

Nutrition in action

How to best fuel your mind and body for swim & diving

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WHAT YOU EAT HAS A POWERFUL EFFECT ON YOUR ABILITY TO PERFORM AT YOUR BEST!

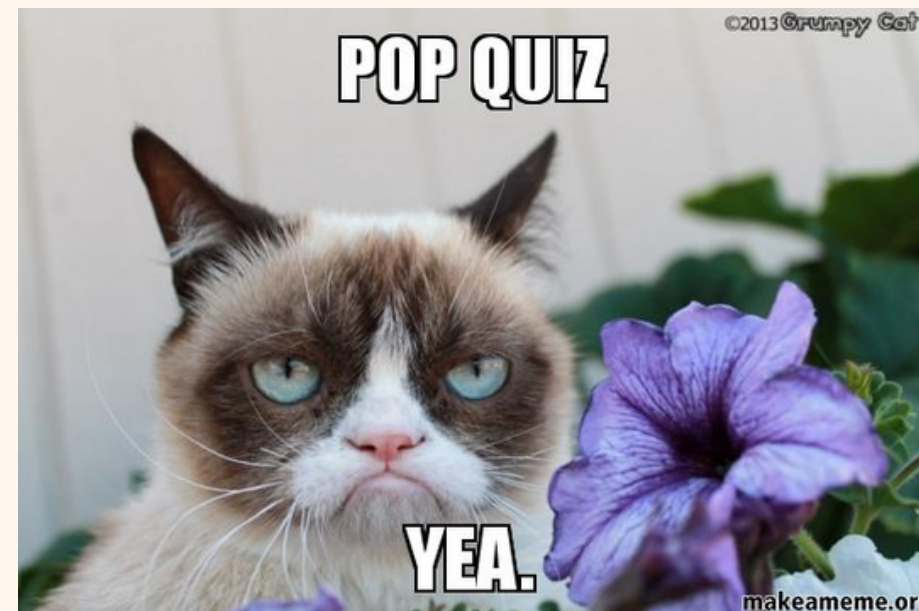
“...too many athletes show up for training but they don't show up for meals. They might as well not show up for training.”





SPORTS NUTRITION QUIZ

The following quiz can help you determine if you are fueling your body for top performance....



QUESTION 1:

Fat is the best source of fuel for your muscles during swim & diving.

True

False



B. FALSE-

Carbohydrates found in grains, fruits, and vegetables are the best source of energy for your body



- THE BEST FUEL FOR MUSCLES DURING EXERCISE IS **CARBOHYDRATE**
- BODY STORES CARBOHYDRATE MOSTLY IN THE MUSCLES AND LIVER IN A FORM KNOWN AS **GLYCOGEN**
- IF YOU AREN'T EATING ADEQUATE AMOUNT OF CARBS YOU MAY **RUN OUT OF FUEL** DURING A LONG WORKOUT

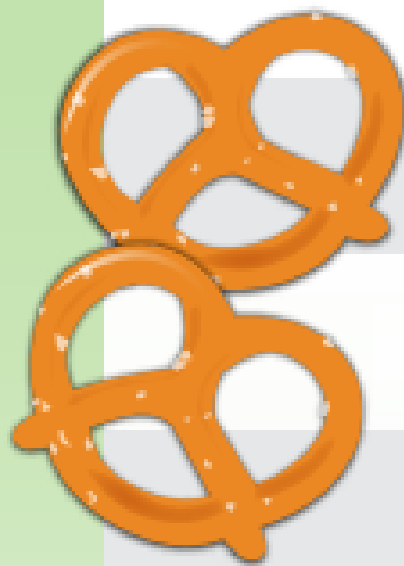


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MACRONUTRIENT FOUNDATIONS

by Lisa Chan, MS, RD, CSSD, LD

Carbohydrates are FUEL



- Carbohydrates are the main source of energy for an athlete's body & brain.
- Carbohydrates help athletes maintain intensity, prevent muscle breakdown, and assist in maintaining hydration.
- Some carbohydrates provide a quick source of fuel (white bread/rice/pasta, pretzels, sports drinks, applesauce).
- Other carbohydrates fill your fuel stores for later use (oats, whole grain bread/rice/pasta, low-fat granola).
- When carbohydrate intake is too low, energy levels, strength, stamina, and decision-making may suffer during workouts. This may lead to poor performance and increased injury risk.
- As an athlete, consuming adequate carbohydrates at appropriate times can make a big difference in training, performance, and overall athletic success.



