

Foods for Specific Medical Purposes, Sports Nutrition

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13th International Workshop on Nutrition & Health
Claims Europe

Brussels, 29 May 2018

Recovery Nutrition

Carb and Protein Combo (3 - 4 to 1 ratio)

(38 % greater rate of Glycogen Synthesis than CHO only)

* 30 - 50 grams of CHO and 6 – 15 grams of PRO *



ERGOGENIC AIDS:

Definition = substances, devices, or practices that enhance an individual's energy use, production, or recovery.

(45% of all athletes consume one or more dietary supplements.)

Should Athletes Supplement Their Diet?

60 % of all Endurance Athletes are deficient in this mineral

_____.

Answer = IRON



Got Iron?



Chances are good that you're low in iron if you are:

- A female, teenager, an athlete (esp. those who strike the foot and jar organs of the body repeatedly) live at moderate to high altitude or a vegetarian.

CBC (Complete Blood Count):

- Hemoglobin- (amount of RBC in a blood sample) = 11.0 - 16.0 gm/dL.
- Hematocrit Levels- (% of RBC in a blood sample) = 38% - 46%.
- Serum Ferritin Levels- (a protein marker in blood) = >50 ng/ml.

Should Athletes Supplement Their Diet?

This mineral is needed in every nerve cell transmission, every muscle contraction and for bone and teeth formation _____

Answer = CALCIUM

Osteoporosis (porous bones)



Calcium needs for Athletes: (1300 mg/day)

Selected Food Sources of Calcium

<u>Food</u>	<u>Milligrams/serving</u>
Broccoli, 1 cup	91 mg
Mozzarella, part skim, 1.5 ounces	333 mg
Yogurt, fruit, low fat, 8 ounces	384 mg
Cheddar cheese, 1.5 ounces	307 mg
Dark Leafy Greens	100 mg
Soy milk or Almond Milk, calcium-fortified, 8 ounces	299 mg
Milk, reduced-fat (2% milk fat), 8 ounces	293 mg
Calcium Supplement	630 mg

CAFFEINE - Central nervous system stimulant, makes you feel more energetic, opens the vessels for better circulation.



Pros = Helps you burn fat and protect carbohydrate stores, makes you feel energized, helps with mental sharpness, decreases perceived exertion.

Cons = Diuretic effects. A banned substance by the NCAA if amount too high in urine.

Dosage = 3-9 mg/kg of body weight, or 1-3 mugs of coffee one hour prior to work out or competition.

CREATINE - Found in muscles and used for short term



(30 to 90 seconds) of energy production.

Pros = Improve high-intensity exercise performance, increases strength, increases lean body mass, and aids with recovery.

Cons = Some athletes are non-responders. Side effects are weight gain, diarrhea, muscle cramps, and dehydration. Can damage kidneys.

Dosage = Take 5 grams 4 times per day for 6 days followed by 3 grams per day.

Effects of Sodium Bicarbonate

Pros

- Delays fatigue
- Maintains level of performance
- Improve time to exhaustion by 42%



800m sprint time
improved by 3 seconds!

Cons

- Can cause harm to the stomach when taken in large amounts
- Nausea
- Stomach cramping
- Diarrhea

Effects of Sodium Bicarbonate

Sodium bicarbonate intake has been shown to improve exercise tolerance

Dose: 0.4 g/kg body weight

Conclusion, high-intensity intermittent exercise performance is improved by prior intake of sodium bicarbonate in trained young men

How Much?

300mg sodium bicarbonate per kg of body weight with 500ml of water.

How much for a 130lb
(59kg) athlete?



17,700mg

60-90 minutes prior





BEET ROOT JUICE-



Pros = Increases nitrate levels, can run faster, perceived exertion is lower.

- Increased levels of nitric oxide (NO). Increases blood flow & vasodilator to allow more oxygen flow.
- Overall times that were 3% faster, and 5% faster during the last mile.

Cons = Be prepared for red urine and stools as well as possible gastrointestinal distress.

