



Sports Nutrition

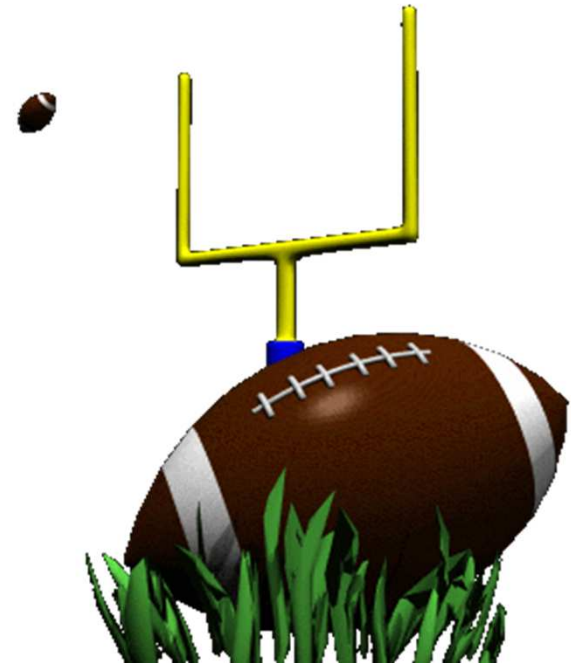
Lee Hyrkas, RD, CD, NASM-CPT

**Registered Dietitian
Performance Nutrition Specialist**

***belin*health**
Sports Medicine

Today's Agenda

- **Building a Sports Diet**
- **Game Time Nutrition**
- **Importance of Hydration**



Quality Fuel



VS.



The quality of food, influences our performance & health.

Fueling Guidelines

Football players require **~20-24 calories per pound.**

- 100 pound athlete: **2000 – 2400 calories/day**
- 130 pound athlete: **2600 – 3120 calories/day**
- 160 pound athlete: **3200 – 3840 calories/day**
- 190 pound athlete: **3800 – 4560 calories/day**
- 200 pound athlete: **4000 – 4800 calories/day**



Impact of Inadequate Fueling

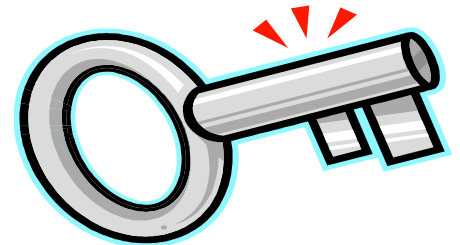
Keys signs:

- Chronic fatigue
- Anemia (low iron)
- Respiratory infections
- General illness
- Irregular menstrual cycle
- Stress fractures
- Strength & muscle loss
- Depression
- Weight loss
- Prolonged muscle soreness
- Increased body fat
- Frequent injuries
- Decreased speed and endurance



Building a Sports Diet

- ✓ **Consuming a breakfast meal daily.**
- ✓ **Frequent meals & snacks (~2-4 hours).**
- ✓ **Proper nutrition before and after exercise.**
- ✓ **Creating a performance plate at meals.**
 - $\frac{1}{4}$ plate lean protein or dairy
 - $\frac{1}{4}$ plate fruit and vegetables
 - $\frac{1}{2}$ plate quality carbohydrates (whole grains)



Breakfast Meals on the Run

Meal 1:

- Whole grain granola bar
- Piece of fruit (apple, orange, etc.)
- 8 oz Glass of milk



Meal 2:

- Container of Greek yogurt
- Fruit cup
- 1/4 cup granola



Meal 3 (liquid meal):