MACRONUTRIENT FOUNDATIONS

Fat is ESSENTIAL

- Fat is an essential component for athletes striving for a quality performance diet.
- **The many functions of fat:** maintain body temperature, support immune function, cushion and protect organs, facilitate nerve transmission, assist in vitamin absorption, and provide a source of energy for long-term, low intensity aerobic activities.

TYPES OF FATS:

- **Unsaturated fats**—found in foods like olive/canola/peanut oils, nuts, avocados, fatty fish, eggs, seeds.
 - May help keep cholesterol and blood pressure low.
 - Omega-3 fatty acids—unsaturated fats linked to reducing inflammation and supporting brain health (and potentially decreasing concussion risk and/or symptoms).
- **Saturated fats**—found in foods such as dairy foods, fatty cuts of meat, chicken skin, margarine, deep fried fast foods, commercially baked pastries/pies, biscuits.
 - Increased intake of saturated fats may contribute to: elevated cholesterol, risk of heart disease/stroke, and inflammation in the body.



CHOOSE UNSATURATED FATS MORE OFTEN THAN SATURATED FATS

When fitting foods into your performance diet, remember:

- Too little fat may contribute to low energy levels during aerobic exercise, compromised immune function, inconsistent menstrual cycles in women, and inefficient digestion of certain nutrients.
- Too much fat can contribute to inadequate intakes of the other macronutrients, undesirable weight gain, and health issues such as heart disease.

QUESTION 2:

Eating extra protein increases the amount of muscle you have.

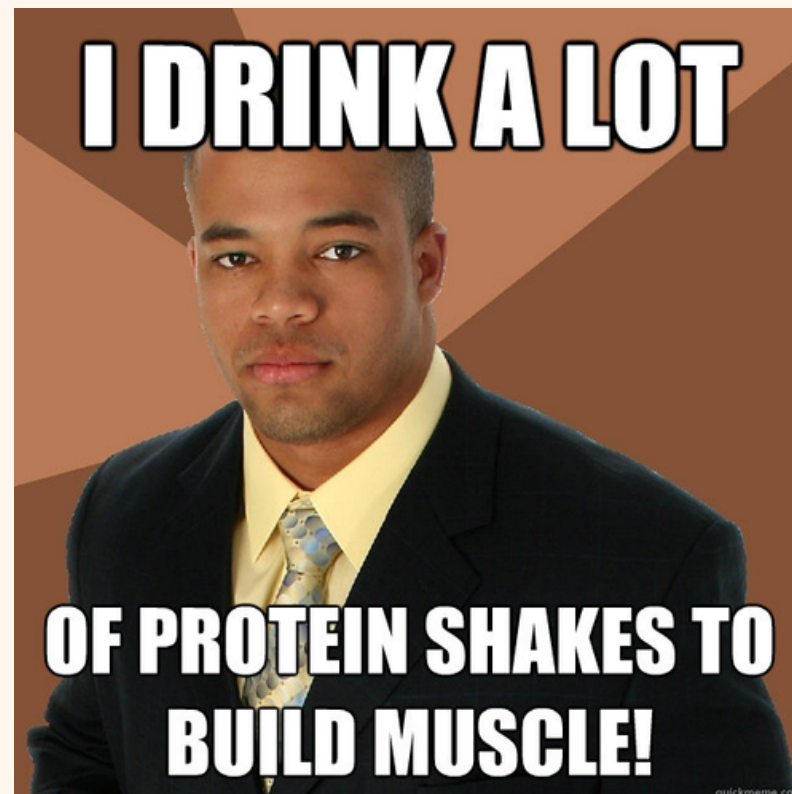
A. True

B. False



B. FALSE, BRO

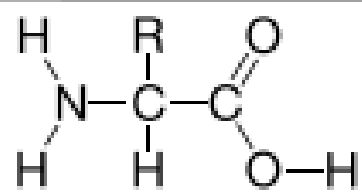
Eating extra protein will NOT increase the amount of muscle you have



- TO BUILD MUSCLES, YOU SHOULD FOCUS ON:
 - EXTRA STRENGTH TRAINING
 - ADEQUATE PROTEIN (PRE & POST-EXERCISE)
 - EXTRA CALORIES (FROM CARBOHYDRATES)
- NO SCIENTIFIC EVIDENCE SUGGESTS THAT CONSUMING MORE THAN 2.0 GRAMS/KG/DAY WILL PROVIDE ADDITIONAL ADVANTAGES TO ATHLETES

Protein is STRUCTURE

- Protein plays a big role in keeping the body functioning properly, and a healthy, nourished body is one that can perform at the highest levels.
- In our bodies, protein makes up tissues (including muscle), enzymes (which help facilitate reactions in the body, e.g., metabolism of food into usable energy), hormones (your body's messengers), antibodies (for proper immune function), and much more.

