

ATHLETE'S PLATE

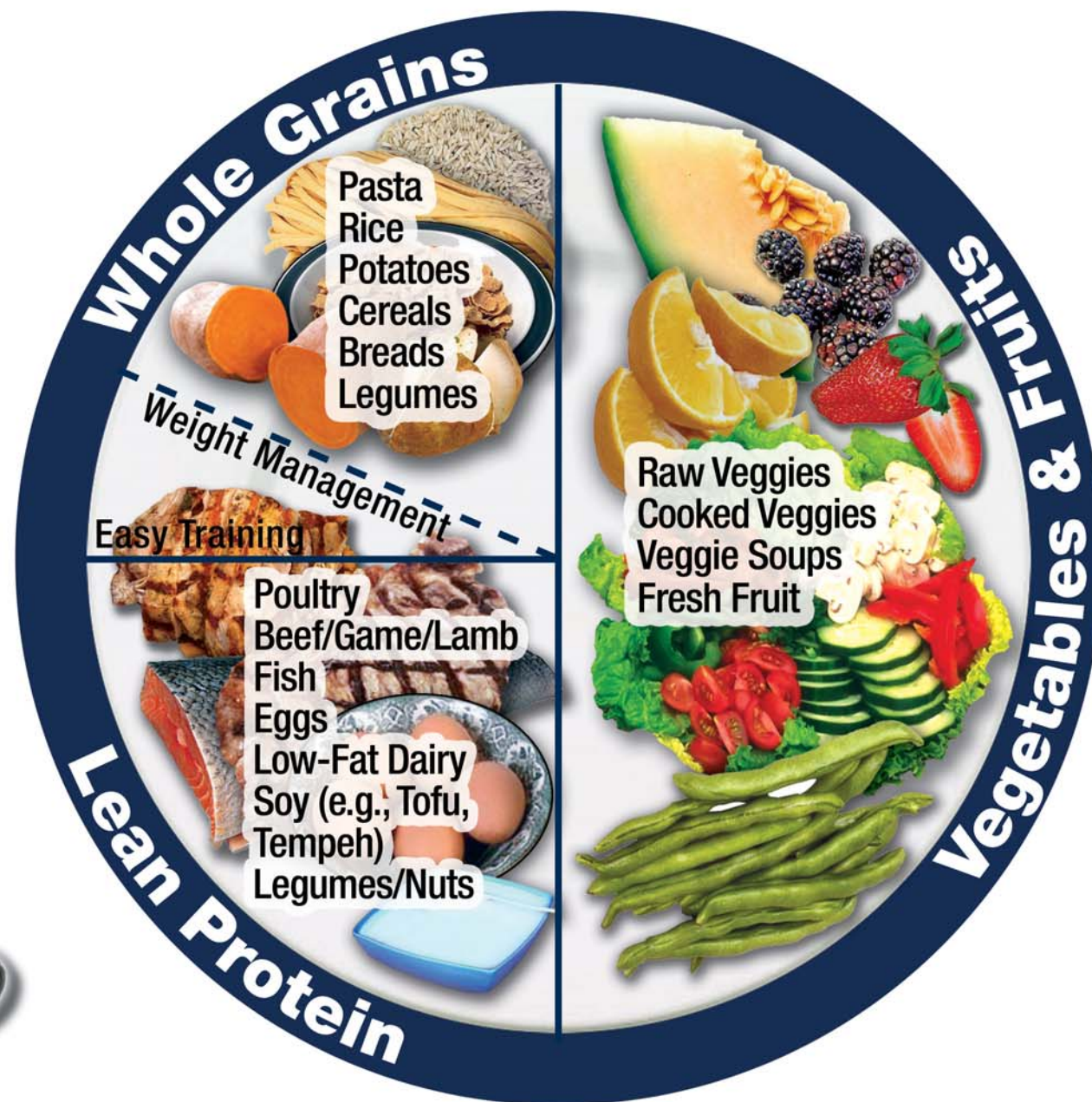
EASY TRAINING / WEIGHT MANAGEMENT:

FATS

1 Teaspoon



Avocado
Oils
Nuts
Seeds
Cheese
Butter



FLAVORS

Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup



ATHLETE'S PLATE

Training volume and intensity vary from day to day and week to week along your training/competition plan. Eating your meals and fueling your workout or race should also be cycled according to how hard or easy it is. Consult with your sport dietitian to put the Athlete's Plate into practice!

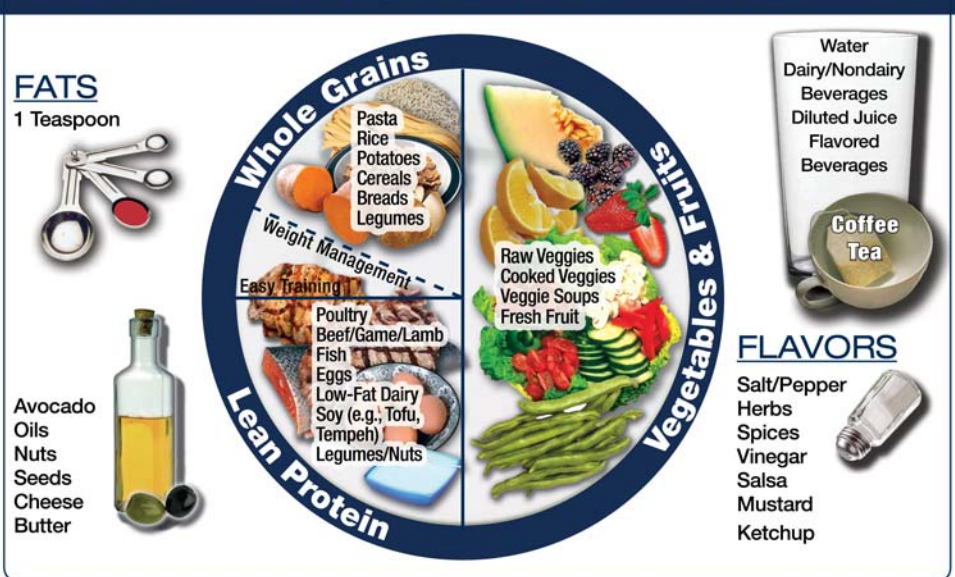
The Athlete's Plates are tools for you to better adjust your eating to the physical demands of your sport!