- Homemade Smoothie: 2 cups low-fat milk, 1 cup berries, 1/2 cup dry oatmeal

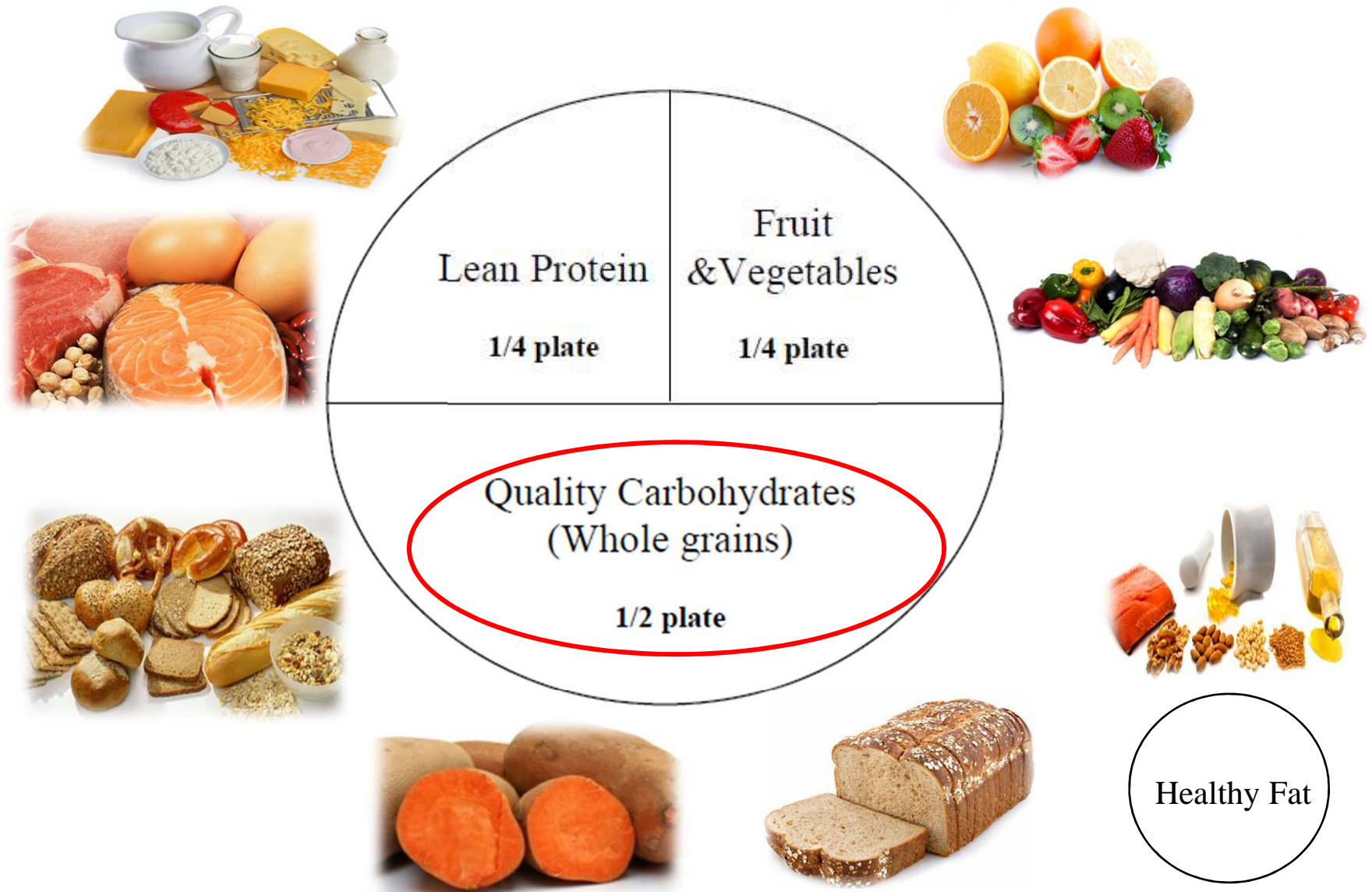
Meal 4:

- Peanut butter and jelly sandwich on whole grain bread
- Glass of milk, piece of fruit

Meal Planning Easy as 1, 2, 3



Building a Performance Plate



Quality Carbohydrates

Choose most often



Simple & Refined Carbohydrates

Choose less often



Quality Protein

Choose lean protein sources. (15-30 grams per meal)

- Loin, tenderloin, round cuts meat
- Lean ground meat (90/10, 95/5)
- Trim excess fat & remove skin
- Low-fat dairy (milk, yogurt, cheese)
- Eggs or egg whites
- Nuts or peanut butter
- Beans (kidney, black beans, lentils)



Limit fatty types of meat.