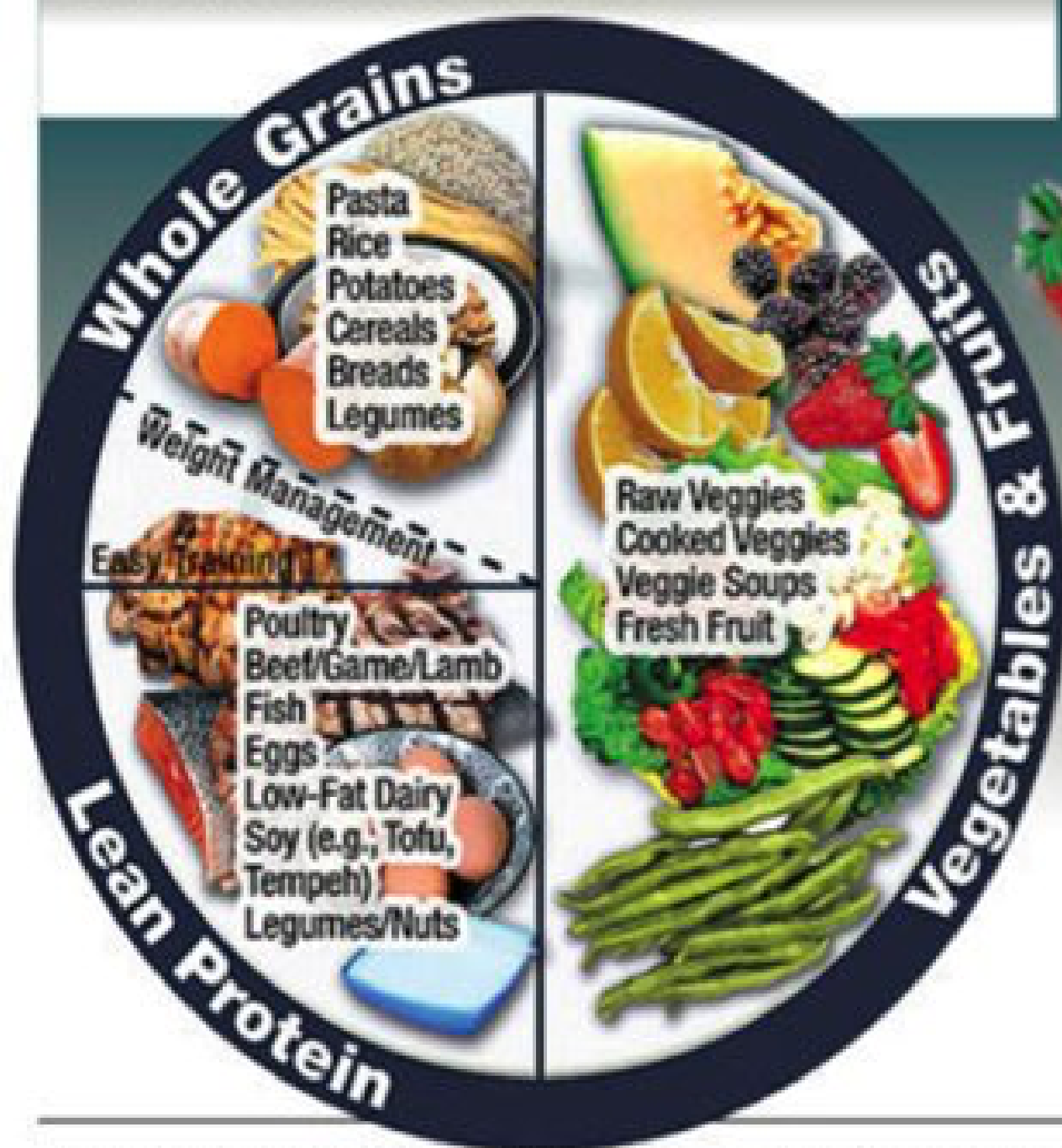


Example of an Amino Acid

- Proteins are made up of building blocks called **amino acids**.
 - There are 20 amino acids; 9 are essential, meaning you need to get them from your diet.
 - Essential amino acids are critical in athletic recovery and muscle building.
- Protein is most effectively used when spread throughout the day, rather than in 1 or 2 large meals.
 - Give your body 4-5 separate doses of protein throughout the day. Have a source of protein (meat, poultry, seafood, dairy, eggs, tofu, nuts, etc.) with every meal or snack.
- Post-exercise is an important time for protein. **Recovery nutrition** is important within 45-60 minutes after a workout, but also throughout the next 24-48 hours.
