

Nutrition For Rowers

Fueling Workouts & Races

Lauren Trocchio, RD, CSSD, CSOWM, LD

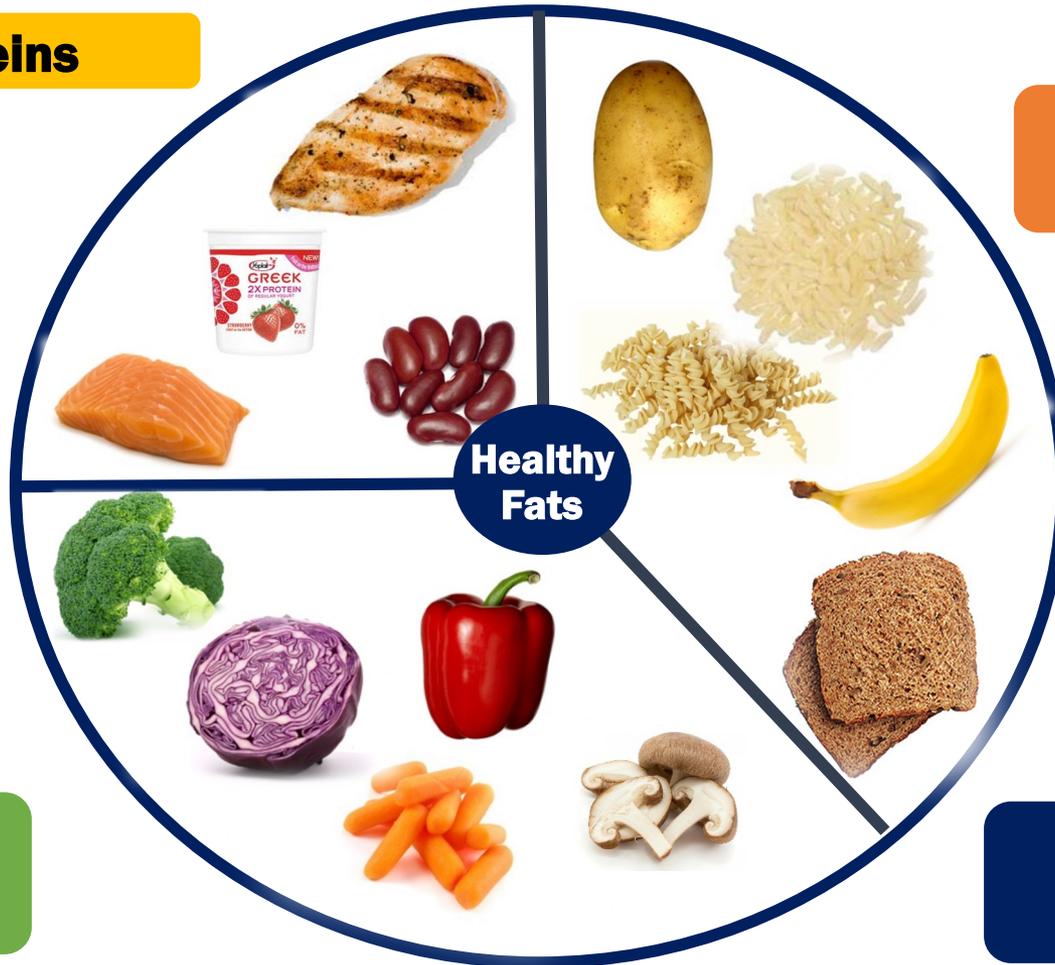


Where we're headed...

- **The athlete's plate**
 - **Basic, daily fueling**
- **Fueling timing**
 - **Let's play "Fuel Your Day"**
- **Hydration**

The Athlete's Plate

Lean Proteins



**Quality
Carbohydrates**

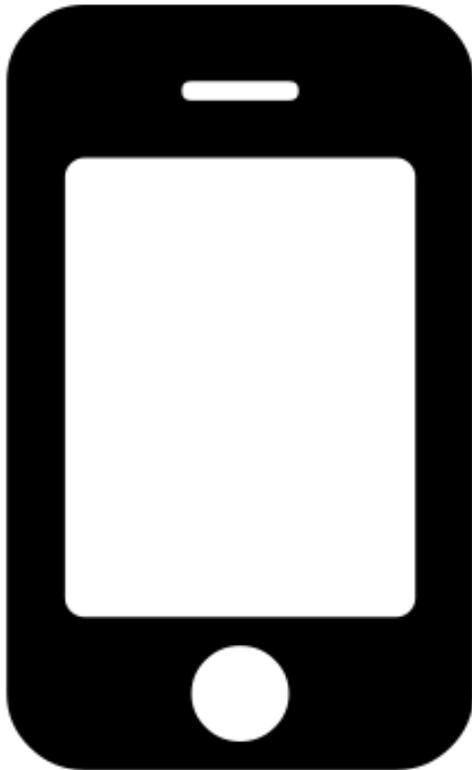
**Non-starchy
Vegetables**

**Healthy
Fats**

Quality Carbohydrates

Why do we need 'em?

Consider your phone...

