

Ergogenic and specialty nutrients and technical protocols for athletes

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Narrative: The author discusses specific nutrients to consider for athletic training and performance. Professional Applied Kinesiology (PAK) methods for nutrient selection are presented based on the authors experience.

Indexing terms: Chiropractic; Applied Kinesiology; Professional Applied Kinesiology; Sports Nutrition.

Introduction

Frunk nutrient deficiencies are common in the athletic population. Certain specialty nutrients can also be used regardless of deficiency to improve performance, conditioning, and recovery. The potential benefit can be screened with very simple Manual Muscle testing (MMT) methods.

...the community of athletes responds well to management by Professional AK methods including with food and nutrition ...'

Discussion

The author prefers to compartmentalise sports nutrients into relevant categories:

- ▶ General Category Nutrients
- ▶ Tissue strength factors
- ▶ Recovery and ATP support
- ▶ Hydration dynamics
- ▶ Pre-performance nutrients
- ▶ Muscle/strength Gain factors
- ▶ Endurance nutrients
- ▶ Concussion/TBI support
- ▶ Sprain/strain injury support
- ▶ Hormone and Stress support



General Category (GC) Nutrients

- ▶ Apply to all other categories and provide broad nutrient support
- ▶ High-grade, activated Multi-vitamin-mineral daily
- ▶ Low-moderate dose whole food multi-mineral daily
 - preferably mineral-amino acid complex form such as *mineral-glycinates* or *threonates*
- ▶ *Perfect Aminos* approximately ~10 grams daily (1)
- ▶ Vitamin D
 - 2500-8,000 IUs/day depending on age
 - ~10,000 IUs/day for flu prevention (2)
 - Blood levels 25-oh cholecalciferol optimally 50-100 ng/ml
- ▶ Coenzyme Q10 - 200mg/day accelerates recovery, ATP support
- ▶ Omega 3 fish oil - 3g/day or more
 - Increase and add Black Currant Seed oil if sore day after training, competition, or injury
- ▶ Quality sleep
 - Avoid back-lit devices like cellphones an hour before bedtime
 - GC nutrients important here

Tissue Strength Factors

- ▶ Liposomal Phosphatidyl Choline:
 - Welds the lipid bilayer of human cells together to make the cell membranes
 - Cell membrane strength prolongs cell lifespan and preserves raw materials the body would otherwise use to replace an injured or worn cell
 - Heart, Liver, and cognitive support (3)
- ▶ Iodine
 - Raises cellular voltage for normal cell respiration, growth, division
 - Endocrine and exocrine essential secretory nutrient
 - Facilitates fat burning for max aerobic function (4)
- ▶ Omega 3 fish oil
 - High dose, phospholipid bound like high grade krill oil
 - Incorporated into cell membrane lipid bilayer
 - Improves membrane health and fluidity and, thus, mitochondrial energy production and cell lifespan
 - Anti-inflammatory, circulation, immune, cognitive, and neuron health
- ▶ Glucosamine and Chondroitin Sulfate (GS/CS), whole food Vit C, organic copper
 - Building blocks for connective tissue repair and regeneration

Recovery and ATP Support (5)

- ▶ Post event:
 - One teaspoon sodium bicarb or tri-salts in litre of water immediately after

- Walking, cycling cool down 20 minutes
- Cold water immersion
- High sodium foods like Himalayan or Celtic sea salt with continual hydration
- Balanced meal of good fats, low-moderate protein and complex carbs
- Spleen 21 and Pericardium 6 massage 3x/day for at least 30 seconds to accelerate recovery of metabolic/organ balance
- ▶ Alpha lipoic acid, acetyl L-carnitine, Mg, Mn, COQ10, D-Ribose with GC nutrients for mitochondria support/ATP production
- ▶ Female endurance athletes: whole food Iron daily (6)
- ▶ NRF2 stimulation daily for anti-oxidant support (7)
- ▶ Mild hyperbaric chamber
 - 30 minutes to an hour/day