- Protein takes a bit longer than carbohydrates to digest and can help one feel full longer, which may assist in weight loss.



EASY TRAINING / WEIGHT MANAGEMENT



MODERATE TRAINING



HARD TRAINING / RACE DAY



SOURCE: United States Olympic Committee Sport Dietitians
University of Colorado Sport Nutrition Grad Program

QUESTION 3:

The night before competition, should you eat a high carbohydrate dinner, such as pasta?

A. True

B. False

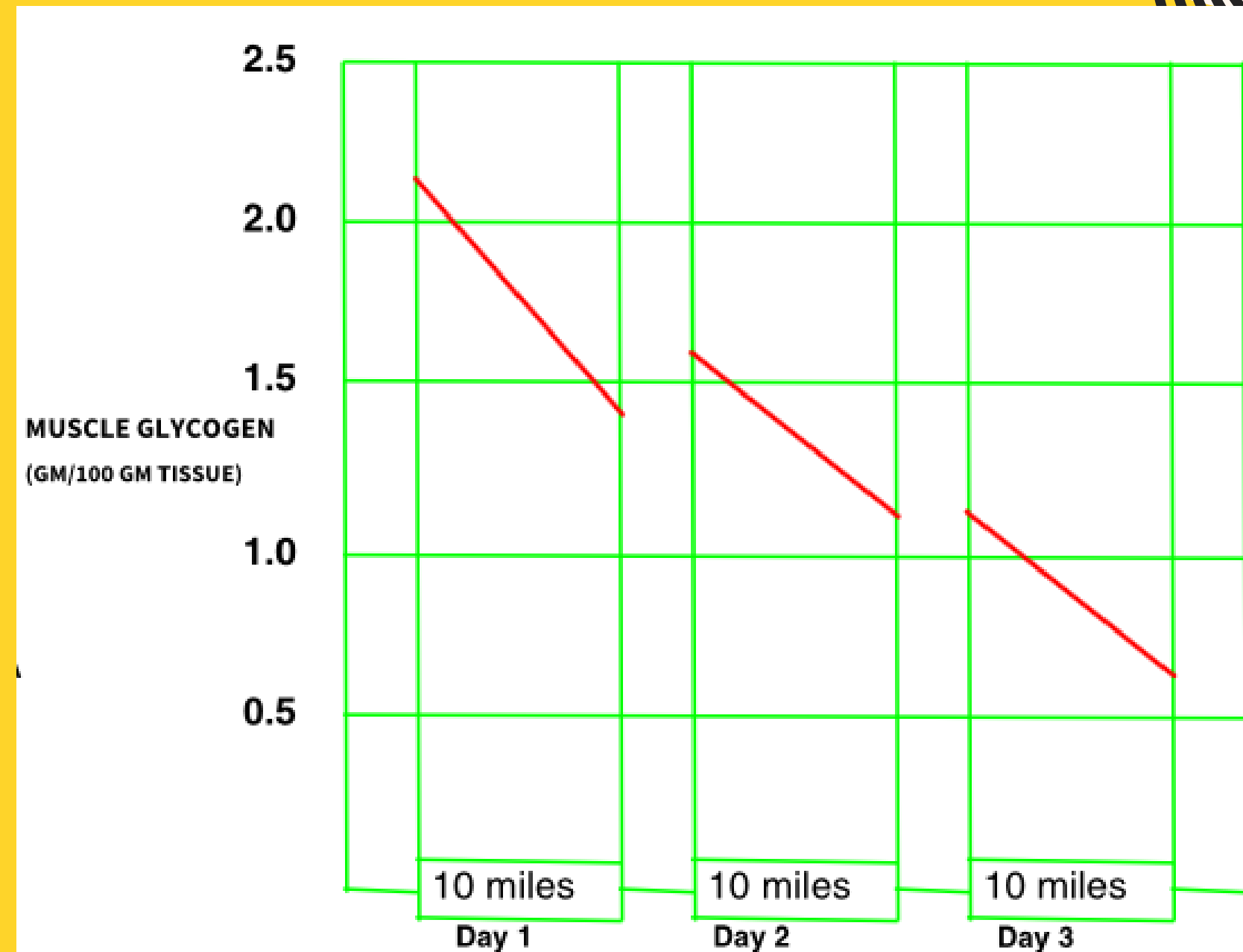
C. Partially true - you should eat high carb foods at breakfast and lunch, as well as at dinner