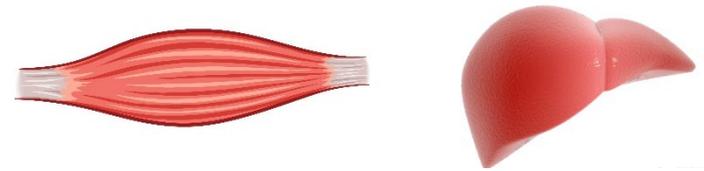
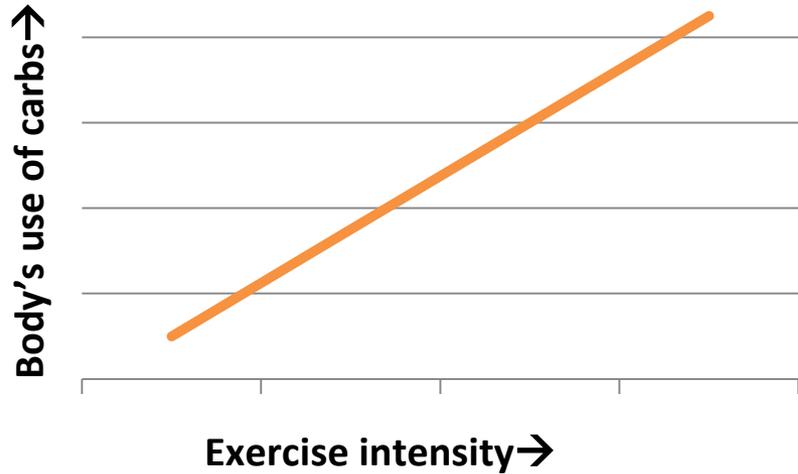


- It has to be charged periodically to have enough power
- Over the course of the day the battery gets slowly drained
- Certain activities (video chats, roaming, etc.) take up more power and really “work” the phone

It's similar for a student-athlete!

- You need to consume carbohydrates periodically for energy
- Those carbohydrates stored up slowly get used over the day
- Certain activities (like rowing!) use up more carbohydrate

Carbohydrates for Exercise



Carbs stored as **glycogen** in muscle and liver.

Limited storage → 300-400 grams
(1200-1600 Calories)

Quality Carbohydrates

What they do...

- Energy for the body, in particular the brain and muscles
- Important for high intensity or high volume exercise
- Good for gut health



What foods contain them...

- Potatoes/sweet potatoes
- Brown rice
- Quinoa
- Barley
- Whole grain pasta
- Whole grain bread
- Oatmeal/cereal
- Fruit (fresh, frozen, or canned in fruit juice)
- Tortillas
- Corn
- Butternut or acorn squash
- Beans
- Low-fat dairy (milk, yogurt)



The Athlete's Plate



Quality Carbohydrates

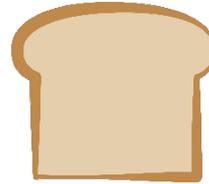


1 to 2 cups quality carb

Guess the Daily Carbohydrate Needs...



= 1 cup rice = 40 grams



= 1 slice = 20 grams

1) A 270 lb pro football player in summer camp workouts

a) 250-300 grams

b) 500-550 grams

c) 800-850 grams

2) A 160 lb male rower in winter training

a) 200-250 grams

b) 325-375 grams

c) 600-650 grams

3) A 5'0" female gymnast in season

a) 25-50 grams

b) 150-200 grams

c) 300-350 grams

Lean Proteins

What they do...

- Building block: muscle, skin, hair, nails
- Provide satiety



Vitamins



Minerals



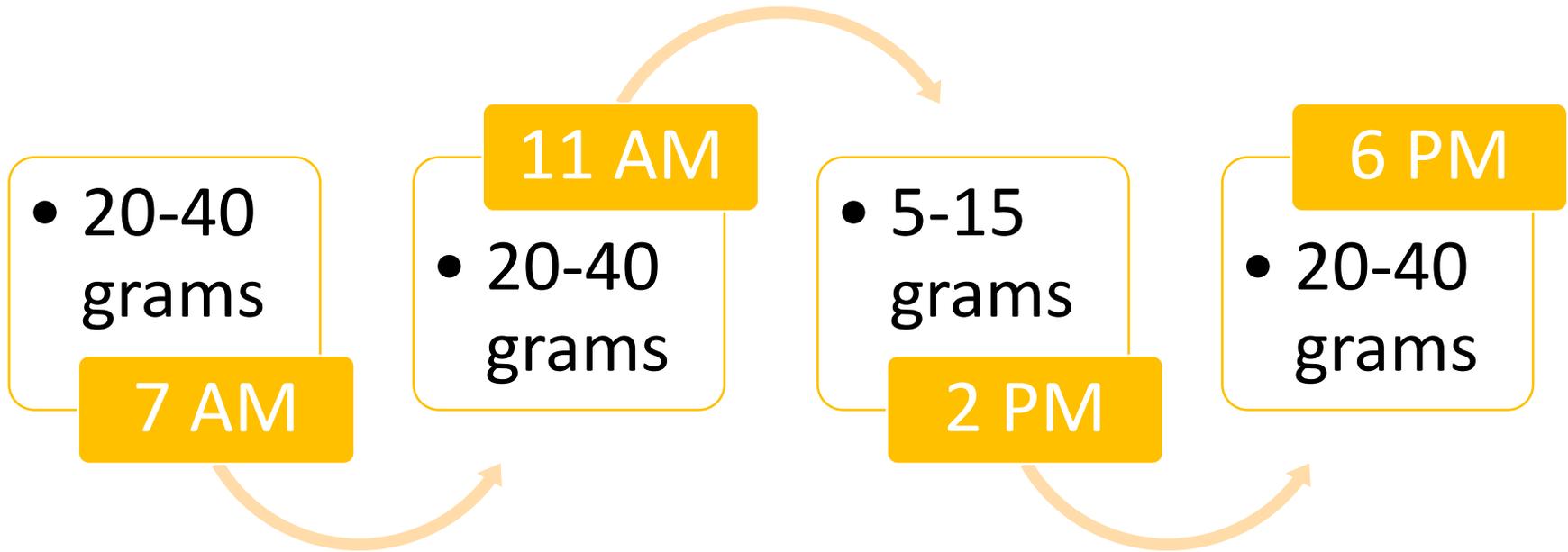
Plant vs Animal

What foods contain them...