Dosage = 500 ml or 2 cups of beet juice (~3-5 beets), or 300 ml of concentrated beet juice each day may lead to a 15% increase in the time taken to exhaustion. Drink it 2-3 hours before the gun goes off.

70 ml (2 ounces) concentrated shot (400 mg of beet juice)

(\$3.50)

TART CHERRY JUICE

(Montmorency)



Pros= has anti-inflammatory properties, thus, aids in performance for an upcoming competition and aids in recovery.

- Eases muscle soreness/damage (strength training) by 18%.
- Decreases muscle pain during event (endurance athletes).
- Decreases oxidative stress (production of free radicals).



TART CHERRY JUICE (Montmorency)

Cons= Gastrointestinal distress. Calorically dense, watch out for weight gain; 400 calories/day.

Dosage= Eight to 12 oz twice a day. Consistency is KEY!



\$ 9.99 per bottle

RITALIN (aka; methylphenidate)-

Stimulates the central nervous system. Used for weight loss, can be ingested via tablet, or crushed into powder and snorted and injected.



Pros = your metabolic rate is increased, your body burns more calories and you lose your appetite.

Cons = illegal substance without an Rx.

Side effects: nervousness, vomiting, nausea, increased heart rate & blood pressure & body temperature, psychotic episodes, skin rash and digestive problems. Gateway drug, as seen with Kurt Cobain.

