



# From Kitchen To Finish Line: Nutrition's Role in Distance Running

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“It is the position of the American Dietetic Association\*, Dietitians of Canada, and the American College of Sports Medicine that **physical activity, athletic performance, and recovery from exercise are enhanced by optimal nutrition.**”

\*American Dietetic Association is now The Academy of Nutrition and Dietetics



# Overview

- A Healthy Diet
- Pre-Run
- During-Run
- Post-Run
- Hydration
- Anti-Inflammation
- Questions



# Everyday eating

- Having a very specific plan is most important for runs > 10K
- For all distances **focus on**
  - Maintaining a healthy, balanced diet
  - Eating sufficient (but not excessive) carbohydrate
  - Eating consistent meals (to maintain glycogen stores over time)



# A Healthy, Balanced Diet

- Mostly **whole foods**
  - Limit processed foods
- **Variety** is key
  - Help ensure you get all the vitamins and minerals you need
  - Prevents boredom
- **Focus on**
  - Fruits
  - Vegetables
  - Whole grains
  - Healthy fats
  - Lean proteins

# Find what works for you

- Everyone is **different**
- A nutrition plan based on **your needs** can help maximize performance
- Experiment with foods and drinks through **trial and error**
  - Keep a food and workout journal



A photograph of fresh spinach leaves. One leaf is on the left, and a small metal bowl filled with more spinach leaves is on the right. The background is a rustic wooden surface.

# Pre-Run: Eating

- Eat **3-4 hours** before a run
  - Allows time for digestion and absorption of food
  - Allows time for stomach emptying
  - Provides final addition to glycogen stores and blood glucose

or

- Eat **30-60 min.** before a run (only if running for > 90 min.)
  - To top off energy stores

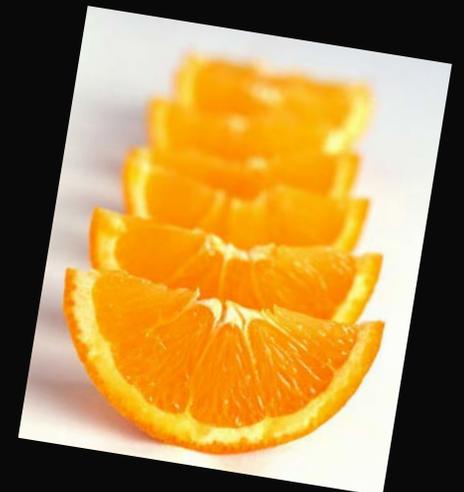
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# Pre-Run: Eating

- Pre-run snacks and meals
  - Include **easily digestible carbohydrate-rich foods**
    - To build up/maintain glycogen stores
  - Include **small amounts of protein**
    - May reduce post-run soreness (protein helps build and repair muscle tissue)
  - **Low** in fat
  - **Low** in fiber
    - Fat and fiber slow digestion

# Pre-Run: Ideas

- For **3-4 hours** before run
  - Nut butter and/or honey on toast
  - Fruit and yogurt smoothie
  - Oatmeal with fruit and nuts
  - Turkey sandwich
  - Milk
  - Whole fruit



# Pre-Run: Ideas

- For **30-60 min.** before run (for > 90 min. run)
  - Sports drink
  - Sports gel
  - Sports bar
  - Piece of fruit
  - Jam and/or honey on crackers
  - ≤ 1 cup water



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# Pre-Run: Barriers

- **No appetite** (pre-run jitters, just not a “breakfast person”)
  - Drink your meal (milk, smoothie)
  - Easy to eat fruits
- **Running first thing in the morning**
  - Eat a snack before bed (to maintain glycogen stores)



# During-Run: Eating

- Only if running for > 90 min.
- Food during runs
  - **Easily digested carbohydrate-rich foods**
    - To provide fuel for muscles and the brain
  - Consume foods or drinks at **regular intervals**
    - 15-30 minute intervals (use a timer as a reminder)
    - Don't wait until it's too late—**fuel before you need it**