- Fish
- Chicken, turkey
- Lean cuts of pork or beef
- Low-fat dairy (milk, yogurt, cottage cheese, cheese)
- Soy (tofu, soy milk, edamame, tempeh)
- Beans, lentils
- Nuts, seeds
- Eggs



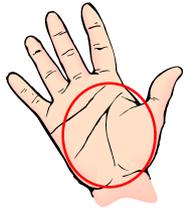
Protein “Spread”



- No storage bin
- Excess gets converted to energy or stored as fat

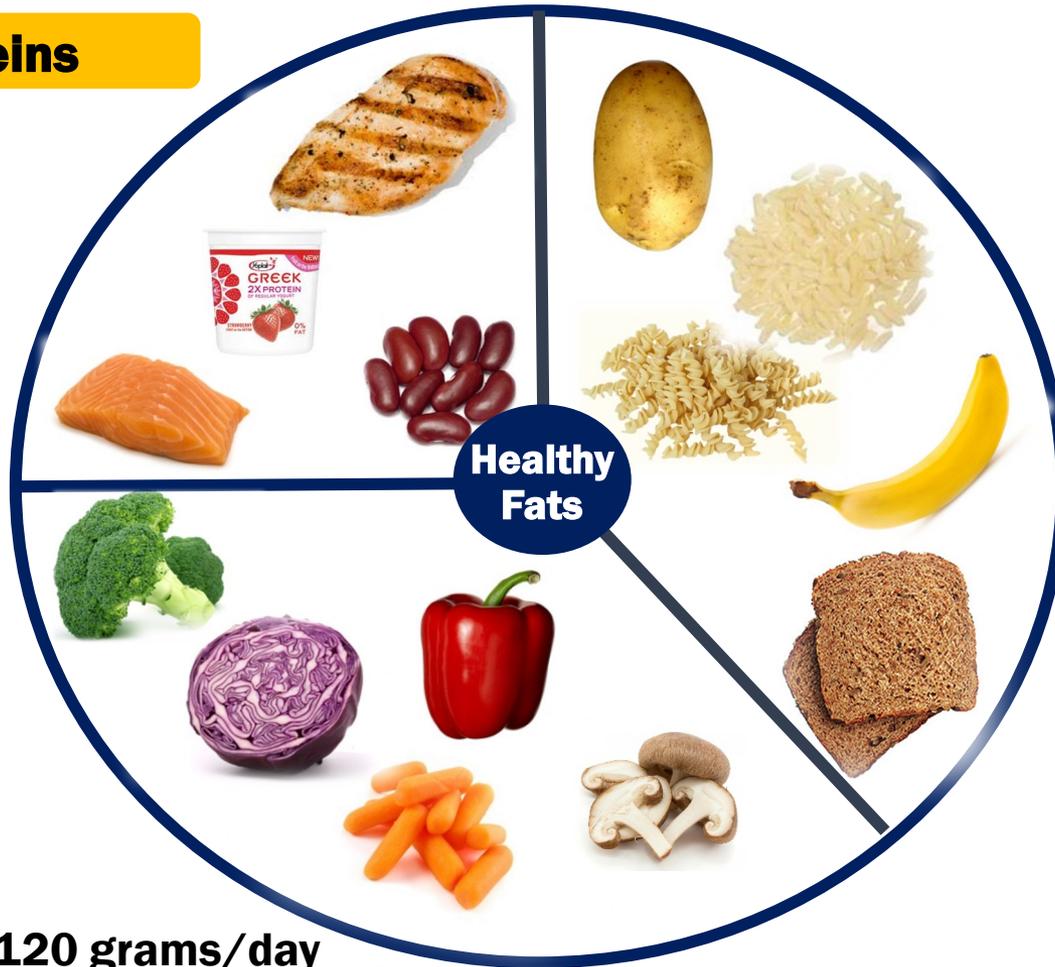
The Athlete's Plate

Lean Proteins



3-4 oz
20-30 grams

140 lb rower = 90-120 grams/day



Guess the Protein Content...

1) 4 oz chicken breast

a) 20 grams

b) 30 grams

c) 40 grams

2) 1 cup plain Greek yogurt

a) 12 grams

b) 22 grams

c) 30 grams

3) 2 tbsp. peanut butter

a) 8 grams

b) 12 grams

c) 26 grams

4) 1 cup almond milk

a) 1 gram

b) 5 grams

c) 10 grams

Healthy Fats

What they do...



Unsaturated

- “Limitless” energy supply – low to moderate intensity activity
- Build cell membranes & support nerve transmission
- Reduce (or promote) inflammation

What foods contain them...

- Oils (olive, canola, flax, avocado, sesame, etc)
- Nuts & seeds (walnuts, almonds, peanuts, chia seeds, etc)
- Nut butters (peanut, almond, soy)
- Avocado
- Fatty fish (salmon, mackerel, sardines)



Non-starchy Vegetables

What they do...

- Provide antioxidants
- Good for gut health
- Source of water

- ✓ Vitamins
- ✓ Minerals
- ✓ Fiber

What foods contain them...

