Exercise
&
Nutrition

FRUITFUL ELEMENTS

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Feb. 2012

Agenda

- Good Digestion = Good Health
- Cardio: Nutrients Pre-During-Post Exercise
- Weight: Nutrients Pre & Post Exercise
- Maintaining Joint Integrity

Digestive System

Components

- Digestion
- Absorption
- Elimination

2 Steps to Optimal Digestion & Absorption

1. Ensure Optimal Enzyme & Stomach Acid Levels

- Help break down foods & minerals into small particles in order to be absorbed
- Sources
  - Our body
  - Raw foods
  - Digestive supplements
- Signs of low activity
  - Gas/bloating
  - Burning/discomfort after eating
  - Fatigue
  - Bad breathe

Enzymes & Stomach Acid…

Eat more

- Pineapple
- Avocado
- Banana
- Papaya

Eat less

- Red meat
- Dairy
- Processed foods
- Carbonated drinks

2. Drink Plenty of Water

- Drink 6 to 8, 8 oz glasses/day
  - Increases stomach acid
  - Helps enzymes function
  - Transports nutrients through body
  - Helps flush toxins
  - Helps prevent constipation

2 Steps to Optimal Elimination

1. Increase Fibre

- Vegetables – 5 or more servings
- Fruits – 2 servings
- Legumes – 2 servings
- Whole grains – 1-2 servings

* 19-30 grams of fibre per day

2. Ensure optimal levels of friendly bacteria

- Yogurt
- Probiotic supplements

Energy Sources

3 Macronutrients

1. **Carbohydrates** - pasta, breads etc.
2. **Proteins** – chicken, eggs, beef etc.
3. **Fats** – nuts, seeds, avocado, fish oil

* How and when you use all three depends on *type, duration & intensity* of work-out/sport

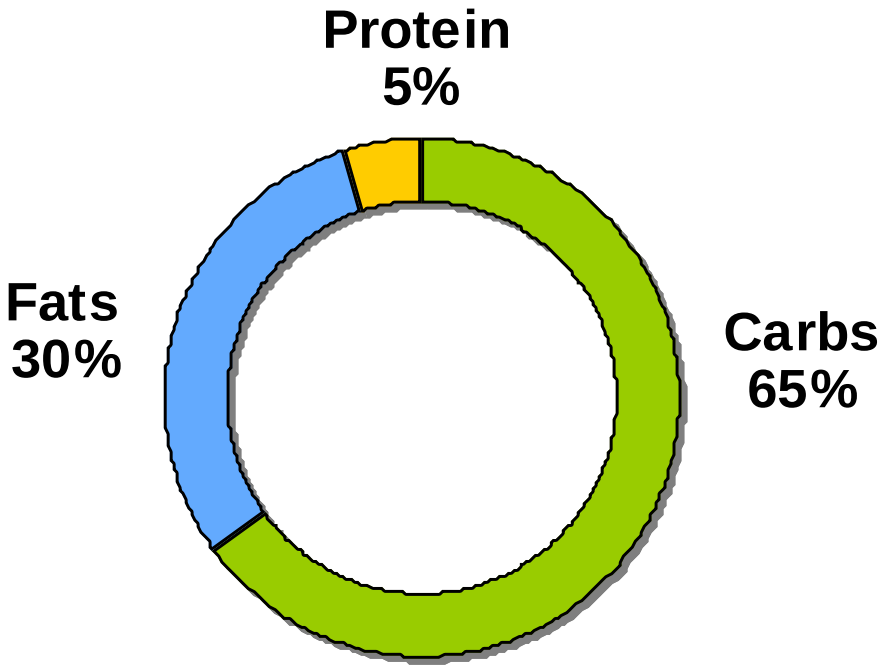
Cardio: Pre-During-Post Exercise

Preferred Energy Source

- Carbohydrates
  - Store glycogen
  - Sustain blood sugar levels

- Fluids
  - Remain hydrated

Proportion of Macronutrients Used - Hard Cardio Work-out



Carbohydrates

- Converted into glucose
  - Main fuel source for muscles & brain
- Glucose stored in body as glycogen
  - Liver – 87-100 g.
  - Muscles – 350 g.
- Glucose runs out =
  - Muscles stop performing
  - Mental fatigue

Two Hormones Affecting Blood Glucose

- Adrenaline
  - Breaks down liver glycogen
- Cortisol
  - Promotes protein catabolism

Glycemic Index

How quickly carbohydrates are converted into blood sugar

- Complex Carbs = Low-Medium

- Simple Carbs = High

1 to 39	70-100
•Carrot (cooked) – 36 •Apple - 39 •Peas – 32 •Cherries – 32 •Low fat yogurt – 20 •Grapefruit – 36	•White bread – 70 •Special K cereal – 77 •White rice – 83 •Ice cream – 87 •Grapenut cereal – 96 •Wheat thins – 96 •Baked Potato – 98 •Shredded wheat cereal - 99 •Melba toast – 100 • Sugar – 100
40 to 69	**100 or more**
•Kidney beans – 42 •Black beans – 43 •Dried apricots – 44 •Lima beans – 46 •Whole wheat fettuccine - 46 •Carrot (raw) - 47 •Chick peas – 47 • Oatmeal– 49 •Quinoa - 51 •Pear - 53 •Whole wheat spaghetti – 53 •Sweet potato - 54 •Navy beans – 54 •Apple juice - 58 •Peach – 60 • Banana– 62 •Orange 63 •Grapes - 66	•Bagel – 103 •Cheerios – 106 •French fries - 107 •Donut – 108 •Waffles – 109 •Rice Krispies – 117 •Cornflakes - 119

