

Neenah Nutrition Plan

- Speeding recovery from *hard* training runs
- Performance eating for *injury prevention*.





“The Recovery Plan”

Training Principle

“To sustain a high intensity training program, carbohydrate stores must be replaced completely between sessions.”

(Coyle, 1991)

Presentation is based off of Jane Foos presentation.



The Recovery Plan

Training Principle

- Main fuel for muscles (glycogen)
- 1-3 hour supply at moderate pace
- Fat supplies energy at low intensity training (<50%max V02)
- The higher the exercise intensity, the greater the demand for Carbs

Carbohydrates and Running



“You can train without adequate carbs; but you can’t race without them.”



Physiology of Re-Fueling After Running

- Competition for fuel (CHO) between the muscles, liver and brain.
- Inadequate CHO intake: some area of the body will be under-fueled.
 - Muscles - Poor athletic performance
 - Brain - Poor academic performance
- Time - 24 hours to complete re-fueling process
- Strategy: Recovery plan needs to refuel more completely and quickly



“The Recovery Plan”

Why does it work?

- Takes 24 hours to re-fuel muscles
- May have to train/compete <24 hours
- “Recovery Plan” speeds refueling.
- Thirty minute window of opportunity



Thirty Minute “Window”

- Insulin suppressed during exercise.
- After exercise Insulin levels elevated and muscle receptors open for 30 minute “window.”
- Window shuts 45-60 minutes after exercise
- Hit window: Speed Refuel 12-16 hours.
- Miss window: Refuel 24 hours



“The Recovery Plan”

What is it?

- Within 30 minutes after exercise:
 - Eat 50 - 100 grams of carbohydrates
 - 10-25 grams of protein
 - 24-32 oz fluids
- Repeat in 2 1/2 hours by eating a meal.



“The Recovery Plan”

Who needs it?

- Stale racing performance especially at the end of the season.
- Run out of energy at the end of a race.
- Complaints of “heavy legs”
- Long runs Ok; problems with speed work.
- Chronic colds, frequently sick
- Declining academics (falling asleep in AM classes, problems concentrating
- Late night hunger.



“The Recovery Plan” When is it Needed?

- First few weeks of training most important.
- Two a day runs
- 11:00 a.m. Saturday race/8 am Sunday long run.
- State meet (track) 3200m followed by 1600m next day.



Benefit of *protein* as part of the recovery plan.

- Hard exercise breaks down muscle tissue.
- Long slow runs use amino acids (muscle) for calories if muscle glycogen depleted
- 30 Minute Window: Insulin promotes protein use for muscle rebuilding



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Benefit of *protein* as part of the recovery plan.

- Improved muscle repair
- Improved immune system
- Fewer nagging overuse injuries and colds.



“Protocol”

- After a hard workout or race cool-down.
 - 8 Miles
 - 60 minute run or longer
- Set Watch for thirty minutes (Seniors)
- Eat/Drink
- Repeat/ 2 hours with meal.



Recovery Food

What should you eat?

- 50 grams of carb ./10 grams of Pro.
 - Power Bar
 - Nature Grain Bar
 - Large Bagel/Peanut Butter
 - 6" Sub sandwich
 - 1 can of Slim-Fast, Sport Shake, Boost, Carnation Inst. Breakfast.
 - Fluids= 24-32 oz Gatorade (50 grams of carbs/no protein.



Adapting Recovery Protocol High School Runners

- Challenges:
 - Limited access to food/fluids
 - Athlete's motivation
 - Level of competition
 - Finances
 - Parental Support



Adapting Recovery Protocol High School Runners

- Seniors and varsity runners lead the way.
- Bring water bottles to practice.
 - Pwd. Sport Drink Mix.
 - Eat food within thirty minutes after your workout.



Recovery Plan Summary

- Eat 50-100 gms carbohydrates
- Eat 10-25 gms of protein.
- Eat in locker room after practice while you stretch out.
- Eat ASAP after a race cool-down.



Recovery Plan Summary

- The recovery plan will not guarantee a PR or race victory.
- The recovery plan will help runners recover from intense training.
- Intense training will determine racing success.