- Asparagus
- Cauliflower
- Eggplant
- Peppers
- Zucchini
- Mushrooms
- Onion
- Tomato
- Brussel sprouts
- Carrots
- Broccoli
- Cabbage
- Bok choy
- Leeks
- Celery
- Cucumbers
- Spinach
- Beets
- Parsnips
- Kale
- Turnip

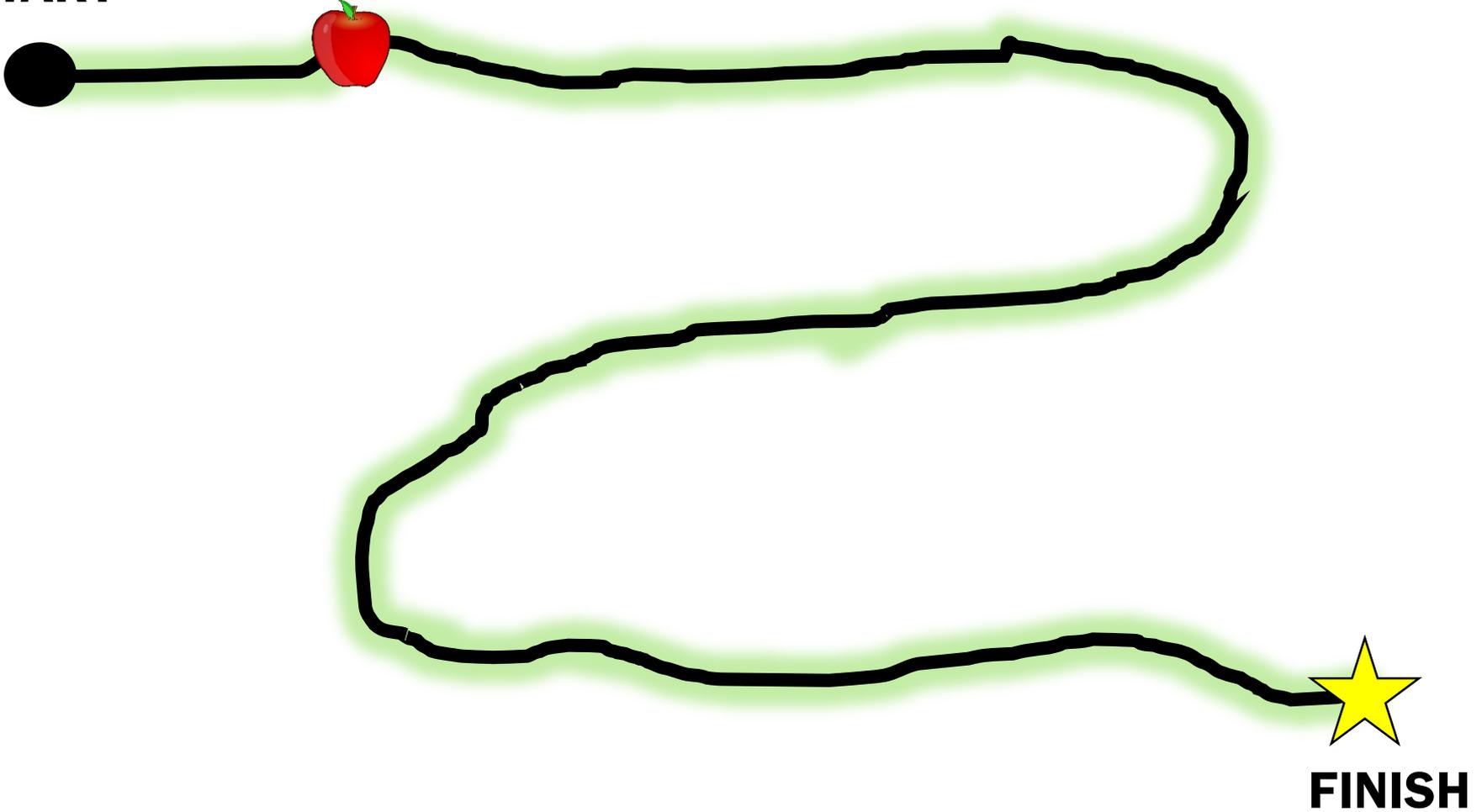


Let's Play “Fuel Your Day”

1. Transit the path from start to finish.
2. The  indicates an eating opportunity.
3. Listen to the fueling guidance then pick an example meal or snack from the options provided that is appropriate for that time.

A Training Day

START



Breakfast Time!

- Start the day off balanced
- Think of the “Athlete’s Plate” (maybe swap a fruit for a vegetable)