Carbohydrate Intake

1. **Before** – Saturate glycogen stores
   - Mod. to low G.I. (20-30 g).
   - 60 min. before work-out
2. **During** –Sustain energy
   - (90 min. or more)
   - High G.I. Drink or gel (glucose polymers)
3. **After** – Replace liver & muscle glycogen
   - High G.I. (30-50 g.) 30-60 min. post work-out

Healthy Carb Foods

- Whole grain/bran muffin
- Whole grain bread/toast
- Oatmeal/whole grain cereal
- Banana

Good Carb Supplements

Bars

- Clif
- Luna

Gels

- Accel
- Clif shot
- Gulp n’ Go
- Gu
- Hammer Gel

Hydration

- Critical to cardio exercise
- Delivers O2, nutrients & hormone to cells
- Regulates body temperature
- Replaces lost fluids
- Helps maintain electrolyte balance

Fluid Intake

1. Before

- 12-14 hrs. before at least 2.5-3.0 litres
- 1-1.5 hrs. before – drink 500 ml

2. During (60-90 min. or more intense activity)

- Sip 250 ml every 15-20 min. or
- High G.I. Drink or gel (glucose polymers)

3. After

- Immediately drink 500 ml.
- If very intense-should contain electrolytes & carbs to increase hydration & glycogen replacement

Good Hydrating Fluids

- Water
- Coconut water!
- Accelerate
- Gatorade Endurance Formula
- Endurox R4 Performance Recovery
- Amino Vitl

*Tip: Drink what tastes good to you you'll consume more!

Hydrating with Booze

- Exercise does not enhance alcohol metabolism
- Diuretic effect
- Impairs ability to cool down
- Stimulates appetite

Weight training/Strengthening: Pre & Post Exercise

Preferred Energy Source

- Protein
  - Helps build collagen for muscle repair

Biological Value of Protein Foods

- Whey protein powder – 104
- Egg – 94
- Cheese – 84
- Fish – 76
- Beef - 74

Protein Intake

1. Before

- 20-30 grams 30 min. pre weight training

2. After

- 20-30 grams 30-60 min post weight training

*If only going to consume one protein meal-more important to do the one *after* your work-out

Protein Content of Food

Food	Amount	Grams of Protein
Almonds	12	3
Sea bass	½ oz	6
Sardines	1 oz	6
Tuna	1 oz	6
Eggs	1	6
Greek yogurt	¾ Cup	15
Cod	1 oz	7
Haddock	1 oz	7
Cheese	1 oz	7
Plain Yogurt	½ Cup	7
Halibut	1 oz	7.5
Salmon	1 oz	7.5
Beef tenderloin	1 oz	7.5
Chicken breast	1 oz	8
Quinoa	1 Cup	9
Chickpeas	1 Cup	12
Kidney beans	1 Cup	13
Black beans	1 Cup	15
Lentils	1 Cup	18
Whey protein powder	1 heaping scoop	25 (this may vary slightly depending on specific brand used)

Good Whey Protein Brands

- Iso Whey – Interactive Nutrition
- Low-carb Iso-Whey – Precision Nutrition
- Iso-flex – Almax Nutrition
- Whey-Max - PVL

Cardio & Weights: Importance of Fat

Goods Fat

- Increases deliver of O2 & nutrients to muscles
- Increases aerobic metabolism needed in cardio exercises/sports
- Reduces inflammation in tissues/muscles, therefore speeds recovery time
- Improves cardiovascular health
- Promotes healthy nervous system

Healthy Sources

- Fish - eat 3-4x/week
- Nuts/seeds
  - almonds, walnuts & sunflower seeds
- Olive oil
- Avocados
- Eggs

Supplements

- 2-4, 500 mg capsules or tbsp/day

Joint & Skin Integrity

Joint Integrity

Joints

- Hold bones together where two bones meet

Tendons

- Attach muscles to bones

Over use= Swelling and pain

Traditional Treatment

Anti-inflammatories

- Mask pain
- Short term effect
- Do not regenerate tissue
- Inhibit repair

1. Reduce/Eliminate Nightshade Vegetables

- Potatoes
- Tomatoes
- Eggplant
- Peppers

Inhibit collagen repair

2. Increase Antioxidants

- Blueberries
- Blackberries
- Cherries
- Strawberries
- Raspberries

Slow down progression of arthritis

3. Increase Sulfur-Rich Foods

- Eggs
- Onions
- Garlic
- Cabbage
- Brussel sprouts

Help repair joints

4. Glucosamine Supplements

- Naturally occurring compound in body that decreases with age
- Helps repair tissue
- Helps reduce pain & inflammation
- Long term benefits
- No side effects
- 500 mg/3x day for 4-6 weeks

5. Essential Fatty Acids

- Fish (3 times/week)
- Nuts & seeds
- Fish oil supplements (2-4 capsules/day)
- Flax seed oil (2 tbsp/day)

- Reduces pain & inflammation
- Lubricates joints□

6. Increase your intake of:

- Pineapple
- Celery
- Cucumber

- Natural anti-inflammatory
- Help repair joints

7. Drink

- Astragalus
- Licorice root
- Echinachia

Anti-inflammatory

8. Herbs

- Horsetail
- Nettle

- Helps reduce swelling
- Helps build strong joints

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