Nutrition for Runners

FURMAN INSTITUTE OF RUNNING & SCIENTIFIC TRAINING FIRST

The 5 Biggest Nutritional Mistakes Runners Make

- Excess hydrating
- Too much simple sugar
- Training on too few calories
- Not consuming enough calories after workouts
- Swayed by the “magic bullet”

Essential Nutrients

categorized as

1. MACROnutrients (fuel nutrients)
2. MICROnutrients
3. Water

MACROnutrients

Carbohydrates

- energy source
- cell maintenance
- heat production
- regulate fat
- help metabolize protein

Protein

- build & repair tissue (muscles, organs, bones)
- work with enzymes
- work with antibodies
- work with hormones
- maintain body fluid balance
- source of energy (limited)

Fat

- ✓ as a source of energy
- ✓ to transport fat soluble vitamins (A,D,E,K)
- ✓ supply essential fatty acids
- ✓ thermal regulation
- ✓ cell membranes

MICROnutrients
Vitamins and Minerals

substances essential for normal body metabolism, growth, and development; required in very small amounts to help chemical reactions; help regulate body functions

- regulate muscular and nervous tissue excitability
- regulate blood clotting
- regulate normal heart rhythm
- maintain water balance
- maintain acid-base balance

Vitamins - organic substances

- humans need 13 vitamins

Minerals - inorganic compounds

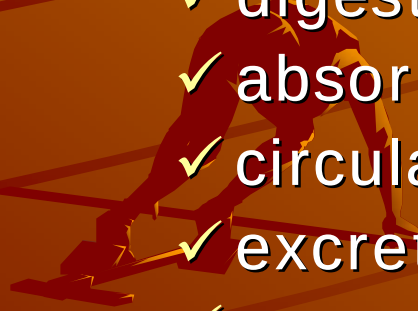
- 17 essential minerals

Water

The most important nutrient in the chemistry and function of the human body

Involved in every vital body process

- ✓ digestion
- ✓ absorption
- ✓ circulation
- ✓ excretion
- ✓ transportation
- ✓ temperature regulation



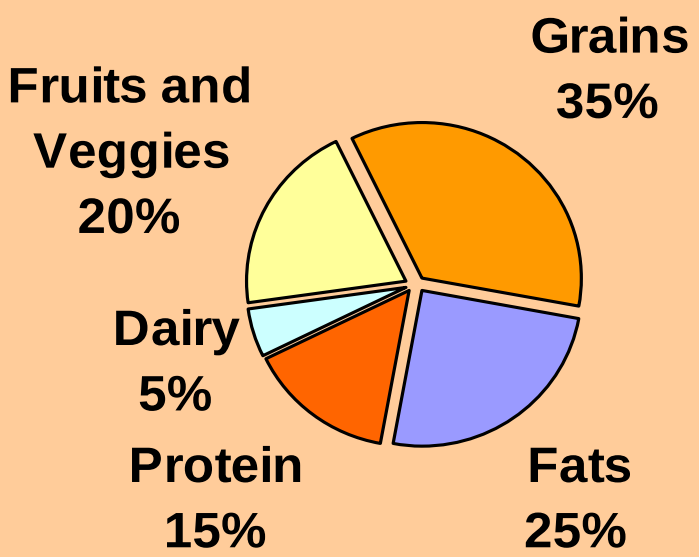
Fluid First
daily hydration essentials

- The importance of water and daily hydration strategies
- Sweat and dehydration
- Electrolytes
- Diuretics
- Hyponatremia

The Daily Training Diet

- The importance of your daily diet
  - Variety, moderation, balance, & quality

Suggestion for balancing a sports diet



Learn about nutrition and how to read and interpret food labels (See Figure 1).