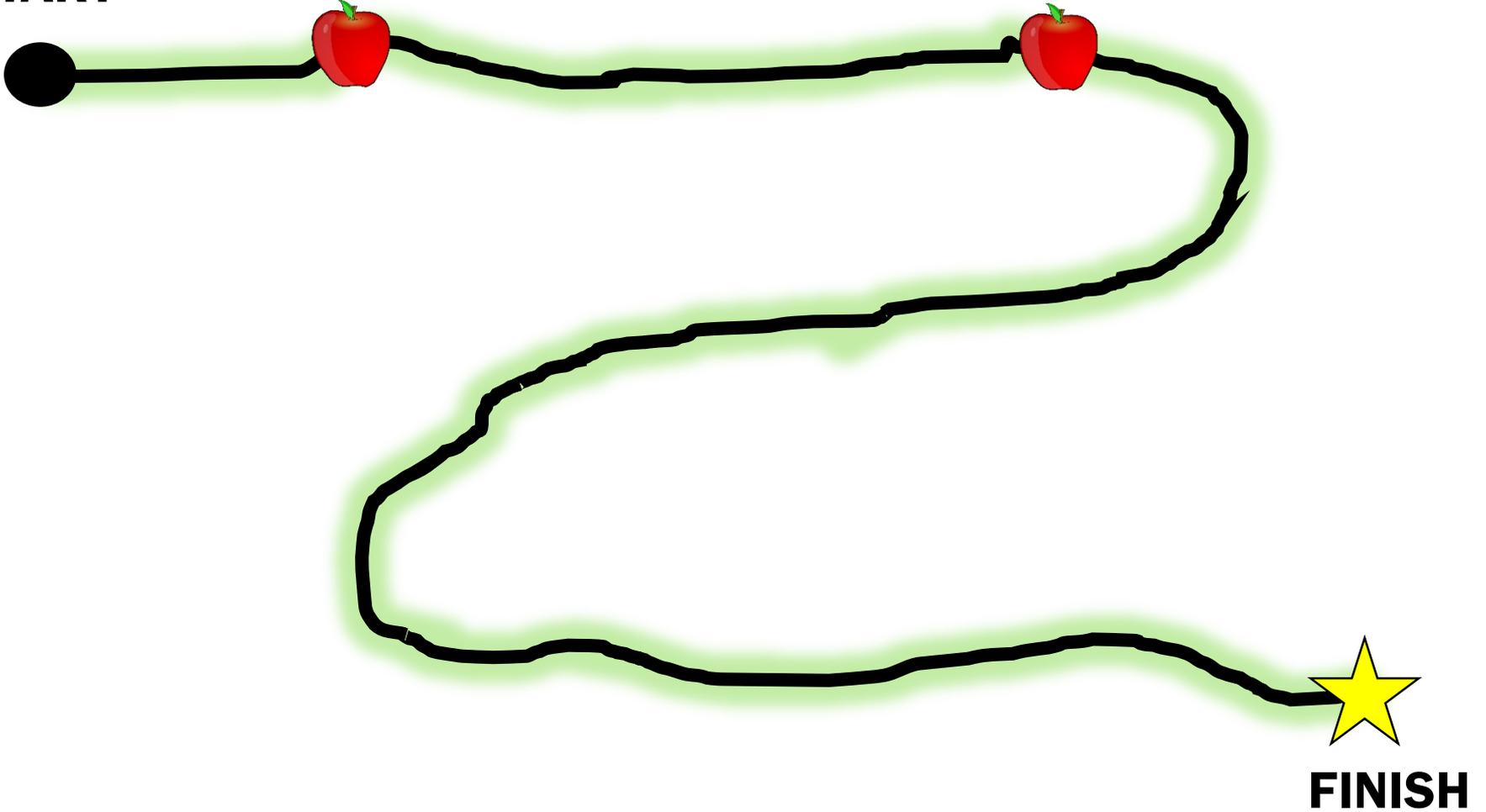
| YOUR CHOICES | | |
|--|---|--|
| English muffin Sliced bread Oatmeal Leftover roasted potatoes Cereal | Greek yogurt Milk Eggs Sliced cheese Walnuts Peanut butter | Bananas Blueberries Spinach Bell pepper |

What would you have?

- Egg & cheese sandwich on English muffin with a banana
- Oatmeal (made with milk) topped with walnuts and blueberries
- Cereal (with milk) topped with banana and an egg on the side
- Potato hash with bell peppers and 2 eggs

A Training Day

START



Lunch Time!

- Keep your energy going with a balanced choice
- Think of the “Athlete’s Plate” (maybe swap a fruit for a vegetable)

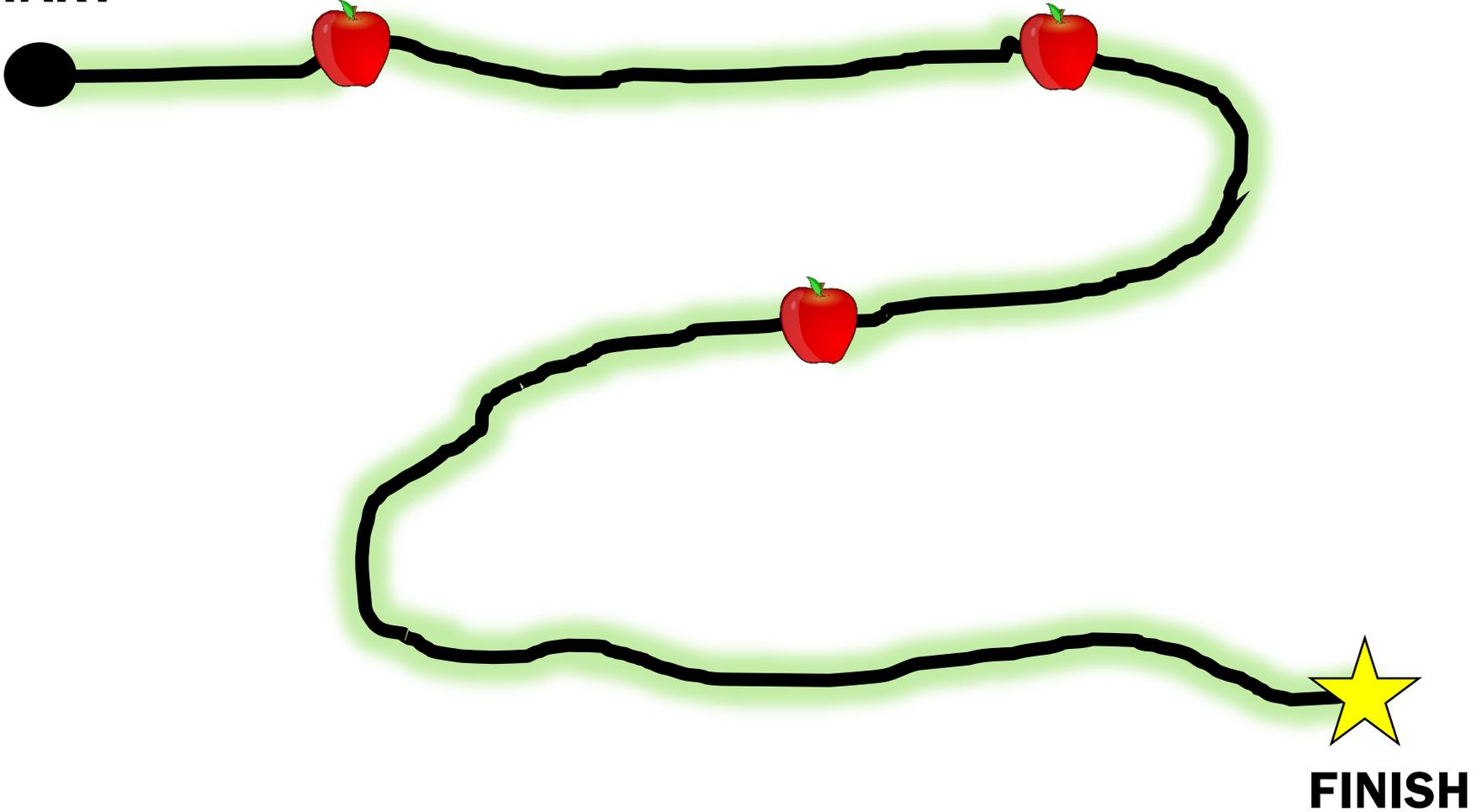
| YOUR CHOICES | | |
|--|--|--|
| Sliced bread Brown rice Baked potato Whole grain crackers Corn | Sliced turkey meat Cheese stick Leftover chicken Hardboiled egg Hummus Leftover chili | Spinach Carrot sticks Vegetable soup Leftover sautéed broccoli Apple Orange |

