

# Immune System Protocols

## Boise High Cross Country

### Sleep

- 7 to 9 hours of sleep per night
- **Most important** - go to bed at the same time every night
- Try to get up at the same time each morning to establish your daily rhythm

#### Methods for achieving optimal sleep

- Ear plugs
- Do not disturb sign on bedroom door
- Cooperation with roommates/family
- Natural sleeping aids e.g. complex carbohydrates, triptophan – apples, bananas, milk and turkey all contain high amounts of triptophan
- Sleep rituals e.g.; music, meditation, relaxation techniques
- Avoid drinking within 20 minutes of going to bed
- Avoid talking on the phone 20 minutes before bed

### Nutrition

- Right types of food
  - Red meat
  - Complex carbohydrates
  - Fruits and vegetables
  - Whole grains and cereals
  - Variety
- Right amount of food
- Right timing of meals to match needs
  - 4 to 6 meals a day
  - prior proper planning e.g.; shopping list, containers, food preparation
  - breakfast, mid-morning, lunch, carbohydrate replacement, dinner, bedtime snack
  - Snack on Power Bars, Cliff Bars, Harvest Bars, nuts etc. use variety

### Hydration

- Water Bottles – DON'T SHARE! Carry everywhere
- Right amount – 1 liter for every lb. lost during workout/competition
- Electrolyte Replacement - water is not enough! Replacement drinks are needed post workout
- Right time - must consumed within 20 minutes of stress run and followed by 8 more ounces within 2 hours
- Right amount – water first then 8 ounces of 6% glucose solution (Gatorade, etc.), then more water

### Prevention/Correction of Vitamin or Iron Deficiencies

- Prevention of vitamin or iron deficiency is best achieved through adequate dietary intake
- Correction of an iron or vitamin deficiency is best achieved with diet modification and supplementation

### Iron Supplementation

- Only indicated when the Serum Ferritin levels are less than 12 nanograms per milliliter
- Liquid iron - Ferrous Sulfate (Ferosol Elixir/Gold Line)
- Graduated dosage;
  - 1st week – 1 tsp. with 8 oz. OJ + 500 mg Vitamin C (breakfast & dinner)
  - 2nd week - 1 tbs. As before (breakfast)/ 1 tsp. As before (dinner)
  - 3rd week – 1 tbs. As before (breakfast)/ 1 tbs. As before (dinner)
  - 4th week – 1 tbs. As before (breakfast/lunch/dinner)
  - 30 minutes prior or 90 minutes after meals
- Dosage (depends on serum ferritin levels)
  - Females below 20 & Males below 30 (continue 4th week and retest)
  - Females below 30 & Males below 40 (continue 3rd week and retest 4th week)
  - Females below 40 & Males below 50 (continue 1st week and retest 4th week)

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### Vitamin Supplementation

- Only indicated if there is a obvious deficiency
  - Multi-vitamin (gel-cap)
  - Vitamin C
  - B12
  - B6
  - B-Complex
  - Potassium
  - Herbal complex

### Calcium

- Athletes are twice as likely to be calcium deficient as sedentary people
- High protein intake can result in calcium loss
- Calcium sources: Low fat dairy products, dark green leafy vegetable, salmon, navy beans, oats & almonds

### Potassium

- Runners lose great amounts of potassium through sweating
- Potassium sources: melons, bananas, sport drinks, pineapples, salmon, whole wheat flour

### Zinc Lozenges

- Immediately upon noticing a raspy throat or upon noticing symptoms of URTI
- Every 2 hours until symptoms are absent
- Low dose (15 mg.)

### Travel and competition

- Air and Bus Travel
- Upon boarding
- Every 2 hours during trip
- Upon arrival
- Competition; take a lozenge within 25 minutes of last event
- Every two hours following until bedtime

### Post Competition Protocol (includes hard practice days)

- Follow competitions or hard workouts with 8 – 10 minute cool down
- 16 ounces of water from your water bottle not the fountain.
- 4–5 minutes of general leg stretching
- Elevate legs 6 – 10 minutes
- 12 – 16 ounces of glucose polymer/electrolyte drink
- Take zinc lozenge
- Massage stick then 10 minutes of ice therapy
- Eat proper meal within 2-4 hours
- Continue zinc lozenges every 2 hours
- Drink 24 ounces of additional fluid
- Sleep 8 –9 hours, in bed normal time

Examples of healthy foods containing complex carbohydrates:

Spinach, Whole Barley, Grapefruit, Turnip Greens, Buckwheat, Apples, Lettuce, Buckwheat Bread, Prunes, Water Cress, Oat Bran Bread, Dried Apricots, Zucchini, Oatmeal, Pears, Asparagus, Oat Bran Cereal, Plums, Artichokes, Museli, Strawberries, Okra, Wild Rice, Oranges, Cabbage, Brown Rice, Yams, Celery, Multi-Grain Bread, Carrots, Cucumbers, Pinto Beans, Potatoes, Dill Pickles, Low Fat Yogurt, Soybeans, Radishes, Skim Milk, Lentils, Broccoli, Navy Beans, Garbanzo Beans, Brussels Sprouts, Cauliflower, Kidney Beans, Eggplant, Soy Milk, Lentils, Onions, Whole Meal Spelt Bread, Split Peas, Tomatoes