

NJ Sports Medicine and Performance Center
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THE TRAINING DIET

Eat 5 times a day (3 Meals, 2 Snacks)

60 – 70% Carbohydrate	About 3.1g per pound of body weight per day
15 – 20% Protein	About .5 - .90g per pound of body weight per day 70-kg athlete, total liver and muscle store = 500 – 700g Intake of 7 – 10g per kg per day
20 – 30% Fat	No less than 20g per day

PRE-EXERCISE

Intake of 150 – 300g carbohydrate three hours before exercise will increase muscle glycogen and increase performance

CARBOHYDRATE AND FLUID INGESTION DURING EXERCISE

60 – 70g carbohydrate per hour training	Use of carbohydrate levels off at 1g/min
300 – 400 calories per hour of training	GU Gel = 100 calories, 25g carbohydrate Power Bar Gel = 120 calories, 26g carbohydrate
400 – 600 ml fluid per hour	Drinking Ad Libitum (when you want to) is proven to have no detrimental effect on performance
Sodium of .15g/L to .45g/L	Gatorade 8 fl oz (240ml) = 50 calories, 14g carbohydrate, Sodium 110mg

NUTRITION AFTER EXERCISE

Maximum rate of muscle glycogen synthesis is reached at a carbohydrate intake between 1.2 and 1.4g/min (75 to 90g of carbohydrate per hour)

Carbohydrate intake of 1.2g per kg body weight per hour for 4 hours (preferably within 90 min)

Consume carbohydrate every 15 – 30 minutes

Total intake of 8 – 10 g per kg body weight within 24 hours

Addition of protein to enhance insulin response does NOT seem to be more beneficial

For every pound lost, athlete should consume about 1 pint (16 oz, 480ml)

BOOST: 8 fl oz = 240 calories, 41g carbohydrate

VEGETARIAN DIETS

Overall, lower in total fat, saturated fat, and cholesterol

Vegan or Total Vegetarian = Fruits, vegetables, legumes, grains, seeds, nuts

Lactovegetarian = Plant foods plus cheese and dairy

Ovo-lactovegetarian = Also includes eggs

Semi-vegetarian = Include chicken and fish

Watch out for:

Protein: whole grains, legumes (dried beans and peas), seeds, and nuts

Can choose soy protein

Iron: dried beans, spinach, dried fruit, brewer's yeast, enriched products

Vitamin C enhances iron absorption. Cast-iron cookware.

Vitamin B12: comes naturally only from animal sources

Fortified breakfast cereals, fortified soy, vitamin supplements

Vitamin D: may need supplement if not enough sunlight exposure

Calcium: Spinach, kale, and broccoli

Zinc: whole grains, wheat germ, nuts, legumes

note: supplements with 50mcg or more may lower HDL

WOMEN

Iron: lean red meat and dark poultry, lentils, and iron-fortified breakfast cereals

Coffee and tea block iron uptake from food

TOO MUCH IS BAD, rare in women with menstruation. MEN should not take iron supplements.

Calcium: 1200 mg to 1500 mg (more than four servings of milk)

Calcium fortified OJ, calcium rich tofu and greens

Note: stress fractures are NOT caused by inadequate calcium intake, caused by training error and caloric deficit

Osteoporosis prevention starts early and can not be treated late

Calcium supplements with meals or with iron, decrease iron absorption significantly

Fat free products: refined and low in key nutrients, doesn't mean calorie free

Weight loss = Caloric output greater than intake (Weight loss does NOT equal Fat Free Food)

Exercise-induced Amenorrhea may be corrected simply by correcting caloric deficit (add Boost or Balance Bar and fruit post workout).

Female Athlete Triad = Disordered eating, amenorrhea, osteoporosis

WINTER EATING

Seasonal Affective Disorder (the winter blues)

Bananas for Vitamin B6 boosts serotonin in the brain

Fish for omega-3 Fatty acids

Steak for selenium (also in nuts, oatmeal, seafood)

Whole grains encourage tryptophan to enter the brain and boost serotonin levels

Immune System

Vitamin C debatable benefit: oranges

Zinc debatable benefit: Shellfish, lean meats, beans, wheat germ

Beta-carotene (vitamin A) butternut squash for lining of skin, mucuous membranes

Onions, garlic, leeks (quercitin) an antioxidant (grapes, tea, and berries)

Stay warm, calorie positive, recover post workout quickly, plenty of sleep, and wash hands and do not touch your face.

Energy

Shrink meals but eat more of them

Stay hydrated

Cut back on coffee

SUPPLEMENTS

No benefits in performance that cannot be achieved by an adequate and balanced diet alone.

“Sounds too good to be true”

Most products have unlisted substances such as ephedrine, caffeine, and anabolic steroids.

Take at own risk. You may test positive at a drug control.

If you want to take a multivitamin and mineral supplement as insurance to a bad diet, take a supplement that contains one time the RDI.

Some Supplements:

Creatine

- naturally occurring in meat or fish**
- is synthesized by human body and therefore not essential**
- Oral ingestion suppresses biosynthesis**
- Optimal intake 5 g 4X/day for five days**
- improves repeat sprint performance**
- variable response**
- increase water in muscle, increase overall weight, increase muscle tears**
- to date no long term consequences**

Carnitine

- naturally found in meat and synthesized in the body**
- transports fatty acids into the mitochondria**
- does NOT work as a “fat burner”**
- does NOT enter muscle**
- does NOT increase VO₂ or reduce lactate**

Coenzyme Q

- Integral part of electron transport chain in mitochondria**
- present in heart muscle**
- in heart patients, improves exercise capacity**
- scavenge free radicals**
- supplementation did NOT alter muscle concentration**
- supplementation did NOT increase VO₂**
- DID augment free radical production in some studies (bad for you)**

Chromium

- found in cooked chicken breast, peas, micro-brewed beers, cup of refried beans**
- assists insulin in processing carbohydrates**
- can hamper absorption of iron and zinc**
- can damage liver**
- did not help burn fat and build muscle size**