What would you have?

- Turkey sandwich with spinach plus carrots with hummus
- Leftover chicken & broccoli with brown rice
- Leftover chili with whole grain crackers and an apple
- Vegetable soup plus a hardboiled egg and cheese stick

A Training Day

START



Pre-Workout Snack Time!

- ~1-2 hours before practice
- Carbohydrate + some protein
- Easy to digest (lower fiber & fat)

| YOUR CHOICES | | |
|--|--|-----------------------------|
| Sliced bread Granola bar Graham crackers | Protein bar (5-10 grams) Almonds Turkey jerky Low-fat chocolate milk (8-12 oz) Peanut butter | Banana Orange Raisins |

What would you have?

- Slice of bread with small amount peanut butter
- Banana plus almonds
- Protein bar
- Granola bar plus turkey jerky

The gut is trainable – practice!

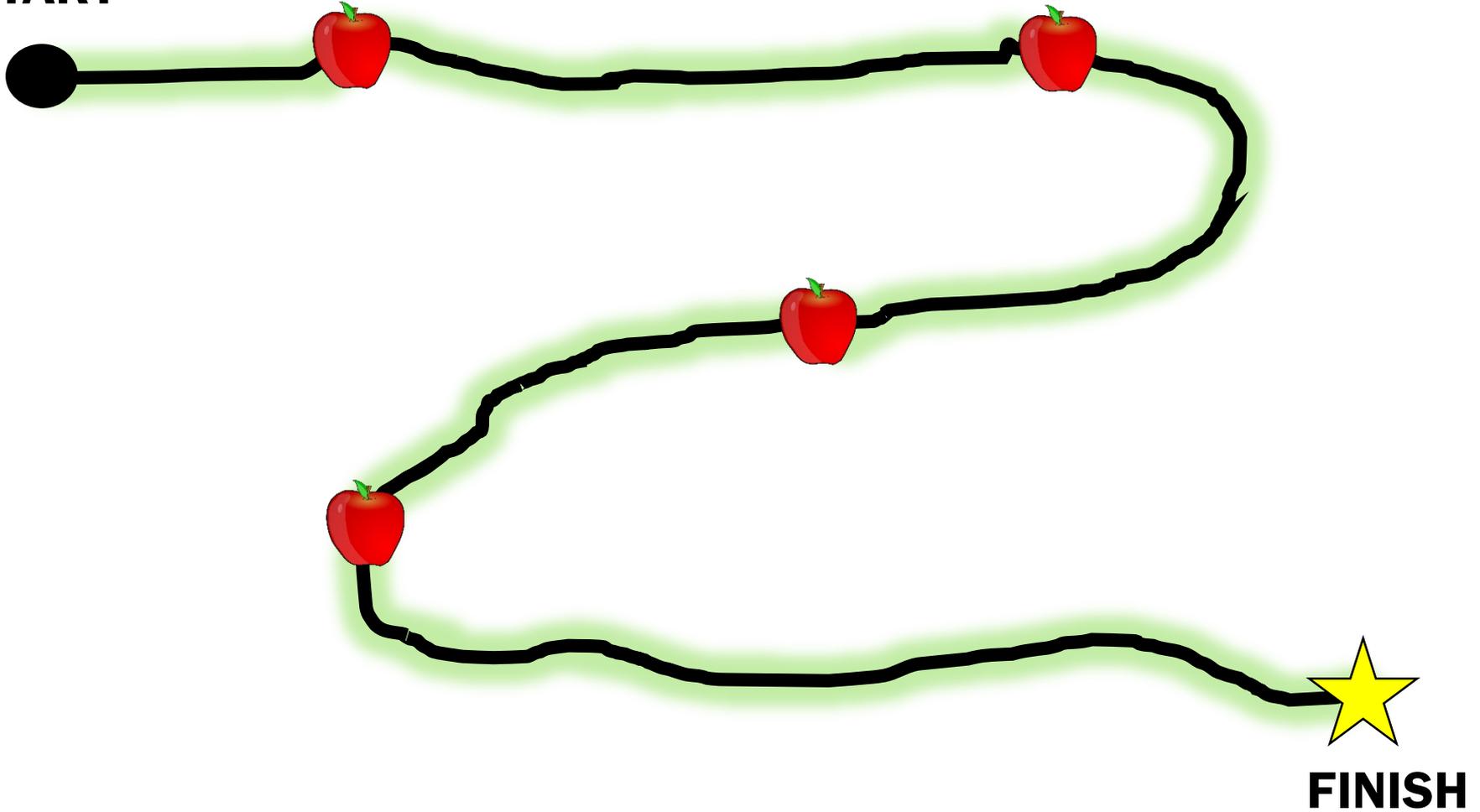
The closer to go-time, the more focus on carbs...