Creating the Optimal Training Diet

Serving Recommendations for Various Calorie Levels

	~1,800	~2,200	~2,500	~ 2,800	~ 3,300	~ 3,800	~4,200
Grains	8	9	11	14	18	22	24
Veggies	3	4	4	5	6	6	7
Fruit	3	3	3	4	5	5	6
Dairy	3	3	4	4	4	5	5
Meat	2	3	3	3-4	4-5	5	6
Fats Oils Sweets	No recommendations. Enjoy foods from this category if you can afford the Calories after eating the recommended servings from the five food groups						

The Daily Training Diet

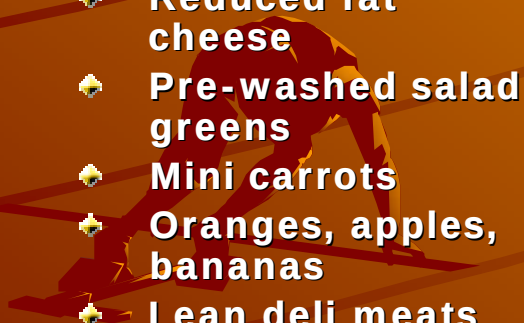
- Sources of Carbohydrates
  - Grains, breads, cereals, rice & pasta
  - Fruits and fruit juices
  - vegetables
- Sources of Protein
  - Milk and yogurt
  - Meat, poultry, fish, cheese & eggs
  - Soy, dried beans & lentils
- Sources of Fat
  - Fat, oils, nuts & seeds

The Daily Training Diet

simple suggestions for stocking your kitchen

For the Frig

- Fresh fruit
- Fresh veggies
- Juices
- Milk
- Jogurt
- Eggs
- Reduced fat cheese
- Pre-washed salad greens
- Mini carrots
- Oranges, apples, bananas
- Lean deli meats
- Fresh pasta
- Soy and rice milk
- Sauces and condiments
- Salsa



For the Freezer

- Chicken tenders
- Lean ground beef
- Lean pork filets
- Cubed meat for stir-fry
- Soy & garden burgers
- TVP
- Variety of breads
- Waffles
- English muffins
- Muffins
- Tortillas
- Frozen veggies
- Stir-fry mixes
- Frozen fruit
- Per-cooked pasta
- Egg substitute

For the Pantry

- Pasta
- Rice
- Couscous
- Pilaf
- Canned beans
- Canned tuna
- Peanut butter
- Instant stuffing mixes
- Low fat crackers
- Variety of cold cereals
- Oatmeal
- Dried fruit
- Granola bars
- Canned soup
- Nuts and seeds
- Pretzels
- Fig newtons
- Seasoning mixes
- Instant soup

Nutrients for Optimal Performance

a balance of supply and demand

Supply

Demand

Body Fuel Stores	Calories
Carbohydrate Stores	
Blood glucose	80
Liver glycogen	400
Muscle glycogen	1,400-1,800
Fat Stores	
blood fatty acids	7
Serum triglycerides	75
muscle triglycerides	2,700
adipose tissue triglycerides	80,000
Protein Stores	
muscle protein	30,000

Nutrients for Optimal Performance

a balance of supply and demand

- Carbohydrate (60% of total calories)
  - Training 1 hour a day – 3 grams per pound of body weight
  - Training 2 hours a day – 4 grams per pound of body weight
  - Training 3 hours a day – 5 grams per pound of body weight
- Protein (15% of total calories)
  - 0.55 to 0.75 grams per pound of body weight
- Fat (25% of total calories)
  - Approximately 0.5 grams per pound of body weight

Nutrients for Optimal Performance

a balance of supply and demand

Use the numbers of grams derived to estimate daily caloric needs:

Grams of carbohydrate x 4 Calories/gram

+

Grams of protein x 4 Calories/gram

+

Grams of fat x 9 Calories /gram

= estimated total daily calories

Nutrients for Optimal Performance

Example

Estimated daily caloric needs of a 150 pound runner

- Carbohydrate
  - Training 1 hour a day – 3 grams per pound of body weight

  3 grams / pound x 150 lbs = 450 grams of carbohydrate

  450 grams of carbohydrate x 4 Calories/gram = **1800 carbo Calories**
- Protein
  - 0.55 to 0.75 grams per pound of body weight

  0.75 grams / pound x 150 lbs = 112 grams of protein

  112 grams of protein x 4 Calories/gram = **448 protein Calories**
- Fat
  - Approximately 0.5 grams per pound of body weight