Hydration Dynamics

- ▶ Ph balanced, negatively charged filtered water like Penta
 - Can add healthy food-based electrolyte powder (1)
 - 100-200g (4-6oz) numerous times through the day
 - Berry teas, bone broth and high sodium soups
 - L-glutamine (5)
 - Avoid hyper-alkaline water fad (8)
- ▶ Deep tissue work. Hydration is partly about exchanging water reserves in the fascia for new water (9)
- ▶ Kidney Yin reserves (10, 11)
 - Physical indicators of Yin depletion:
 - Left psoas chronic inhibition
 - Red tongue with centerline crack and/or coating completely or partially peeled off (geographic tongue)
 - Dryness – lungs, throat, mouth, lips, eyes, urogenitals
 - Decreased tolerance of heat and mental stress
- ▶ Kidney tissue, organotherapy, TCM KI Yin tonics may be needed
- ▶ Whole food Vitamin A or E
- ▶ Acupoints – muscle test and treat points which strengthen any muscle inhibition, have patient massage throughout the week
- ▶ Kidney 1 – Wood point, ‘Gushing Spring/ Bubbling Well’
 - Important grounding point gathers healthy negative electrons from Earth when in contact with natural surfaces
- ▶ KI 3 - Source point, ‘Supreme Stream’
- ▶ KI 7 – Tonification point, ‘Returning Current’
- ▶ BL 23- ‘Kidney Transporter’, CV 4- ‘Origin Pass’, GV 4- ‘Life Gate’, LI 4- ‘Joining Valley’

Pre-performance nutrients (5)

- ▶ GC nutrients
- ▶ Buffered creatine, medium chain triglycerides 30 min pre-competition
- ▶ Individual ATP nutrients listed above that strengthen any AK MMT indicators
- ▶ Electrolyte/Energy drink as needed
 - No more than 6-8% carbohydrate
- ▶ Deep breathing techniques for anxiety, jitters, stress
 - take twice as long to exhale as it takes to inhale
 - example: inhale for 3-4 secs, then exhale for 6-8 secs, 5-10 min total

Muscle/strength Gain

- ▶ GC nutrients
- ▶ Perfect Aminos ~10g/day¹
- ▶ Buffered Creatine ~5g/day⁵
- ▶ Hydroxymethylbutyrate (HMB), RNA - if AK MMT indicated

Endurance essentials (5)

- ▶ GC
- ▶ Complete vitamin E: tocopherols and tocotrienols
- ▶ Female athletes: whole food Iron ~10 mg daily
 - Keep serum ferritin optimally above 60 (6)
- ▶ NRF2 stimulation- strong anti-oxidant action (7)
- ▶ Extra vit B2, D-ribose - if AK MMT indicated
- ▶ Broad spectrum medium chain triglycerides (12)
 - Can use before or during competition in cranberry juice or coconut water, start low-dose initially
 - Add buffered creatine if event involves multiple high intensity efforts

Concussion/Traumatic brain injury support (5, 7, 13)

Patient should be tested for B-vitamin genetic poly-morphisms and supplement any deficiencies, or if AK MMT indicated

- ▶ Especially P5P, Pantethine, 5-MTHF
 - Unburdens mesencephalon function to prevent brain neuron threshold overstimulation
- ▶ B1 facilitates blood-brain barrier
 - Consider thiamine cocarboxylase, thiamine pyrophosphate, thiamine triphosphate, or the fat-soluble Benfotiamine
- ▶ PB125 – strong NRF2 stimulation, anti-inflammatory, adaptogenic
- ▶ Omega 3 fish oil – anti-inflammatory, cools overloaded neurons
- ▶ Vit D (25-OH cholecalciferol) blood levels 50-100 ng/ml, high grade CBD oil

- Help to prevent chronic auto-immune encephalitis
- ▶ Intestinal permeability support like L-Glutamine
 - Fortifies gut-brain axis (14)
 - Urine Indican test for gut bacteria excess
 - If positive test SI, LI Alarm points for oregano oil, caprylic acid, artemisia, olive leaf extract and probiotics
- ▶ Decrease stress
 - Including radio-frequency pollution from cell phones and smart meters(15)
 - Cell-phone neutralizer, RF-shielding paint or Faraday fabric shielding, especially for sleeping areas
 - Music, esp classical is encouraged
 - Use specific Adaptogens that strengthen AK MMT

