- Fuel high-intensity training with adequate carbs
- Use gradual weight descent—avoid early dehydration

- Monitor biomarkers and mood to manage fatigue
- Use taper to sharpen performance and bridge into fight week

Fight Week

Goal: Acute, controlled scale reduction while preserving readiness

Fight Week focuses on minimising fatigue, maintaining sharpness, and supporting acute weight management physiology

Training characteristics

- Continuation of taper (~40% reduced load)
- Short, high-intensity, fight-specific drills
- No high-volume conditioning or sparring

Nutritional priorities

- Controlled acute weight reduction
- Maintain strength, power, and cognitive sharpness
- Protect hydration and electrolyte balance
- Minimise gut content
- Prepare for rapid post-weigh-in recovery

Energy and macronutrient guidelines

Carbohydrates

- Glycogen depletion via <50 g/day after assessing normal intake
- 72 hours often adequate; up to 7 days if needed
- May reduce 1–2% body mass

Protein

- Maintain 1.6–2.2 g/kg/day

Fat

- Adjust to meet caloric goals while carbs are reduced

Low-residue (low-fibre) diet

- <10 g/day for 4 days
- May reduce 1–2% body mass by lowering gut content

Sodium and water

- Sodium restriction based on normal intake
- Low-sodium diet (<2.3 g/day) may trigger water loss
- Heat exposure (sauna, hot baths) supports sweat rate

Body mass focus

- Target reductions in:
 - Gut content
 - Glycogen-bound water
 - Extracellular water

- Total body water
- Not fat loss—that should be done in fight camp

Practical takeaways

- Fight week is about acute, controlled physiology, not dieting
- Use glycogen depletion, low-residue diet, sodium reduction, and heat only with a plan
- Protect sleep, hydration, and cognitive function
- Avoid extreme, unsupervised rapid weight-cutting practices

Fight Day

Goal: Restore energy and hydration, maintain calmness and readiness

Fight Day focuses on maintaining calmness and readiness... supporting digestion and hydration... ensuring stable blood glucose

Training characteristics

- No high-intensity training
- Light movement, activation, and timing only

Nutritional priorities

- Restore glycogen
- Stabilise blood glucose

- Maintain hydration and electrolytes
- Avoid gastrointestinal distress
- Use only familiar foods

Energy and macronutrient guidelines

Carbohydrates

- 1–4 g/kg/day
- High-GI, easy-digestion sources:
 - Rice, potatoes, pancakes, bagels, rice crackers
 - Sports drinks (6–8% carb)
 - Low-volume snacks (dates, applesauce, pretzels, bars)

Protein

- 20–30 g per feeding

Fat

- Kept low to avoid delayed gastric emptying

Example intake windows

6-hour window

- ~210–280 g carbs
- 50–70 g protein in 20–30 g boluses

12-hour window

- ~420–560 g carbs
- 100–140 g protein in 20–30 g boluses

Rehydration

- Acute (1–2 hours post-weigh-in): 1–1.5 L/hour
- Non-acute (3–6 hours): electrolyte fluids with sodium, potassium, chloride

GI comfort

- **Avoid:** coffee, citrus, carbonated drinks, tomato products, peppermint, garlic, onion, chocolate, fatty/spicy/fried foods

Practical takeaways

- Fight day is not for experimentation
- Use high-GI, easy-digestion carbs and familiar foods
- Rehydrate gradually with electrolytes
- Keep pacing calm and controlled throughout the day

Post-Fight Recovery Phase

Goal: Restore physical, metabolic, and psychological balance

The Post-Fight Recovery Phase focuses on restoring physical, metabolic, and psychological balance after competition... The goal is to return the athlete to a healthy baseline before beginning the next training cycle

Training characteristics

- Immediate reduction in training load
- Rest, mobility, low-intensity movement
- Gradual reintroduction of aerobic work
- Injury assessment and rehab
- Sleep restoration

Nutritional priorities

- Rehydrate and restore electrolytes
- Replenish glycogen
- Support muscle repair and inflammation control
- Restore immune function
- Reverse fight-week restrictions

Energy and macronutrient guidelines

Energy

- Increase intake to restore normal physiological function
- Avoid prolonged low energy availability

Carbohydrates

- Moderate to high intake
- Whole grains, fruits, starchy vegetables, easy-digestion options in first 24–48 hours

Protein

- 1.6–2.2 g/kg/day
- Higher end if muscle damage is significant

Fat

- Reintroduce healthy fats
- Emphasise omega-3 sources for inflammation control

Body mass and composition

- Expect natural increases in body mass from rehydration and glycogen
- Avoid attempts to maintain fight weight
- Focus on returning to a healthy walk-around weight

Supplementation

- Omega-3 fatty acids
- Creatine
- Vitamin D (if deficient)
- Probiotics
- Curcumin
- Electrolytes

Practical takeaways

- Reverse restriction and restore balance
- Accept post-fight weight gain as recovery, not failure
- Use this phase to reset sleep, mood, and health markers
- Treat it as the foundation for the next off-camp phase

Injured Athletes and TBI Considerations

Musculoskeletal injuries

- Protein: 1.3–2.5 g/kg/day
- Support with vitamin D, vitamin C, zinc, creatine, fish oil, curcumin, probiotics, amino acids

Traumatic brain injury (TBI)

- Energy needs may rise to 100–200% of baseline RMR
- Protein: ~2 g/kg/day
- Creatine, omega-3, and vitamins B, C, E may support recovery and reduce oxidative damage