| 60-90 minutes | 0-30 minutes |
|--|----------------------|
| ½ PB & J sandwich | 8-12 oz sports drink |
| ½ large baked potato ¼ - ½ cup cottage cheese | 6 sports chews |
| Rice cake with PB smear Banana | 1 sports gel |
| 1 bagel ½ cup yogurt | ¼ cup raisins |
| Clif® Bar | 1 banana |
| ½ turkey sandwich | 1 orange |
| ½ - ¾ cup yogurt Banana | -- |
| 1 bagel 1-2 tbsp. PB | -- |

- Faster to digest
- Easier to digest, fewer gastrointestinal problems

A Training Day

START



Post-Workout Snack Time!

- Suggested if NOT eating dinner for at least 60 minutes
- Carbohydrate + protein + fluids

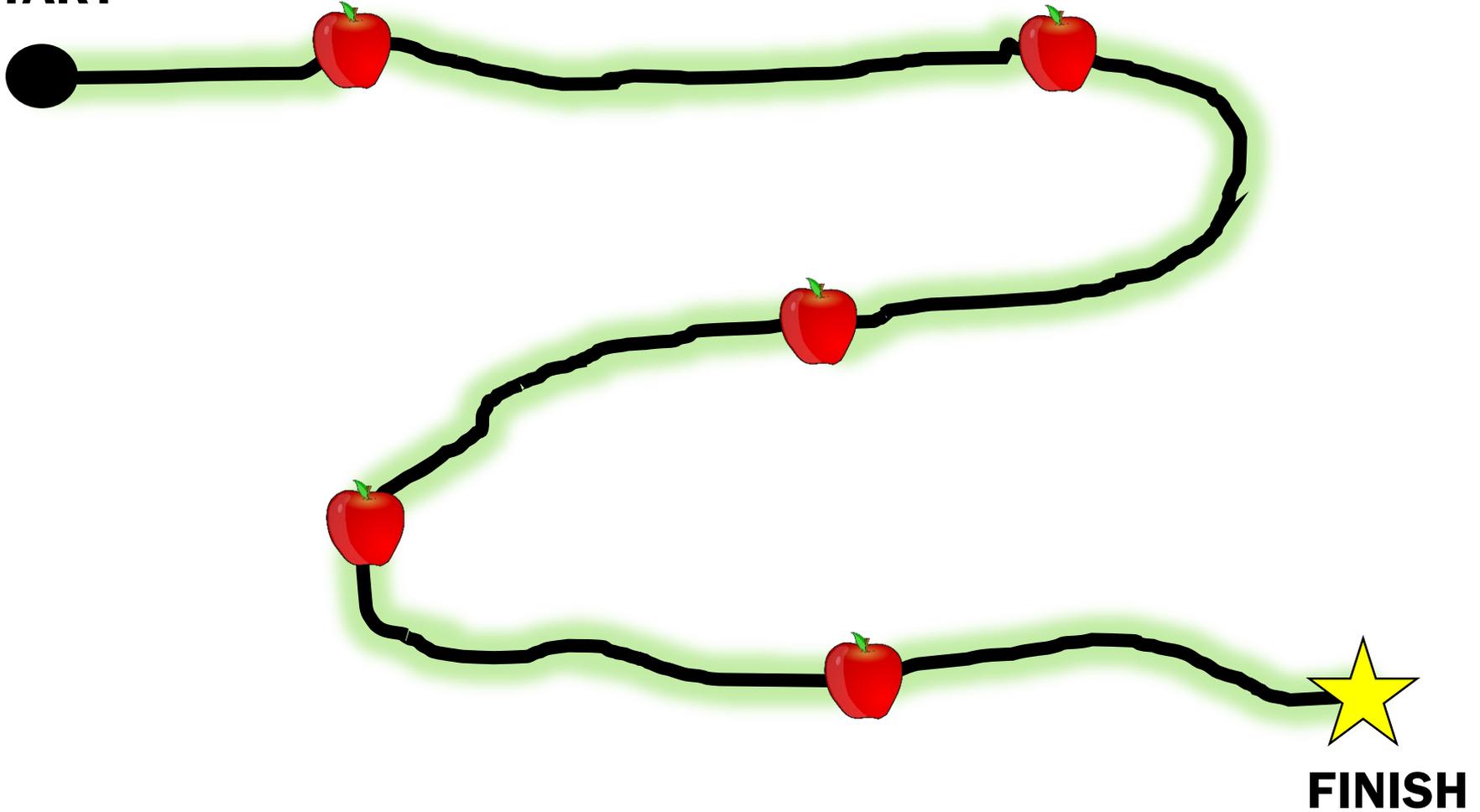
| YOUR CHOICES | | |
|--|---|-----------------------------|
| Sliced bread Granola bar Graham crackers | Protein bar (10-20 grams) Almonds Turkey jerky Low-fat chocolate milk (8-12 oz) Peanut butter | Banana Orange Raisins |

What would you have?

- Chocolate milk
- Protein bar plus banana
- Graham crackers plus peanut butter
- Raisins plus almonds plus turkey jerky

A Training Day

START



Dinner Time!

- Finish on a balanced note
- Think of the “Athlete’s Plate” – get in a veg if you missed it earlier

| YOUR CHOICES | | |
|--|---|--|
| Brown rice Baked potato Pasta Quinoa Burger buns | Grilled chicken Salmon Veggie burgers Pork tenderloin Turkey burger | Romaine salad Sautéed green beans Sautéed peppers & onions Roasted Brussel sprouts Steamed cauliflower |

What would you have?