Sprain /Strain injury support

Acute Phase:

- ▶ Proteolytic enzymes 3-4x/day between meals to digest swelling
- ▶ Anti-inflammatories such as Omega 3 fish oil minimum 3g/day for pain
- ▶ Magnesium as needed for muscle spasm
- ▶ Magnet, laser therapy, and/or fascial flush with gravity over injured area to promote circulation and local fluid exchange
- ▶ Continue GC

Subacute phase:

- ▶ Same but discontinue enzymes once swelling is reduced
- ▶ Manganese (glycerophosphate if possible) and GS/CS for connective tissue healing support
- ▶ Iodine ~12mg/day, laser, and magnets to support cell respiration and voltage for new cell growth (4)
- ▶ Treat any muscle inhibition with AK, Chiropractic, MFT

Repair and Remodeling phase:

- ▶ Continue nutrients, AK, Chiropractic, and MFT for optimum healing and return to play

Hormone/Stress support:

- ▶ Complete vitamin E, B3 for cholesterol conversion to testosterone, oestrogen, progesterone, and adrenal cortex hormones as needed (16)
 - Low testosterone with elevated cortisol common in male athletes with overtraining syndrome (5)
- ▶ P5P, Vit C, Molybdenum, and protein necessary for catecholamine hormones from adrenal medulla as well as thyroid hormone (17)
- ▶ Choline bitartrate (5)
 - esp if any breathing issues during or after exercise
 - strengthen lungs, liver, digestion, adrenals

- ▶ Good fats from coconut, olive, avocado oils, European-style butter, eggs, and liver function to create healthy cholesterol level ~170-210 mg/dL
 - Total cholesterol below ~150 mg/dL is no longer adequate for normal steroid-based hormone production (6)
 - Causes amenorrhea common in female athletes
 - Low testosterone levels in male athletes
- ▶ Test AK hormonal, reproductive, and brain indicators for above nutrients and adaptogenic herbs
 - Ashwaganda, Holy Basil, Rhodiola, astragalus, eleuthero, cordyceps, reishi
 - Thousands of tested Olympic and pro athletes use adaptogens without testing problems
 - Balanced training with adequate aerobic base, the GC nutrient support, and quality sleep can often eliminate or improve stress, hormone deficiency/imbalance, and competition anxiety without need for adaptogens or common stimulants (5)

Things to generally avoid:

- ▶ For NCAA, USOC, and Professional athletes
 - Nutrient formulas and suppliers who do not show NSF certification
 - Others may be appropriate and high grade and test well using AK MMT but the athlete may be non-compliant due to fear of testing for a banned substance
- ▶ The following 8 factors that tend to create AK/MMT findings of neurologic disorganisation (NDO), and abnormal muscle facilitation and inhibition
 - For MMT purposes abnormal Gait patterns can be utilised as NDO indications that will improve when productive nutrients and training methods are discovered or when unhealthy 'nutrients' are identified and eliminated
 - Example: right gait pattern, with right foot forward the right latissimus should be facilitated and test with normal strength, if not then patient is NDO
 - HSAIDS – High Dose Synthetic and Isolated Dietary Supplements (5)
 - Often cause positive banned substances test
 - Very low grade and often toxic, pro-oxidation, and carcinogenic
 - May weaken or sometimes strengthen MMT indicators
 - Examples
 - ✓ Protein isolate powders
 - ✓ 'Vitamins' E, A, C, K, B6
 - ✓ Iron – common deficiency in female athletes but should be verified in serum ferritin test and only whole food source
 - ✓ Copper, Zinc, Selenium
 - ✓ Beta-carotene
 - ✓ Intravenous 'IV nutrients'
 - Junk fast food and soda pop
 - Laden with toxic, inflammatory, hormone-disrupting additives, excitotoxins, corn and soy oil, high fructose corn syrup or other refined carbs, or calcium disruptors like phosphoric acid