- Pepperoni, sausage, bacon, greasy meats
- High in saturated fat (☹️ **heart health**)

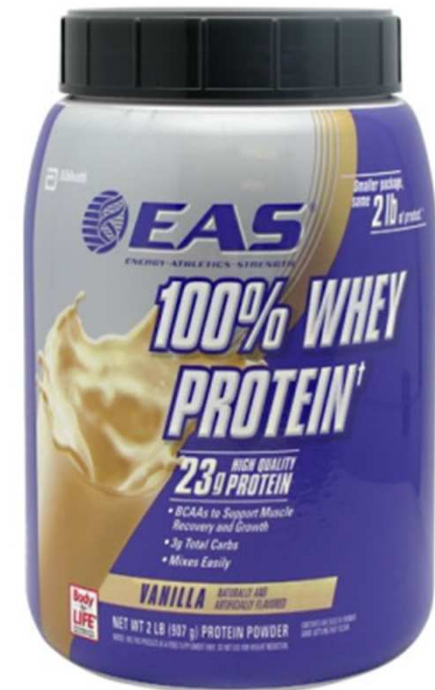


Do I Need Protein Supplements?

Protein Content of Foods

- ✓ 6 oz chicken or beef (45 grams)
- ✓ 2 large eggs (14 grams)
- ✓ 16 oz milk (16 grams)
- ✓ 1 string cheese (7 grams)
- ✓ 1 Greek yogurt (12 grams)
- ✓ 2 Tbsp. peanut butter (8 grams)

Total: ~100 grams of protein



Supplement Resources

U.S. Pharmacopeial Convention

- www.usp.org



Informed-Sport

- www.informed-sport.com



NSF Certified for Sport

- www.nsf-sport.com



Heart Healthy Fats

Nuts & Seeds

- Almonds, walnuts, pistachios
- Peanut butter, almond butter
- Flax, chia, sunflower seeds



Oils

- Extra virgin olive oil, peanut oil, canola oil, flax seed



Others

- Avocado, fish, olives, light salad dressings, butter made with olive oil, soft tub margarines

Building Quality Breakfast Meals

Sample 1:

- 2 eggs or 4 egg whites
- 1 cup berries
- 1 cup oatmeal (steel cut)
- 1 cup low-fat milk

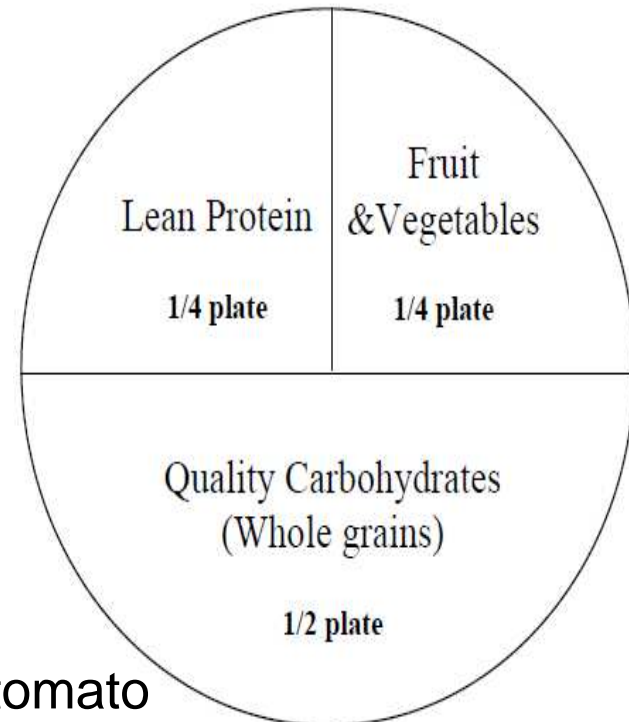
Sample 2:

- Container of Greek yogurt (5.3 oz.)
- 1/2 cup low-fat granola
- 1 cup canned peaches
- 1/4 cup almonds

Sample 3:

- 2 egg omelet with spinach, cheese & tomato
- 2 slices Canadian bacon
- 2 slices whole grain toast with jam
- 1 cup fruit cocktail

Performance Plate



Healthcare Partner of



The Green Bay Packers

bellinhealth

Building Quality Lunch Meals

Sample 1:

- Whole wheat turkey wrap:
 - 3-4 slices low-sodium deli turkey
 - 1 slice Swiss cheese
 - Lettuce, tomato, pickles
- 1 large banana
- 8 oz. low-fat milk

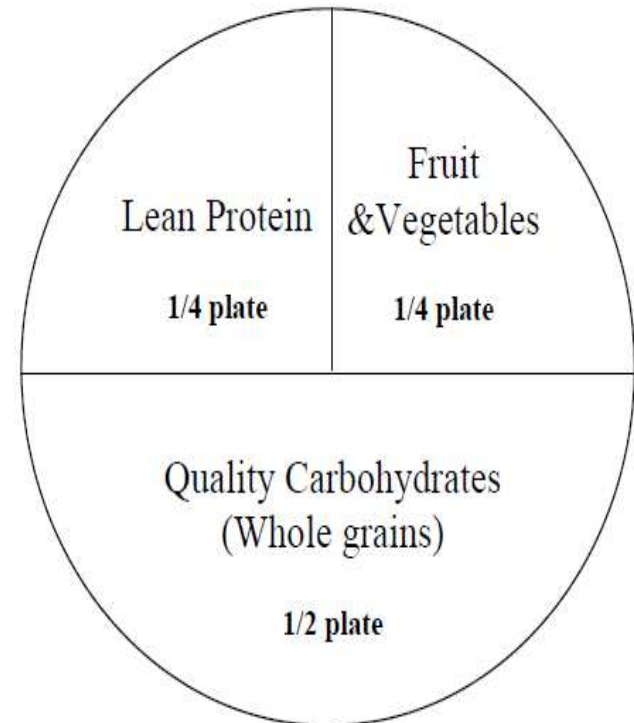
Performance Plate

Sample 2:

- 1 medium bowl of chili
- 1 whole grain roll
- 1 cup grapes
- 1 cup carrot sticks with light dip
- 8 oz. low-fat milk or soy milk

Sample 3:

- 6" chicken breast sub with extra veggies
- 1 package apple slices
- 1 oz. bag pretzel twists



Healthcare Partner of



The Green Bay Packers

bellinhealth

Building Quality Dinner Meals

Sample 1:

- 4-6 oz. grilled salmon fillet
- 1 cup cooked quinoa or wild rice
- 1 tsp. butter or oil
- 1 cup stir fry vegetables
- 8 oz. low-fat milk

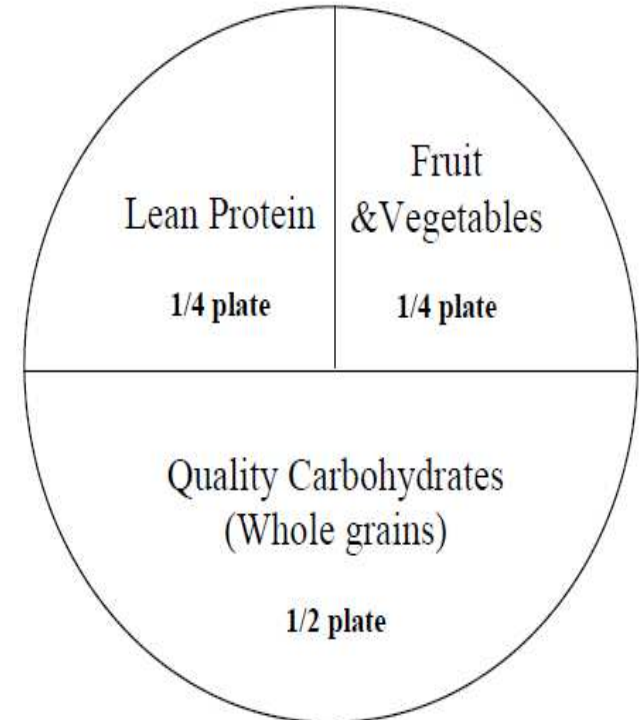
Sample 2:

- 2 cups whole wheat pasta with red sauce
- 3-4 oz. grilled chicken breast
- 1 garlic bread stick
- 1 cup cooked mixed vegetables
- 8 oz. low-fat milk

Sample 3:

- Grilled chicken sandwich on a whole grain bun with lettuce, tomato and light mayo
- 1 cup apple slices
- 1 medium baked potato with 2 Tbsp. light sour cream

Performance Plate



Performance Snacking

Sources of Quality Carbs

- Vegetables (carrots, peppers, etc.)
- Fruit (apples, banana orange, etc.)
- Dry cereals (oat squares, etc.)
- Whole grain granola bars
- Granola bars
- Dried fruit
- Rice cakes, whole grain
- Goldfish® crackers
- Graham crackers
- Whole grain crackers
- Pretzels
- Popcorn
- Fig bars



Sources of Lean Protein

- Peanut butter
- Trail mix (dried fruit, nuts & seeds)
- Greek yogurt
- Hard boiled eggs
- Yogurt
- Cottage cheese, low-fat
- String cheese
- Lean jerky (<3 g fat/serving)
- Meal bars (Kind®, etc.)
- Hummus



Game Time Nutrition



Pre & Post-Game Nutrition

Proper nutrition before & after games is key.

- Fuel for competition
- Reduce recovery time (less soreness)
- Maximize performance



“You can’t out train a poor diet.”

Foods to **Avoid** Pre-Game

Fried foods

- Fries, chicken strips, chips, etc.

High fat meats

- Burgers, hot dogs, beef sticks

Sweets/desserts

- Candy, ice cream, cookies, etc.

Dressing/dips

- Ranch, mayonnaise, vinegar and oil



What should I Eat Pre-Game?



Healthcare Partner of



The Green Bay Packers

Photo courtesy of fluentstream.com

bellinhealth

Pre-Game Guidelines

- High carbohydrate
- Low fat
- Moderate protein
- Extra fluids
- Appropriate portions



Have to train our stomach!

The Importance of Carbs

Body can store carbohydrates as glycogen.

- Energy during competition

Too little carbohydrates consumed = low glycogen

- **Decreased performance**



Pre-Game Carbohydrates

1-4 hours prior to exercise/competition

- **100-400 grams**
- Smaller amounts closer to exercise

General Recommendation:

- At least **30-60 grams** - 1- 2 hours prior

Popular Carbohydrate Choices:

- 2 slices whole grain bread (30 grams)
- Mini bagel (25 grams)
- 6 oz. container yogurt, fruit flavored (25 grams)
- Large piece of fruit (30 grams)
- Granola bar (20 grams)
- 16 oz. sports beverage (30 grams)
- 1 cup rice or pasta (45 grams)
- 12” sub sandwich (90 grams)



Carbohydrates & Food Labels

Carbs →



Pre-Game Protein

Aim for **10-20 grams**

- Lean sources **<5 grams fat** (digests quickly)

