

## IMPORTANT CONCEPTS FOR DISTANCE RUNNERS

- from presentation by Jason Karp, ph.D.; 2011 IDEA Personal Trainer of the Year

- Concept #1
  - Number of miles (or time) spent running each week is the **most important part of endurance training**
- Concept #2
  - Before picking up the pace, have a solid base
  - Distance running is a volume-dependent sport, with physiological adaptations resulting from time spent running. The more runners attend to the qualities of aerobic metabolism (volume & base), **the more they'll ultimately get from subsequent interval training.**
  - Focusing on speedwork alone will never be as effective as **first focusing on base mileage**
- Concept #3
  - Predictors of injury: **All are preventable**
    - low caloric availability (eat healthy & eat enough)
    - female athlete triad (related to eating & under-fueling)
    - large increase in training load
    - imbalances (strength; hips)
    - inappropriate or old (300-350 miles) running shoes
- Concept #4
  - Recovery is just as important as training
  - Improvements in fitness occur during the *recovery* between workouts, not during the workouts themselves. **The faster and more complete the athlete's recovery, the more she will get out of her training and the faster she will race.**
  - Positive physiological adaptations to training occur when there is a correctly-timed alternation between stress (workouts) and recovery.
  - Nutrition
    - Refueling nutrient-depleted muscles is possibly the single most important aspect of optimal recovery **(0.5 grams of simple carbs/glucose per pound of body weight plus 20-30 grams total of protein within 30 minutes of workout)**
      - examples (~70g carbs with ~20-30g protein)
        - Food:
          - pita & hummus w/almonds (1 pita; 3 tbsp. hummus; ~20-25 almonds)
          - peanut butter toast (2 slices on whole wheat bread)
          - apples & greek yogurt (2 apples and 1 1/2 cups greek yogurt)
          - english muffin & almond butter (1 muffin; 2 tbsp. almond butter)
          - eggs & toast (2 eggs; 2 slices wheat toast)
          - sub sandwich (Subway turkey sub with no cheese)
          - oatmeal and fruit (NOT instant oatmeal, if possible)
        - Bars:
          - Clif BUILDER's Bar
          - Clif Mojo Bar
          - Luna Bar (Blueberry Bliss)
        - Drinks:
          - 16 oz. fat free chocolate milk
          - Endurox R4 (powdered drink mix)
          - Odwalla Protein Monster drink (Vanilla - 16 ounce bottle)
          - GU Recovery Brew (powdered drink mix)
          - Muscle Milk Light (Vanilla - 14 ounce bottle)
  - Hydration
    - Blood volume decreases & blood thickens if fluid is not replaced, leading to decreased stroke volume - - less oxygen & nutrients delivered to muscles for recovery.
  - Inflammation
    - ice baths & contrast (alternating hot/cold) baths
  - Sleep
    - 8-9 hours of sleep/night
    - **body regenerates HGH (critical for muscle repair) during deep sleep**
  - Active recovery
    - **active stretching** (stretchy drills) as part of post-run routine
  - **Limit other activity (time on feet) during the day**