  0.5 grams / pound x 150 lbs = 75 grams of fat

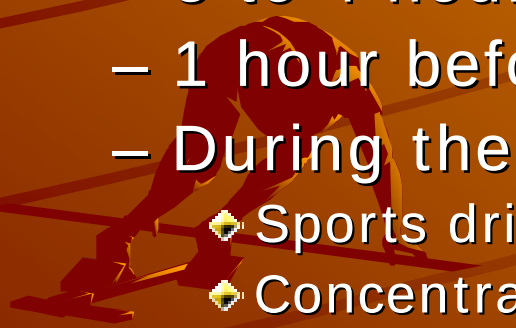
  75 grams of fat x 9 Calories/gram = **675 fat Calories**

estimated total daily calories = 2923 Calories

Eating for Training and Competition

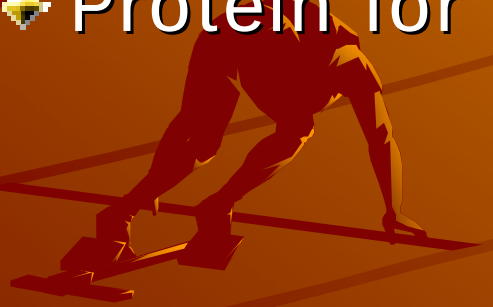
timing matters

- Nutrition before training and competition
- Carbohydrate loading
- The day before the event
- The day of the event
  - 3 to 4 hours before exercise
  - 1 hour before exercise
  - During the event
    - Sports drinks vs. water
    - Concentration
    - Volume of fluid
    - Intestinal absorption
    - Timing of consumption
    - Form



Eating for Optimal Recovery
do it quickly

- Rehydrate: Remember fluids first
- Replenish Carbohydrates - the recovery fuel
  - Consume high glycemic carbos immediately after workouts
- Protein for recovery



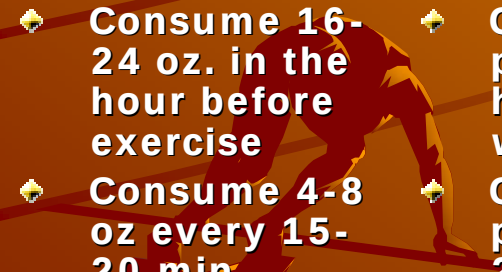
Weight and Body Composition
becoming lean and strong

- Body composition and performance
- Changing your body composition
  - Strategies for losing weight
  - Strategies for gaining weight
- Disordered eating

Do Sport Nutrition Products Fit in a Healthy Diet?

- Real food vs. Engineered food
- Fill in or round out your diet with energy products but don't make them the main part of it.

Practical Uses for Sports Nutrition Products



Sports Drinks

- Consume 16-24 oz. in the hour before exercise
- Consume 4-8 oz every 15-20 min. during exercise
- Consume after exercise with a more concentrated Carbo source

Sports Gels

- Consume 1 packet in the hour prior to workout
- Consume 1 packet with 20 oz. of water during exercise when well hydrated

Sports Bars

- Consume as part of pre-exercise meal
- Consume in the hour before racing if tolerated
- Consume as part of immediate post-exercise recovery nutrition plan

High Carbo Energy Drinks

- Consume 16-32 oz. 1-2 hours prior to exercise
- Consume for post-exercise recovery

Supplements and Ergogenic Aids

Do they help? Are they Safe? Are they legal?

- Arginine, Lysine, Ornithine
- BCAA
- Bicarbonate
- Caffeine
- Carnitine
- Chondroitin Sulfate
- Chromium
- Cijuiwa
- Colostrum
- Co-Q10
- Creatine
- DMG
- Energy Bars
- Energy Gels
- Fluid Replacement Drinks
- Ginseng
- Glucosamine
- Glutamine
- Glycerol
- HMB
- MCTs
- Phosphate
- Phosphatidylserine
- Polylactate
- Pyruvate
- Ribose
- Sodium Citrate

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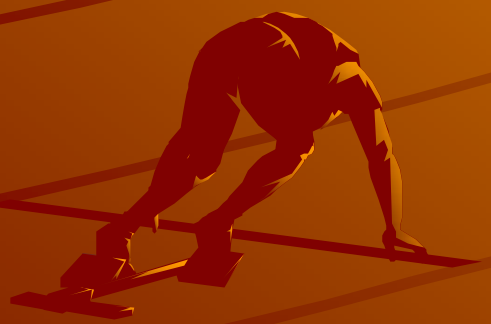

Discussion ?

Comments ?

Q & A

Thank You