May help reduce recovery time

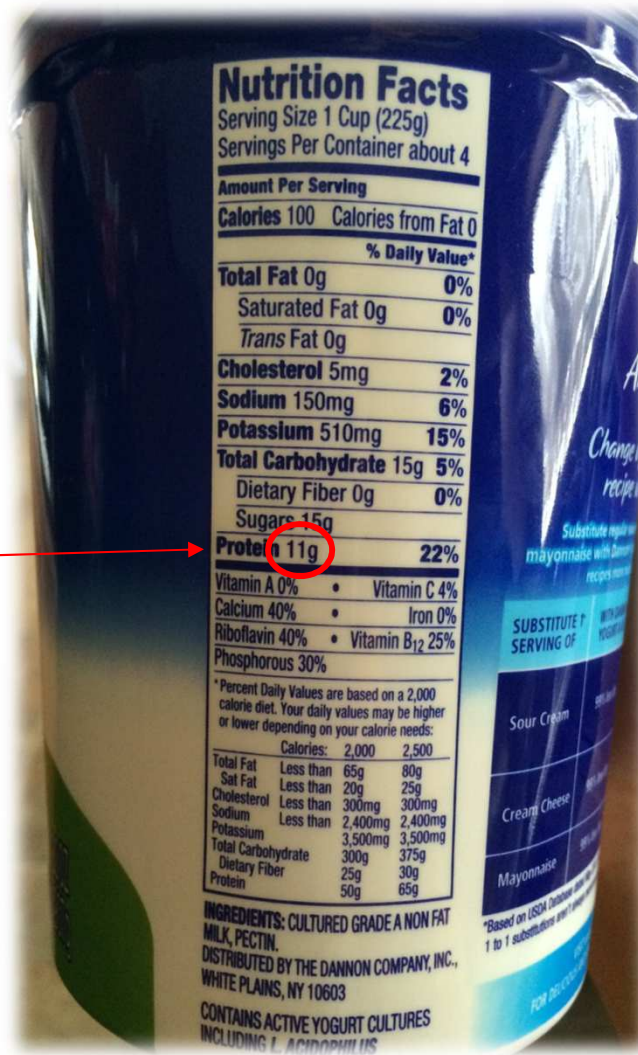
Popular Protein Choices:

- 2 eggs (12 grams)
- 1/2 cup egg whites (14 grams)
- 5.3 oz. container Greek yogurt (14 grams)
- 1 cup Kefir yogurt (11 grams)
- 16 oz. milk (16 grams)
- 1 string cheese (7 grams)
- 2 Tbsp. peanut butter (8 grams)
- 3 oz. meat, chicken or fish (20 grams)



Protein & Food Labels

Protein →



Sample Pre-Game Snacks

Meal 1: (45 grams carbs, 10 grams protein)

- 3/4 cup Goldfish® crackers or 15-20 pretzel twists
- 1 oz. (~2-3 pieces) lean beef jerky or 1 stick
- 1 cup grapes



Meal 2: (88 grams carbs, 17 grams protein)

- 1.5 cups oatmeal square cereal
- 1 string cheese
- 1 orange or 2 tangerines

Meal 3: (80 grams carbs, 20 grams protein)

- 1 container (5.3 oz.) Greek yogurt, fruit flavored
- 1/4 cup low-fat granola
- 1 banana



Sample Pre-Game Meals

Meal 1: (50 grams carbs, 24 grams protein)

- 2 whole grain waffles
- 2 scrambled eggs
- 1 slice reduced-fat cheese
- 1 cup diced melon (watermelon, cantaloupe, etc.)



Meal 2: (85 grams carbs, 22 grams protein)

- Peanut butter and banana sandwich
 - 2 slices whole grain bread
 - 1 banana sliced
 - 2 Tbsp. peanut butter
- 1 carton of low-fat milk

Meal 3: (90 grams carbs, 35 grams protein)

- 6" chicken breast sub (hold mayo and oil)
- 1 package apple slices
- 1 oz. bag pretzel twists
- 1 carton low-fat milk



Post-Game Nutrition



Goals of Post-Game Nutrition

Focus on the 4 r's:

Rehydrate

- Fluids & Electrolytes



Replenish

- Carbohydrate (glycogen) stores



Repair

- Muscle tissue



Reinforce

- Immune system with nutritious foods (fruits, vegetables, lean meats, whole grains, nuts, etc.)