Injury Prevention

Stress Fractures

- Nine Injured Wisconsin Runners/16 Stress Fractures:
 - 2 - missed part of Fr. & So. Year.
 - 1 - had six breaks in their leg
 - 1 - had three separate injuries
 - 1 - missed all senior post season Hs track.
 - 1- femur fracture at WIAC conf. meet.



Injury Prevention

Stress Fractures

- Risk Factors:
 - Weight < 127 pounds
 - Menstrual cycle (12/year)
 - Diet low in calories, protein, calcium, vitamin C and D, zinc.
 - Like Milk- didn't drink enough.
 - "Vegetarian" Diet
 - Avoids red meat
 - Skipped meal especially breakfast
 - No recovery protocol



Traditional Runner's Diet
Carbohydrate: Main Energy Source



Traditional Runner's Diet

Carbohydrate: Main Energy Source

- Breads, Buns, Bagels
- Pasta, Rice, Noodles
- Potatoes, Corn, Peas
- All Fruit
- Soups
- Ramen noodles
- Cereal, Pop-Tarts, Granola Bars
- Chili Beans, Bkd Beans
- Pretzels, Popcorn, Animal Crackers.
- Juice, Milk
- Yogurt, Pudding, Jell-O



Traditional Runner's Diet

Carbohydrate: Main Energy Source

- Hot Chocolate
- Slim-Fast, Sport Shake
- Sports Bars, Gels
- Thick Crust Pizza, Spaghettios.



Training Diet

Carbohydrates: Not a Magic Bullet

- Protein:
 - Repair muscle tissue
 - Framework for calcium
- Fat
 - Prevents hunger
 - Runners efficient fat burners
 - Don't need much.
- Protein Foods:
 - Lean Beef, Pork, Ham, Chicken, Turkey
 - Veggie Burger, Soy, Tofu.
 - Cheese, String Cheese, Cottage Cheese, Eggs
 - Peanut Butter
 - Pork/Beans, Kidney Beans, Chili Beans, Split Peas



“Pace” Red Meat Intake
(Protein, Zinc, Iron)

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(Protein, Zinc, Iron)

- Red Meat 3x's week:
 - Red meat on hard training days.
 - 1 LB lean hamburger/ week
 - Red Meat Substitutes: Veggie Burger Boca, Garden
 - Pork/ Beans 3 small cans a weekly.
 - Serving Size: “Computer mouse.”



Calcium

*Get it Anyway you Can
But Get It.*



- Need 1500 mg/day
- Drink 4-5 8 Oz
- Glasses milk, yogurt, Oj/Calcium daily
- Supplement:
 - 500mg CA/pill or chew
 - Vitamin D
 - Must add protein to diet if miss dairy foods.

Timing of Food

Eat Early; Eat Often

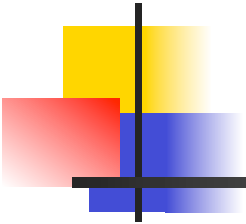
- Eat 5-6 times a day major challenge for school athletes.
 - Save muscle glycogen for running.
 - Prevents muscle breakdowns for calories
 - Manages hunger
 - Prevents weight gain



Follow Recovery Protocol



- Complete refueling prevents over-training syndrome
- times:
 - Muscle glycogen stores
 - Spares protein
- Protein
 - Speeds muscle repair
 - Muscle cushions bone from football.



*Performance Eating: Female
Distance Runners - 120-140 lbs.
Provides approx. 2,300-2,900 calories.
High carb, moderate protein, low fat.
Runners who weigh more/less or run
very high mileage should adjust portion
sizes accordingly.*



Female Distance Runner - 120 -140

- Breakfast:
 - 1 cup Orange Juice/Calcium
 - 1-2 cups whole wheat cereal
 - 1 cup 1% milk
- Snack:
 - 1/2 Bagel or carton yogurt
 - 16 oz Water



Female Distance Runner - 120 -140

- Lunch:
 - 6-12" Sub
 - Baby Carrots or Salad
 - 1 cup milk or OJ/Calcium
- Pre-Practice: 16oz Sport Drink or Cereal Bar/water
- Post Practice: 1 Sport Bar 32oz Water