- Hydrogenated or trans-fats
 - Crisco, margarine, fried fast food
 - Very inflammatory
 - Deranging to hormones, cell wall structure, brain, and metabolism
- Refined carbohydrates
 - Promote inflammation, hormone, and metabolism disruption by over-stimulating insulin
 - Intermittent fasting, Paleo, low carb, and exercise will help restore insulin balance and sensitivity
 - May require zinc, vanadium, chromium support
- Most 'electrolyte' and 'Energy' drinks contain:
- Acesulfame potassium (carcinogen)
 - Glutamate based excitotoxin artificial sweeteners
 - ✓ Use stevia, honey, maple syrup instead
 - Stimulants such as high levels of isolated caffeine
- Stimulants like guarana, caffeine
 - Organic cold brew coffee is rich in healthy polyphenols
 - ✓ Brewed half or all decaf without creamer and sugar can be enjoyed within reason
- Growth Hormone promoting 'nutrient' formulas
 - Often cause hyper-adrenia and insulin disturbance
 - Sleep, exercise, real nutrients, and Kidney Chi promote growth naturally
- Unbalanced training (5, 18)
 - Excessive high-intensity or strength training is anaerobic, pro-oxidation, acidic; nutrient, hormone, immune, and Yang depleting; joint surface destroying over time
 - Balance anaerobic training with aerobic activities at least 50/50 based on time and intensity over the course of each week, month, year
 - ✓ Use Heart Rate monitor when training (180 minus your age formula for max aerobic training heartrate)
 - ✓ Use Heart Rate Variability (Ithlete app) and Maximum Aerobic Function test (Maffetone) to assess for overtraining syndrome
 - Use above to successfully train skeletal muscle, cardio-vascular system, brain, and metabolism
 - Incorporate chiropractic, MFT, and jumping/bouncing activities to train the fascial system
 - ✓ Encourages functional elasticity of body based on Tensegrity model of movement

For functional AK testing of potentially beneficial, safe, and legal nutrients the author has observed excellent results using various 'entry points' for muscle testing. Back Shu (Associated points), Front Mu (Alarm Points), and Source Points which create improved MMT of any previous inhibited muscle are excellent entry points for testing. TCM Tongue and pulse diagnosis, or SOT Occipital fiber analysis are also superb indicators of possible diagnostic organ/meridian points to use with AK MMT.

For example, an athlete with a pale tongue and teeth impressions on the sides of the tongue will display general weakening of a previously intact muscle, and/or strengthening of muscle inhibition, upon TL to the SP Alarm point. The indicated entry point can then be therapy-localised by touch or using a magnetic wand together with any indicator muscle (such as shoulder flexor group). The resulting muscle inhibition can then be exploited for screening nutrients on the body under the south pole of a flat bar magnet. (11)

The magnetic wand method maintains muscle inhibition by preventing the body from adapting and causing the entry point indicator to eventually disappear. Nutrients which strengthen should then be confirmed by standard AK intra-oral insalivation of the nutrient, if possible. Other AK testing methods may also be reliable and fruitful for the athletic patient. (11)

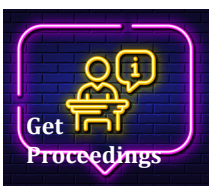
With certain exceptions like Vitamin D and Ferritin, it is recommended to consider standard blood nutrient testing with strong skepticism. Most nutrient reserves are held in tissues and organs, not the blood circulation. Many blood analysis software programs do not adequately account for such nutrient reserve tissue dynamics. Blood analysis software must be based on expert, non-linear, sophisticated algorithms to be useful and accurate. Other Urine lab findings are very helpful such as Koenisberg, Indican, Sulkowich, Vitamin C, and urine dipstick screening. (14, 19)

Conclusion

We have seen this approach to sports nutrition testing provide significant improvement in longevity, health, and fitness during training and competition.

Therefore, it is an opportunity for the PAK practitioner to functionally test nutrients and help the athlete improve and perform better by legal, healthy, and individualised clinical nutrition.

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Cite: Stark BA. Ergogenic and specialty nutrients and technical protocols for athletes. Asia-Pac Chiropr J. 2023;4.2. URL apcj.net/ak-Proceedings-papers/#StarkAthletes

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