



**If you can take time to train,
you can take time to eat well.**

Consider nutrition as the 4th discipline

TRAINING & RACING NUTRITION/GUIDELINES

“Prepare/Practice/Perfect”

FOOD AS FUEL

6 Essential Nutrients: Carbohydrates, Proteins, Fats, Water, Vitamins, Minerals

- 1) **Carbohydrates/Proteins/Fats**-Macronutrients are the only nutrients that provide the body energy (calories).
- 2) **Water**-Macronutrient does not supply energy. Rather it is needed for proper metabolic function of fuel as well as regulating core body temperature.
- 3) **Vitamins/Minerals**-Micronutrients play a critical role in the breakdown and utilization of macronutrients.

Triathletes are encouraged to maintain a diet that provides:

- 1) A variety of foods from all food groups: fruits/vegetables, whole grains, nuts/seeds, low-fat dairy, beans/legumes, and low-saturated-fat meats.
- 2) Sufficient energy/calories to maintain a healthy body weight/body composition.
- 3) General health guidelines: low saturated fats, low salt, high fiber.

Energy Balance (Expenditure vs. Consumption)

- Estimating energy needs and requirements is not an exact science. Needs are determined by Resting Metabolic Rate, Thermic Effect of Food, and Energy Expenditure for Activity's.

CALORIC GUIDELINES

Daily Activity Level	Calories/LB Body Weight	Comments
No Training/Rest Day	12-15	OFF DAY
Up to 60mins Moderate Intensity	15-18	SPRINT DISTANCE
High Activity of 1-3 hrs	18-25	OLYMPIC DISTANCE
Very high activity of 3+ hrs.	25-30plus	LONG DISTANCE

CARBOHYDRATE GUIDELINES

Daily Activity Level	Grams/LB Body Weight
Up to 60mins Moderate Intensity	2.5-3.0
Greater than 90mins Mod/High Intensity	3.0-4.5
Greater than 3hrs Mod Intensity	4.5-5.5+

PROTEIN GUIDELINES

Daily Activity Level	Calories/LB Body Weight	Grams/Kilogram
Up to 60 Mins per day	0.5	1.1
Between 1-2hrs	.06	1.3
Between 2-3hrs	0.7	1.5
Greater than 3hrs	0.8	1.8

FLUIDS

Guidelines for a HYDRATION PLAN:

FLUID INTAKE	AMOUNT
Daily	½ BW in oz. (Ex 150lbs/2=75oz)
2hrs Before Training	16-20oz water/sports drink
15-30mins Before Training	6-10 oz water/sports drink
During	4-10 oz every 15-20mins water/sports drink
After	20-24 oz per LB body weight lost.

Drinks with a little sodium (sports drinks) improve fluid retention. As an alternative, pre-exercise, you can consume sodium-containing foods (salted oatmeal, pretzels, broth). How much you need to drink depends on how much sweat you lose. It's good to weigh yourself before and after training. You can also simply monitor your urine. Drink enough so urine is pale in color. Not urinating for several hours post-exercise is bad: dehydration!

CAUTION: *HYPONATREMIA*: Athletes can drink too much. Also known as Low Blood Sodium. Best to calculate Sweat Rate (email Ben if you would like the procedures on how to do so)

TRAINING/RACING NUTRITION

Fuel Sources for Training/Racing Times/Intensities

Training/Racing Time	Fluid	Semi Solid	Solids
Less than 60mins	Water/Sports Drink	Gel w/ Water	-----
1-3hrs	Sports Drink	Gel w/ Water	Energy Bar (small amounts)
Greater than 3hrs	Sports Drink	Gel w/ Water	Solids w/ Water

BEFORE TRAINING	DURING TRAINING	RECOVERY
Low-fat, moderate protein, high carbohydrate meal/snack 1-4hrs prior	Aim for 30-75 grams CHO per hour.	Sleep/Nutrition equal in importance.
0.5g of CHO per pound for each hour of activity (150lbs x 0.5gm/lb = 75 x 1hr = 75grams)	Divide CHO into 2-4 doses every 30mins or so.	Goal is to replenish muscle/liver glycogen stores, fluids, electrolyte balance, and protein synthesis
Be optimally hydrated	Every 15-20 grams of CHO should be accompanied by 8-10 oz of fluid.	“WINDOW” 30mins-2hrs
Solids w/in 1-4hrs are better digested. Semi solids/liquids better tolerated if less than 1hr away.	NOTE: Sports drinks should fall w/in 6-8% CHO solution which suggests optimal gastric emptying	Optimal Ratio of CHO:PRO is 3:1-4:1 → 0.5g CHO w/ 0.15g PRO to 1.0g CHO w/ 0.25g PRO per pound body weight.
Low fiber choices	ACSM & NATA support closely matching fluid replacement and fluid loss.	Whole foods are encouraged. But recovery drinks are available.