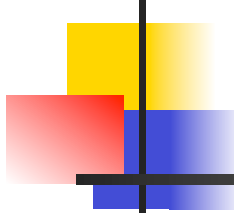
Female Distance Runner - 120 -140

- Supper:
 - 1/3 box hamburger helper
 - 1 cup Vegetables or Salad
 - 1 SL Toast/Margarine
 - 1 cup Milk or O3/Calcium



Female Distance Runner - 120 -140

- Night Snack (Choose One)
 - 14-21 Animal Crackers, 1 cup milk
 - 5-10 Saltines, 2 oz cheese, 16 oz sport drink.
 - PB/J Sandwich, 8oz OJ/Calcium
 - 1 cup Frozen Yogurt, 1 cup juice
 - 6-9 cups Micro Popcorn, 1 cup juice.



*Performance Eating: Male
Distance Runners 130-160 lbs.
Provide approx. 3000-3300
calories, high carb, moderate
protein, low fat. Runners who
weigh more/less or very high
mileage should adjust portion
sizes accordingly.*



Performance Eating: Male Distance Runners 130-160 lbs.

- Breakfast
 - 1 cup Orange Juice/Calcium
 - 2 cups whole wheat cereal
 - 1 cup 1% milk
- Snack
 - 2 oz Bagel
 - 16 oz Sport Drink



Performance Eating: Male Distance Runners 130-160 lbs.

- Lunch
 - 6" Sub
 - 1 Bag Pretzels
 - 1 cup milk or OJ/Calcium
- Pre-Practice
 - 16 oz Sport Drink
 - Cereal Bar/water
- Post Practice
 - Sport Bar
 - 24-32 oz Sport Drink



Performance Eating: Male Distance Runners 130-160 lbs.

- Supper:
 - 1/2 box hamburger helper or 1/2 pizza.
 - 1 cup vegetables or salad
 - 1-2 SL Toast/Margarine
 - 1 cup milk or 03/Calcium



Performance Eating: Male Distance Runners 130-160 lbs.

- Night Snack (Choose one of the following)
 - Rest of Hamburger Helper, 24 oz water
 - 10 saltines, 2-3 oz cheese, 2 cups sport drink
 - 1/2-2 cups cereal, 1 cup milk or OJ/
Calcium.
 - 1/2 Frozen Pizza, 1-2 cups juice.

Note: 12 cups fluids (Adjust fluid intake based on urine color.)



*Breakfast
Always a Challenge*



Breakfast

Always a Challenge

■ Traditional

- Dry Cereal, Milk, Toast
- English muffin, Jelly, Yogurt, Banana
- 3-4 SL Peanut Butter Toast.
- 3-4 Toaster waffles
- Large Bagel, PB, jelly
- Instant Oatmeal, Toast, Milk

■ Non-Traditional

- Sport bar, Banana, yogurt.
- 1 pkg. Pop tart, string cheese
- Sport shake, or Slim-fast and graham crackers.
- Leftovers
 - Hot dish
 - Spaghetti
 - Pizza

New Trends in Treating Stress Fracture Injury

- Sports Nutrition Consultant
- Bone Density Scan
- Address hormone status





Implementation

- Discuss Team Fuel Goals
- Team table at school?
- Pre-post workout fuel
- Organize Pre-race Meals
- Ask what did you eat; not did you eat.



Implementation

- Parents
 - Lunch Money
 - Food in house
 - Organized supper
- Athlete:
 - Responsible for what they put in their mouth.
 - Set Priorities.

Summary

Prevention: Stress Fractures

- Eat enough calories to prevent in-season weight loss.
- Eat from all food groups, not just carbohydrates.
- Eat red meat/veggie burger 3x's/ week.
(Hard Training Days)



Summary

Prevention: Stress Fractures



- Get 4-8 oz servings of milk, OJ/calcium or yogurt daily.
- Take CA/Vitamin D supplement at every meal that doesn't have dairy.
- Eat 6xs/day
- Follow Protocol after runs.



Conclusion

- Victim mentality
- What if.
- Make every day count.