Sports Nutrition

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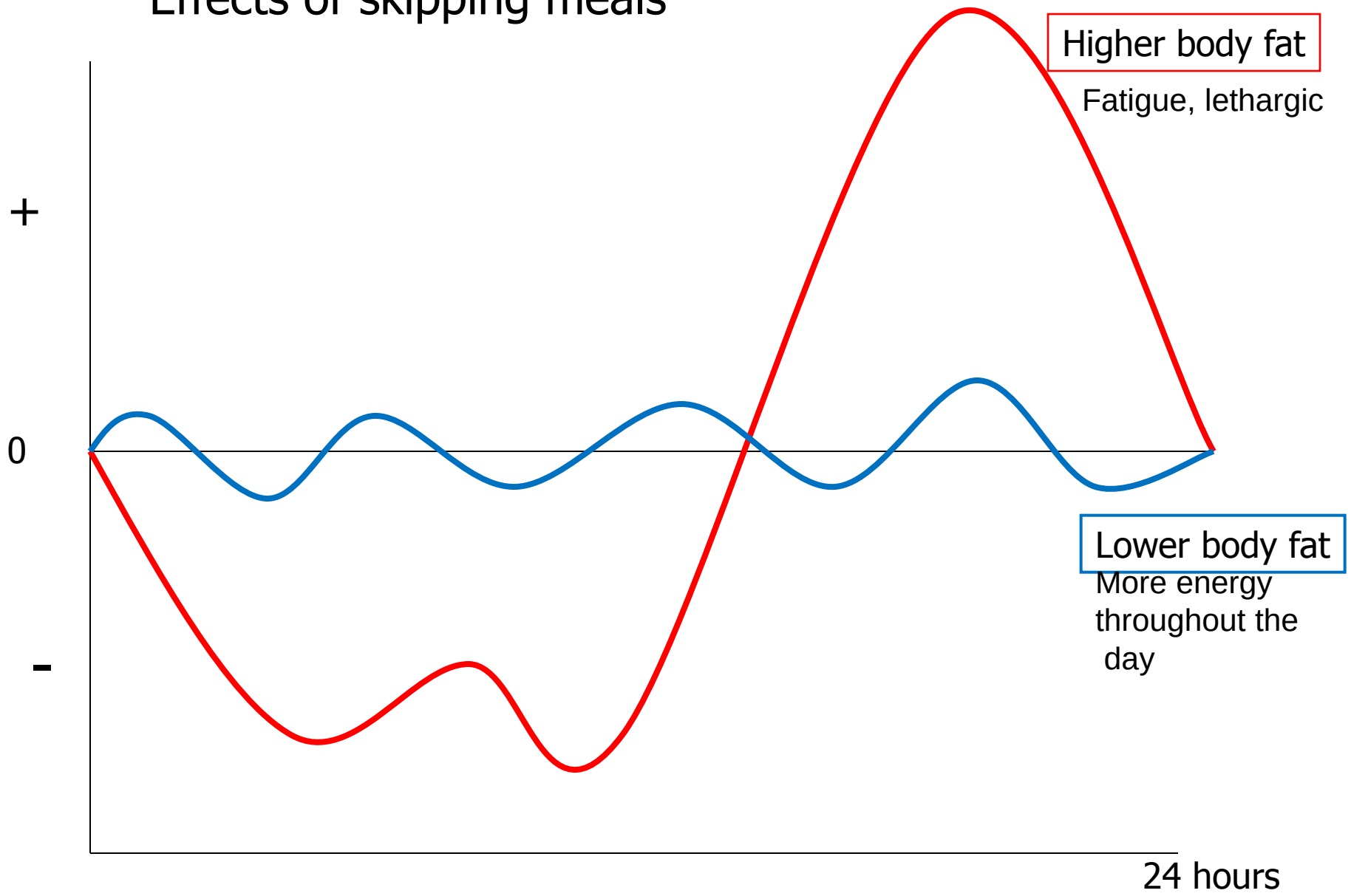
Nutrition Knowledge

- Survey of Athletes
- Most nutritious carbohydrate
  - 63% chose an apple while 37% chose French fries
- Good source of protein
  - 63% chose chicken, while 37% chose oatmeal
- Food Groups
  - 95% identified the food groups, but only 45% could identify foods from the group

Nutrition Practices

- 30% of athletes skip breakfast
- 25% skip lunch
- 86% eat at fast food restaurants each week
- 82% of male track, basketball, and football teams could not identify the fuel sources in the muscles

Effects of skipping meals



Athletes who skip meals and only eat one meal per day have higher body fat

Deutz et al, 2000 Med Sci Sports Exerc 32(3) 659-68

Recovery Nutrition

- Normally takes 24 to 36 hours to replace muscle energy (glycogen)
- Consuming carbohydrates immediately post exercise (w/n 30 minutes) and again at 2 hours post an athlete can reload the muscles in 12 to 16 hours
- Snack should be mostly carbohydrates and some protein (.75-1.0 g CHO/KG and 0.5 g PRO/kgbw))
- Recovery shake, chocolate milk, smoothie, peanut butter sandwich, energy bar, yogurt, turkey sandwich, string cheese and crackers