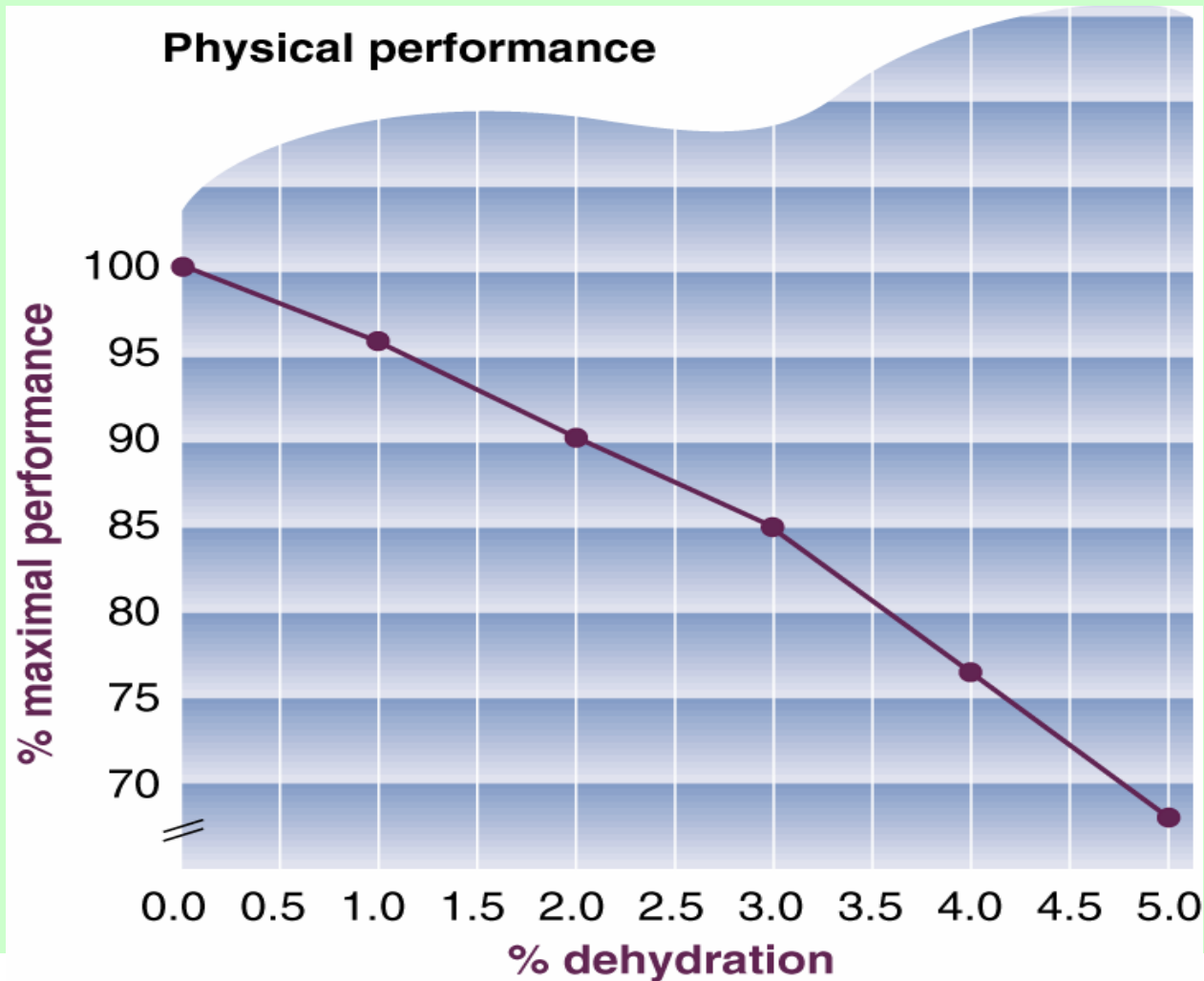
HYDRATION CHART

1		Good
2		Good
3		Fair
4		Dehydrated
5		Dehydrated
6		Very dehydrated
7		Severe dehydration

Any drinks that contain high levels of caffeine, salt, or alcohol will increase your rate of dehydration. So on days of high temperatures or heavy workloads avoid drinking, alcohol, Pepsi, Coke, Coffee, and high-energy drinks such as Red Bull.

REMEMBER IF YOU FEEL THIRSTY OR YOUR URINE IS IN THE COLOUR RANGE OF FROM 4 TO 7 YOU ARE DEHYDRATED – DRINK MORE WATER

Dehydration and Performance



Alcohol's affect on athletes:



Diminishes PRO synthesis, therefore, decreases muscle hypertrophy (impairs muscle growth).

Decreases the secretion of HGH as much as 70%.

Diminishes production of testosterone.

Promotes dehydration, thus, alters the production of ATP (muscle's source of energy).

Slows the body's ability to heal/recover.

Alcohol's affect on athletes:

Affects REM stage sleep, thus, memory formation.

Females affected more due to less dehydrogenase, enzyme that met. alcohol.

Very dense calorically (7 cal/gm) is treated as fat.

Inhibits absorption of B1, B12, folic acid & zinc.

Can affect the athlete for 3-5 days.

RED-S (Relative Energy Deficiency in Sport)

RED-S consists of impaired physiological function including, but not limited to, metabolic rate, menstrual function (in females), bone health, immunity, protein synthesis, and cardiovascular health caused by relative energy deficiency.

The David Proctor Story:



For years, track and cross-country runner David Proctor (BU'08) was anorexic. During his freshman year (left), the nearly six-foot-tall athlete dropped to 130 pounds. With the help of a nutritionist and a sports psychologist, Proctor is now a healthy 145 pounds — and a BU record-holder: he broke the infamous four-minute mile barrier in 2007.

SUMMARY (The Take Away)

“Small changes can add up to big

- 1.) Empower your athletes **improvements!** in Sports Nutrition!

“Teach them how to put HIGH TEST / PREMIUM FUEL IN THEIR BODY”

- 2.) Eat Breakfast EVERYDAY!
- 3.) Get 8 to 10 hours of sleep every night.
- 4.) Give up Fast Food, eat Real Food.
- 5.) Give up Alcohol.
- 6.) Get a Recovery Drink within 30 minutes.
- 7.) Have blood work done and fix the deficiencies.

ACTION PLAN:

- 1) Present “Sports Nutrition 101” to all Coaches, Parents, Athletes and Athletic Trainers
- 2) Daily Urine Test
- 3) Blood Work (CBC) – Iron, Calcium... And correct any deficiencies
- 4) Dietary Analysis: 2 weekdays and 1 weekend day (www.nutritiondata.com)



Thank you!

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