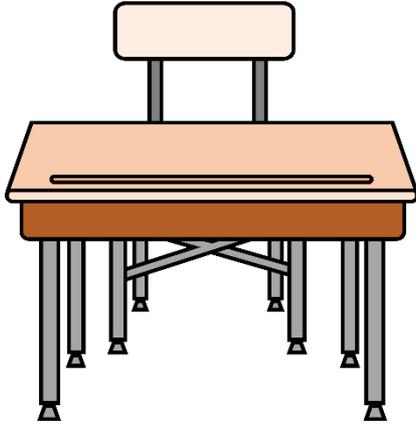
- Salmon with baked potato and steamed cauliflower
- Brown rice with grilled chicken and romaine salad
- Turkey burger on bun with peppers & onions
- Veggie burger on bun with sautéed green beans

Put it all together - Example Plan

| (150-160lb Rower) | MEAL PLAN |
|---------------------------------|--|
| Breakfast | 2 eggs 1 cup oatmeal made with milk 1 cup berries 1 slice whole wheat toast with peanut butter |
| Morning Snack | Snack bag (handful) fruit and nut trail mix |
| Lunch | Turkey with cheese and spinach on whole wheat bagel 10-12 carrot sticks with hummus Apple Small handful almonds |
| Afternoon Snack/ Pre-workout | Granola bar |
| Post-workout* | Turkey jerky Banana |
| Dinner | 4-5 oz pork tenderloin (made with olive oil) 1 large sweet potato (with 1-2 tsp butter) 1 cup steamed broccoli 1 small whole wheat roll |
| Snack | 1 vanilla Greek yogurt |

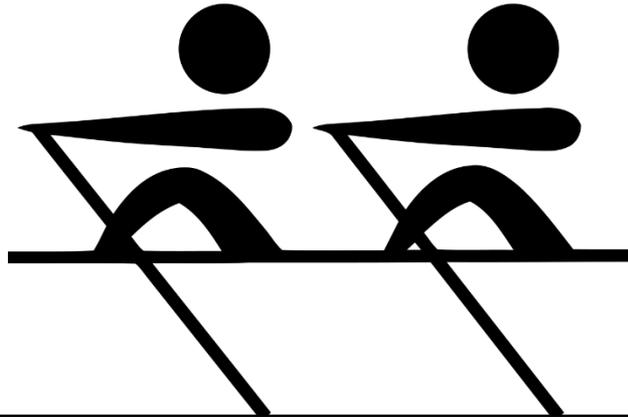
*Necessary if not having dinner within 30-60 minutes of practice finish

Obstacles to the Fueling Plan



| | |
|---------------------|---|
| Obstacle: | Class schedule, not allowed to eat in class, etc. |
| Solution(s): | <ul style="list-style-type: none">• Carry snacks in backpack – snack between class• Keep non-perishable snacks in locker for “just in case”• Allowed liquids? Drink caloric beverages during class• Uses insulated lunch bag for more options• Adapt certain meals or snacks to be larger/smaller to fit schedule |

Obstacles to the Fueling Plan



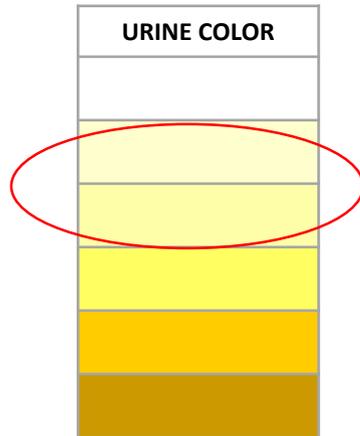
| | |
|---------------------|---|
| Obstacle: | Practice schedule/timing |
| Solution(s): | <ul style="list-style-type: none">• Bring snacks to school for pre-practice• Adjust size or content of other meals or snacks based on timing<ul style="list-style-type: none">• Ex: Have a larger morning snack and smaller lunch if late in the day• Ex. Have a larger lunch if early in the day, large snack in the afternoon• Bring post-practice snack, or have parent bring snack |

Hydration

Hydration: Timing

Before practice/regatta

- 8-12 oz before early morning row
- Sip 20-24 oz in 1-3 hours leading up to afternoon practice
- Carry bottle all the time!!
- Watch urine



During

- Drink based on *sweat rate*
- Sports drinks:
 - Heavy or salty sweater
 - Fatigue during practice
 - Cramp during game/practice

After practice/regatta

- 20-24 oz every lb lost
- Water + foods, sports drinks
- Don't chug

What hydrates?



Sweat Test

Goal = Prevent losing >2% of starting body weight

Step 1: Weigh yourself without clothing immediately prior to a workout roughly 60 minutes in length. Record weight below.

Weight = 165 lbs (Pre-Workout)

Step 2: Record any fluid consumption during the workout.

Fluid consumed during workout = 32 oz consumed

Step 3: Remove wet clothing, dry off, and weigh yourself immediately following the workout. Record weight below.

Weight = 163 lbs (Post-Workout)

Step 4: Subtract your post-workout weight from your pre-workout weight to determine weight lost during the workout and record below.

165 - 163 = 2 lbs weight change
(Pre-Workout) (Post-Workout)

Step 5: Convert lbs to oz to determine fluid lost. (1 lb = 16 oz)

2 * 16 = 32 oz fluid/weight change
(lbs lost during)

Step 6: Account for any fluid consumed during the workout by adding it to what you lost.

32 + 32 = 64 oz TOTAL lost during workout
(oz lost during) (oz consumed)

Note: **Replace with 30-36 oz/hr during**

Avoid losing more than 2% body weight during a workout

Questions?

Lauren Trocchio, RD, CSSD, CSOWM, LD
nutritionunlocked@gmail.com

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