Post-Exercise

Consume a meal within **0 - 2 hours**

- “Window of Opportunity” =  Nutrient Absorption

Reduce recovery time and soreness



Healthcare Partner of



Source: American College of Sports Medicine, Academy of Nutrition and Dietetics and Dietitian of Canada Joint Position Statement. Nutrition and Athletic Performance. Medicine & Science in Sports & Exercise 2016; 48(3): 337-579

belinhealth

Post-Game Meal

Aim for **15-30 grams of lean protein.**

- 16 oz. milk (16 grams)
- 4 oz. meat or fish (24 grams)
- 2 eggs or ½ cup egg whites(14 grams)
- Container Greek yogurt (14 grams)



Include **45-100 grams of quality carbs.**

- Large whole grain bagel (60 grams)
- Large banana (30 grams)
- 1 cup rice or pasta (45 grams)
- 16-20 oz. chocolate milk (50 grams)



Lee's Simple Recovery Mix

Foods Needed:

- 1 string cheese
- 1/4 cup nuts (almonds, peanuts, etc.)
- 1 oz. lean jerky (venison, beef, bison, etc.)
- 1/4 dried fruit (raisins, cherries, etc.)

Place foods into a sandwich baggie.



Nutrition: ~45 grams carbs, 27 grams protein

Sample Recovery Snacks

Meal 1: (75 grams carbs, 27 grams protein)

- 2 oz. sliced turkey or chicken
- 2 slice whole wheat bread
- 1 large pear
- 1 carton low-fat milk



Meal 2: (60 grams carbs, 22 grams protein)

- 1/2 cup low-fat cottage cheese
- 1/2 cup low-fat granola or 2 granola bars
- 1 cup melon



Meal 3: (90 grams carbs, 20 grams protein)

- 16-20 oz. low-fat chocolate milk
- 1 large banana

Sample Recovery Meals

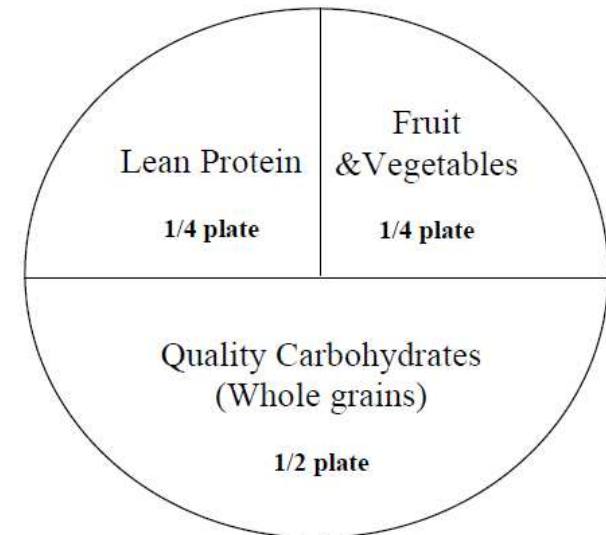
Meal 1: (130 grams carbs, 47 grams protein)

- 2 cups whole wheat pasta w/ sauce
- 1 garlic bread stick
- 3-4 oz. grilled chicken breast
- 1 cup cooked mixed vegetables (carrots, broccoli, cauliflower, etc.)
- 8 oz. low-fat milk



Meal 2: (75 grams carbs, 45 grams protein)

- 4 oz. grilled salmon fillet
- 1.5 cups cooked quinoa or wild rice
- 1 tsp. butter or oil
- 1 cup stir fry vegetables
- 8 oz. low-fat milk



Travel/Tournament Fueling Ideas

Non-refrigerated Foods



- ✓ Fruit cups
- ✓ Bananas, grapes or orange slices
- ✓ Goldfish® crackers
- ✓ Beef jerky (<3 g fat/serving)
- ✓ Carrot sticks with dip
- ✓ Single-serving peanut butter cups
- ✓ Small bag of pretzel twists
- ✓ Small bag dried fruit & nut trail mix
- ✓ Small bag nuts (almonds, etc.)
- ✓ Whole grain granola bars
- ✓ Mini bagels
- ✓ Tuna pouches or cans
- ✓ Dry cereals (oatmeal squares, etc.)