C. PARTIALLY TRUE

You should eat high carbohydrate foods at breakfast and lunch, as well as at dinner, before a workout.

And, here's why!



QUESTION 4:

What is the best thing to eat before a workout if you are low on energy?

A. A banana

B. Bigger breakfast

C. Extra food at lunch

D. All of the above



D. ALL OF THE ABOVE



A BANANA, MORE BREAKFAST AND MORE LUNCH ARE ALL THINGS YOU SHOULD BE EATING MORE OF IF YOU ARE LOW ON ENERGY BEFORE AN AFTERNOON WORKOUT!

Breakfast and Lunch are the BEST energy boosters and prevent need for quick energy, i.e. "Sugar Fix!!!"



BREAKFAST & LUNCH: BETTER THAN A SUGAR-FIX

Study:

Poorly fueled athletes biked hard for 45 minutes, then sprinted for 15 minutes

Trial	Improvements during final sprint
#1 Baseline: No fuel, only water, snack 5 minutes pre-exercise	---
#2 Sugar (180kcal glucose) + water	+10%
#3 Energy Bar (270kcal) + water	+10%
#4 Meal 4 hours before + energy bar + water	+20%



PRE-WORKOUT NUTRITION

- Eat a combination of foods high in carbs and moderate in protein.
- Focus on foods low in fat and fiber.
- Length and intensity of workouts matter.
- 6 a.m. workout? Fuel well the night before and eat something small in the morning.
- Experiment in practices to figure out what works best.



For advice on customizing a nutrition plan, consult a sports dietitian.

3-4 HOURS BEFORE EXERCISE



- Turkey and Swiss sandwich, apple and low-fat chocolate milk
- Peanut butter and jelly sandwich with banana slices and low-fat milk
- Low-fat Greek yogurt with berries and small salad with chicken
- Always remember to hydrate with at least 16-20 oz. of fluid

30-60 MINUTES BEFORE EXERCISE



- Sports drink
- Fruit, apple sauce, or fruit snacks
- Small granola bar, pretzels, or graham crackers



Pre-Training Fuel Timeline

2-3 hours before practice (about 300-400 calories | 45-60gm carbs)

2 slices whole grain bread + 2 slices of turkey + 1 slice of cheese
Small bagel + 1Tbs low fat cream cheese and jelly
English muffin + 1Tbs peanut butter + banana
2 eggs + 2 slices of whole grain toast
Greek yogurt + granola + fruit
2 waffles + 2Tbs syrup or jam
Granola bar + 8oz of milk
Breakfast sandwich
10oz yogurt or protein smoothie
Small cinnamon raisin bagel
Turkey + cheese+ lettuce+ tomato roll-up



1-2 Hours before practice (about 200 calories | 30-45gm carbs)

Cliff bar, Lara bar, Zone bar, or granola bar
Low-fiber cereal + skim milk (Corn Flakes, Corn Chex, Rice Krispies)
1 string cheese + pretzels
6 oz. of low-fat fruit yogurt
Fruit + Greek yogurt smoothie
Apple + 1 Tsp of peanut butter
Oatmeal + ½ banana
Pita + hummus



15-30 minutes before practice (about 100 calories | 15-30gm carbs)

½ cup applesauce
1 slice of toast + 2 tsp jam
1 cup of dry cereal (Cheerios, Corn Chex, Cinnamon Life)
1 Banana
1 cup Grapes
1 Nutri-Grain Bar
Gatorade Prime 01
1 sports gel or 16oz sports drink
2 fig bars
1 serving of animal crackers, pretzels, or goldfish



Immediately before practice (about 60 calories | 15gm carbs)

½ banana
½ serving of pretzels, animal crackers, or goldfish
1 fig bar
1 cup grapes
½ sports gel
8 oz. sports drink



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QUESTION 5:

If you get hungry during the meet, the best thing to eat during the competition is:

A. Skittles

B. Protein shake

C. Oatmeal with peanut butter

D. Avocado toast



A. BRING ON THE CANDY!!!

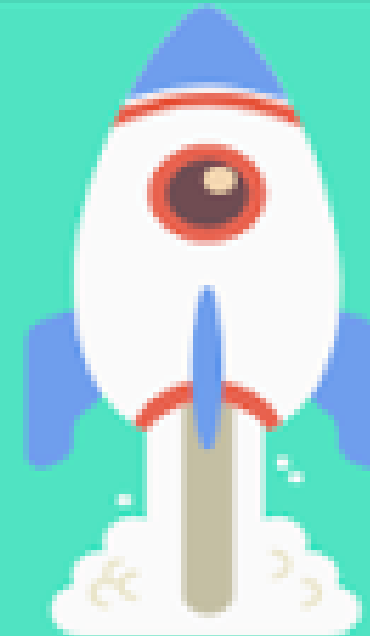
kinda***

FUEL DURING WORKOUT

<60 min:
No fuel needed

60-120 minutes:
eat 30-60g carbs/hour
Aim for 240 calories per hour

>2.5 hours:
60-120g/hour mixed carbs
(glucose and fructose)



Power up
with simple carbs
during a workout
to help with fueling
and digestion!



Carb sources

8 oz sports drink 14 g
6 sports chews 24 g
2 rice cakes 14 g
1 oz pretzels 23 g
1 pouch fruit snacks 21 g
1 packet honey 12 g
1 pack sports gel 22 g



FUELING DURING EXERCISE

- Stay well-fueled during workouts with the right mix and timing of **carbohydrates, fluids** and **electrolytes** to replace what's lost during exercise.
- Take small, frequent bites during exercise and always with fluids.
- Experiment with new foods and drinks during training to find what works best for competition.



For advice on customizing a nutrition plan, consult a sports dietitian.

EXERCISE TIME	TYPE OF EXERCISE	HOW TO FUEL
BRIEF EXERCISE		
<45 MINUTES	• Batting practice • Shoot around (basketball) • Lifting	Focus on water for hydration 
SUSTAINED HIGH-ENERGY EXERCISE		
45-75 MINUTES	• Cross country workout • Stop-and-start sports (soccer, football, field hockey)	Small amounts of carbs throughout activity (i.e., 2-3 gulps of sports fluid or 1/2 serving of applesauce every 15-20 min.) 
ENDURANCE EXERCISE		
1-2.5 HOURS	• Long distance cross country race • Stop-and-start sports (soccer, football, field hockey) • Rowing workouts	30-60 g carbs/hour (i.e., 1-2 handfuls of raisins or 1-2 med banana) 



QUESTION 6:

Out of the following, which would be the best choice for your post practice meal tonight?

A. Salad with Grilled Chicken



B. Hamburger (cheese, no bun)



C. Pasta with marinara/meat sauce



C. PASTA WITH MARINARA/MEAT SAUCE- WOULD BE THE BEST CHOICE FOR A RECOVERY MEAL

- Only carbohydrates replace depleted glycogen stores
- Protein & fat fill your stomach, but do not refuel muscles
- Look for a little protein to repair/build muscles



QUESTION 7:

What is the best time to eat after a workout?

A. Within 60 minutes after the workout

B. Several hours later until dinner

C. 3 hours after a workout



A. 60 MINUTES AFTER A WORKOUT IS THE BEST TIME TO EAT AFTER A WORKOUT

"60 Minute Window of Opportunity"

Recover more efficiently
Increase muscle mass
Burn fat

Ideally 4:1 Ratio of simple carbohydrates and high quality protein for endurance workouts and 3:1 for resistance training



IDEAL POST WORKOUT SNACK IDEAS

- Greek Yogurt and fruit
- ½cup oats + 1 beaten egg + ½ cup water + cinnamon microwave for 4min top with 1Tbs nut butter
- Energy bar - Clif Bar, GoMacro bar, RXBAR, Larabar
- 1 cup Chocolate milk
- 1 slice toast + 1Tbs nut butter + ½ banana
- Smoothie: 1cup milk+ 1 frozen banana + 1Tbs nut butter + 1 handful spinach + 1 scoop protein powder



LET'S KEEP TALKING FOOD!



Scan to QR to go to my website, sign up for my monthly newsletter and get free nutrition tips, follow me on social, and more....

... QUESTIONS??