# During-Run: Ideas

- Sports drink
- Sports gel (with fluids)
- Sports chews (with fluid)
- Sports bars
- Fruit
- Bread/crackers with jam/honey
- Low-fat granola bites
- Pretzels
- Applesauce



# Post-Run: Eating

- Recovery nutrition is **crucial if next long run is within 8 hours**
- Eat **within 15-60 min.** following a long run
- Then, eat in **15- to 60- min. intervals**





# Post-Run: Eating

- Post run snacks and meals
  - Include **easily digestible carbohydrate-rich foods**
    - To replace fuel (glycogen stores)
  - Include **protein**
    - To help repair damaged muscle tissue and stimulate development of new tissue

# Post-Run: Ideas

- Snacks

- Fruit and yogurt smoothie
- Sports drink + sports bar (with protein)
- Crackers with nut butter
- Regular/flavored milk
- Fruit with nut butter
- Chocolate covered nuts
- Energy bites



# Post-Run: Ideas

- Meals

- Whole wheat sandwich with turkey and veggies + milk
- Brown rice with beans, cheese, salsa, avocado + whole grain tortilla chips/whole wheat tortilla
- Stir fry with lean steak, broccoli, bell peppers, carrots, and brown rice



# Post-Run: Barriers

- **No appetite** after long run
  - Drink your meal (milk, shake, smoothie)



# Hydration

- **Fluids are needed** to stay hydrated before, during, and after a run
- Drink fluid **consistently throughout the day**
- **Experiment during training** to identify fluid volume and type that feels comfortable and allows you to perform your best





# Hydration

- If running > 90 min., use **sports drink** to replenish fluids and electrolytes lost in sweat
- For half and full marathons
  - Stop drinking water 2 hours before race to allow bladder to empty
  - $\leq 1$  cup within 2 hours before race
  - Find out what drinks will be on the course on race day





# Hydration

- Worried you aren't hydrating enough?
  1. Weigh yourself before and after your run
  2. For every pound of body weight lost during exercise, you need 16-24 oz. fluid

**$(\text{wt. before run} - \text{wt. after run}) \times (16-24 \text{ oz.}) = \text{oz. fluid to drink}$**

# Choosing the right sports drink

- Choose one with  $\leq 10\%$  carbohydrate
  - For optimal absorption of glucose into the bloodstream



## Nutrition Facts

Serving Size 12 fl oz (355 mL)  
Servings Per Container About 2.5

Amount Per Serving

Calories 80

% Daily Value\*

Total Fat	0g	0%
Sodium	160mg	7%
Potassium	45mg	1%
Total Carbohydrate	21g	7%
Sugars 21g		
Protein	0g	

Not a significant source of calories from fat, saturated fat, *trans* fat, cholesterol, dietary fiber, vitamin A, vitamin C, calcium, and iron.

\*Percent Daily Values are based on a 2,000 calorie diet.

WATER, SUGAR, DEXTROSE, CITRIC ACID, NATURAL AND ARTIFICIAL FLAVOR, SALT, SODIUM CITRATE, MONOPOTASSIUM PHOSPHATE, MODIFIED FOOD STARCH, GLYCEROL ESTER OF ROSIN, BLUE 1

Last updated on February 27, 2015.

A photograph of fresh green spinach leaves. One leaf is placed on a wooden surface to the left, while a small metal bowl filled with more spinach leaves is on the right. The background is a rustic wooden table.

# Reducing Inflammation

- Running puts stress on muscles, which leads to inflammation, which can lead to **scar tissue, poor mobility, and delayed recovery times**
- Focus on foods that are **anti-inflammatory**
  - Omega-3 fatty acids
  - Monounsaturated fats
  - Antioxidants
  - Certain foods, herbs, and spices



Questions?



# References

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