Protein and Recovery

- Study found that:
  - Consuming 20 grams of protein is sufficient to stimulate muscle protein
    - 3 ounces of chicken, beef , pork, fish
  - Need to consume the protein 5-6 times throughout the day to maximize muscle protein synthesis
  - Chronic protein consumption in excess of this rate could actually lead to shutting down the body's ability to make new muscle protein

Moore et.al., AJCN Jan 2009, Tarnopolsky et. al., 2011

Recovery Nutrition

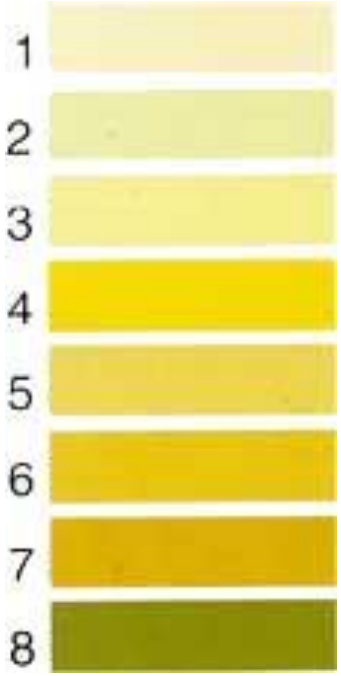
- **Not all athletes need to practice recovery nutrition**
  - Off season athletes or a marathoner for example
- **Replace fluids and electrolytes that are lost during exercise**
  - Consuming rehydration beverages and salty foods as subsequent meals/snacks will help replace fluids and electrolytes

Fluids and Hydration

- **Pre-exercise**
  - Drink 2 to 3 cups of fluid 2-3 hours before
  - Drink 1-1.5 cups of fluid 10 to 15 min prior to exercise
  - This will optimize hydration and allow enough time for excretion of any excess fluid
- **During exercise**
  - Drink enough fluid to maintain weight during the workout or competition
  - 6-12 ounces every 15-20 minutes
- **Post exercise**
  - Drink 3 cups of fluid for each pound lost
  - Restore weight before next workout/game

Monitor Fluid Loss

- Two ways:
- Weigh in before practice and after practice
  - Drink 3 cups (24 oz) for every 1 lb weight lost through sweat
  - Two gulps are about 3 ounces
  - Replace what you have lost before next practice
- Check the color of urine



1 - 3 = Optimally Hydrated
4 - 6 = Slightly dehydrated should drink more
6 - 8 = Dehydrated, must drink more

Supplements

- 27-33 billion dollars spent on dietary supplements
- Over 50% of Americans take supplements
- Regulated differently than drugs
- Dietary Supplement Health Education Act (DSHEA)
  - manufacturer is responsible for ensuring that a dietary supplement or ingredient is safe before it is marketed.
  - manufacturers do not need to register their products with FDA nor get FDA approval before producing or selling dietary supplements

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FDA Warning Letters

- The U.S. Food and Drug Administration today issued warning letters to ten manufacturers and distributors of dietary supplements containing dimethylamylamine, more popularly known as DMAA, for marketing products for which evidence of the safety of the product had not been submitted to FDA.
- Also referred to as 1,3-dimethylamylamine, methylhexanamine, or geranium extract, the ingredient is in dietary supplements and is often touted as a "natural" stimulant.
- The companies receiving warning letters and their product names are:

- **Company/product**
- **Exclusive Supplements: Biorhythm SSIN Juice**
- **Fahrenheit Nutrition: Lean Efx**
- **Gaspari Nutrition: Spirodex**
- **iSatori Global Technologies, LLC: PWR**
- **Muscle Warfare, Inc.: Napalm**
- **MuscleMeds Performance Technologies: Code Red**
- **Nutrex Research: Hemo Rage Black**
  - **Lipo-6 Black Ultra Concentrate**
  - **Lipo-6 Black**
  - **Lipo-6 Black Hers Ultra Concentrate**
  - **Lipo-6 Black Hers**
- **SEI Pharmaceuticals: MethylHex 4,2**
- **SNI LLC: Nitric Blast**
- **USP Labs, LLC: Oxy Elite Pro, Jack3D**

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“Energy” Drinks: What are they

- Basically fluid and energy in one bottle
- Contain high concentration of carbohydrate
- High concentration of caffeine and may be in the form of guarana, matte, Kola nut
- Add ginseng as it boost the stimulus effect
- May also contain derivatives of synephrine
- Not formulated for athletes
- May see liver and kidney dysfunction

USADA's Supplement 411

- http://www.usada.org/supplement411
- http://www.truesport.org/resources/publications
- Office of Dietary Supplements (NIH)
  - http://ods.od.nih.gov

Thank You

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