Cold Pack Foods

- ✓ Turkey sandwich on whole grain bread
- ✓ String cheese
- ✓ Cottage cheese
- ✓ Greek yogurt
- ✓ Kefir (drinkable yogurt)
- ✓ White milk or chocolate milk
- ✓ Deli turkey or chicken
- ✓ Pickles (replenishes salt)
- ✓ 100% fruit juice
- ✓ Sports drink (during competition)



Restaurant Fueling



Foods

Entree's:

- ✓ Grilled chicken sandwich
- ✓ Single patty burgers
- ✓ Burrito with grilled chicken or steak
- ✓ Soft or hard taco with chicken or steak
- ✓ Club sandwich on whole grain bread
- ✓ Sub sandwich (turkey, chicken,)
- ✓ Grilled chicken wraps
- ✓ Grilled fish, chicken or steak
- ✓ Pizza topped with extra vegetables
- ✓ Chili
- ✓ Chicken or steak salad
- ✓ Vegetable or bean soups



Sides:

- ✓ Fruit (apple slices, etc.)
- ✓ Steamed or raw vegetables
- ✓ Salads
- ✓ Baked potato
- ✓ Sweet potato
- ✓ Wild or brown rice
- ✓ Whole wheat pasta
- ✓ Beans & rice
- ✓ Cottage cheese
- ✓ Baked chips
- ✓ Rolls



Hydration Tips

Daily:

- 80-96 ounces (10-12 cups)



1-2 hours pre-exercise:

- 16 - 24 ounces (2-3 cups)



During exercise:

- ~16-20 ounces per hour (2-2.5 cups)
- **Athletes should listen to their thirst!**

Sports Drinks Vs. Milk

Sports Beverage (16 oz.)

- Calories = 107
- Sodium = 213 mg
- Potassium = 60 mg
- Carbohydrates = 28 grams
- Protein = 0 grams



Cost: **\$1.50**

Chocolate Milk (16 oz.)

- Calories = 310
- Sodium = 325 mg
- Potassium = 860 mg
- Carbohydrates = 50 grams
- Protein = 17 grams



Cost: **\$0.43**

Milk Wins!

Looking for Help?

- ✓ **Estimating fueling needs**
- ✓ **Individualized fueling plans**
 - Increasing lean body mass
 - Decreasing body fat
- ✓ **Hydration strategies**
- ✓ **Pre & post exercise meals**
- ✓ **Supplement guidance**
- ✓ **Travel nutrition**



Sample Meal Plans



Breakfast:

- *2 eggs
- *1 whole grain English muffin
- *1 Tbsp. PB
- *1 medium apple
- *1 container yogurt

30 g protein

Lunch:

- *6" turkey sub
- *1/4 cup trail mix
- *1 large orange
- *1 carton milk

33 g protein

Snack:

- *Whole grain granola bar
- *1 string cheese

11 g protein

Supper:

- *3 oz. grilled chicken or beef
- *3-4 red potatoes
- *1-2 cups mixed veggies
- *8-10 oz. milk

33 g protein

Bedtime Snack:

- *5.3 oz. Greek yogurt
- *15-20 almonds
- *1/4 cup granola
- *1 fruit cocktail cup

24 g protein

Healthcare Partner of



The Green Bay Packers

bellinhealth

Sports Nutrition Appointments

Schedule One on One Consultations

Call: (920) 430-4728

Email: lee.hyrkas@bellin.org



Healthcare Partner of



The Green Bay Packers

bellinhealth



Healthcare Partner of



The Green Bay Packers

Photo courtesy of fluentstream.com

bellinhealth

References

- Alcohol and Athletes. (2008, January 1). Retrieved November 3, 2014, from <http://oade.nd.edu/educate-yourself-alcohol/alcohol-and-athletes/>
- Benardot, D. (2011). *Advanced Sports Nutrition* 2nd ed. Champaign, IL: Human Kinetics.
- Clark, N. (2014). *Sports Nutrition Guidebook* 5th ed. Champaign, IL: Human Kinetics.
- Mueller, K., & Hingst, J. (2013). *The athlete's guide to sports supplements*. Champaign: Human Kinetics.
- Rosenbloom, C., Coleman, E. (2012). *Sports Nutrition. A Practice Manual for Professionals* 5th ed. Diana Faulhaber.