EASY An easy day may contain just an easy workout or tapering without the need to load up for competition with energy and nutrients. Easy day meals may also apply to athletes trying to lose weight and athletes in sports requiring less energy (calories) due to the nature of their sport.

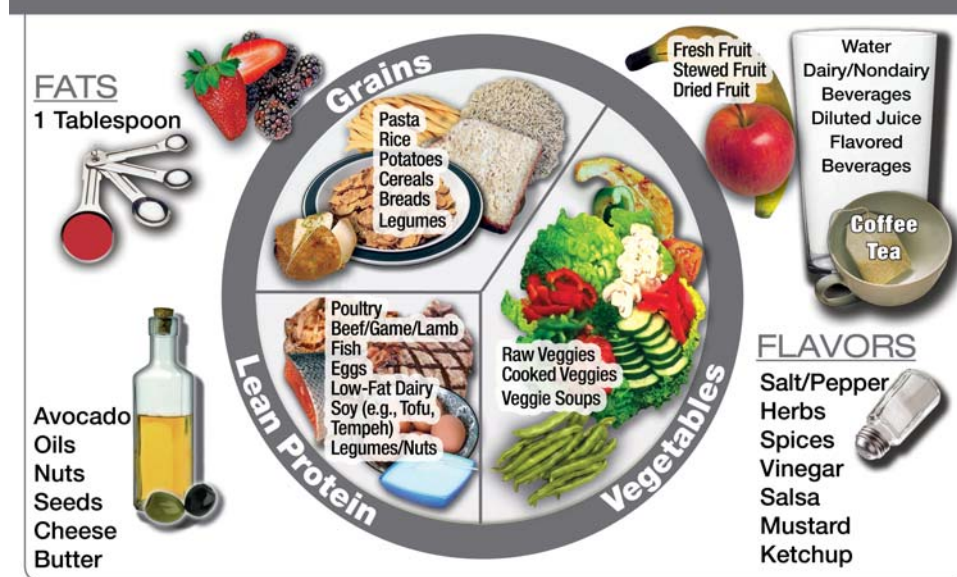
MODERATE A moderate day may be one where you train twice but focus on technical skill in one workout and on endurance or strength in the other. The moderate day should be your baseline from where you adjust your plate down (easy) or up (hard/race).

HARD A hard day contains at least 2 workouts that are relatively hard or competition. If your competition requires extra fuel from carbohydrates, use this plate to load up in the days before, throughout, and after the event day.

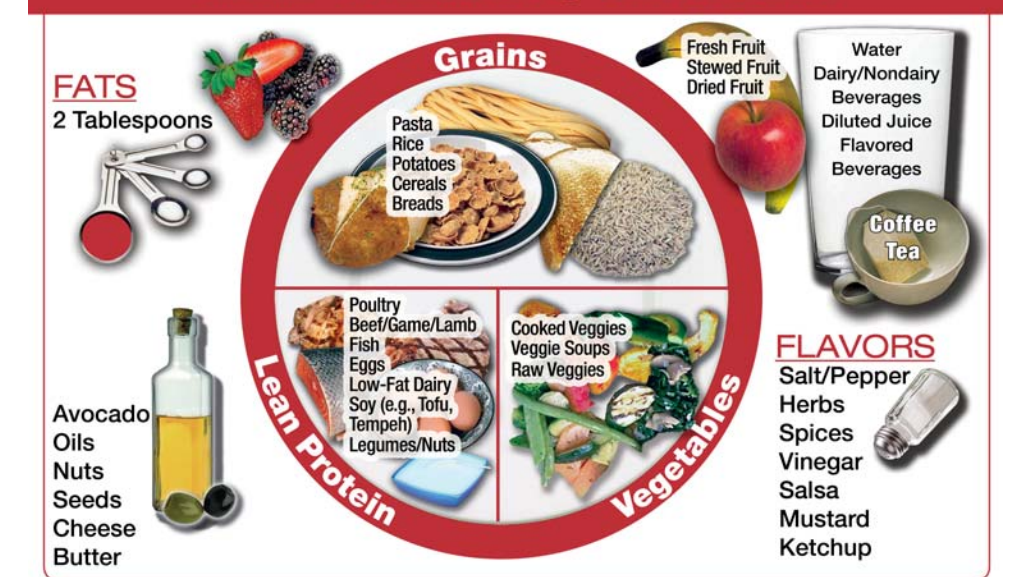
EASY TRAINING / WEIGHT MANAGEMENT:



MODERATE TRAINING:



HARD TRAINING / RACE DAY:

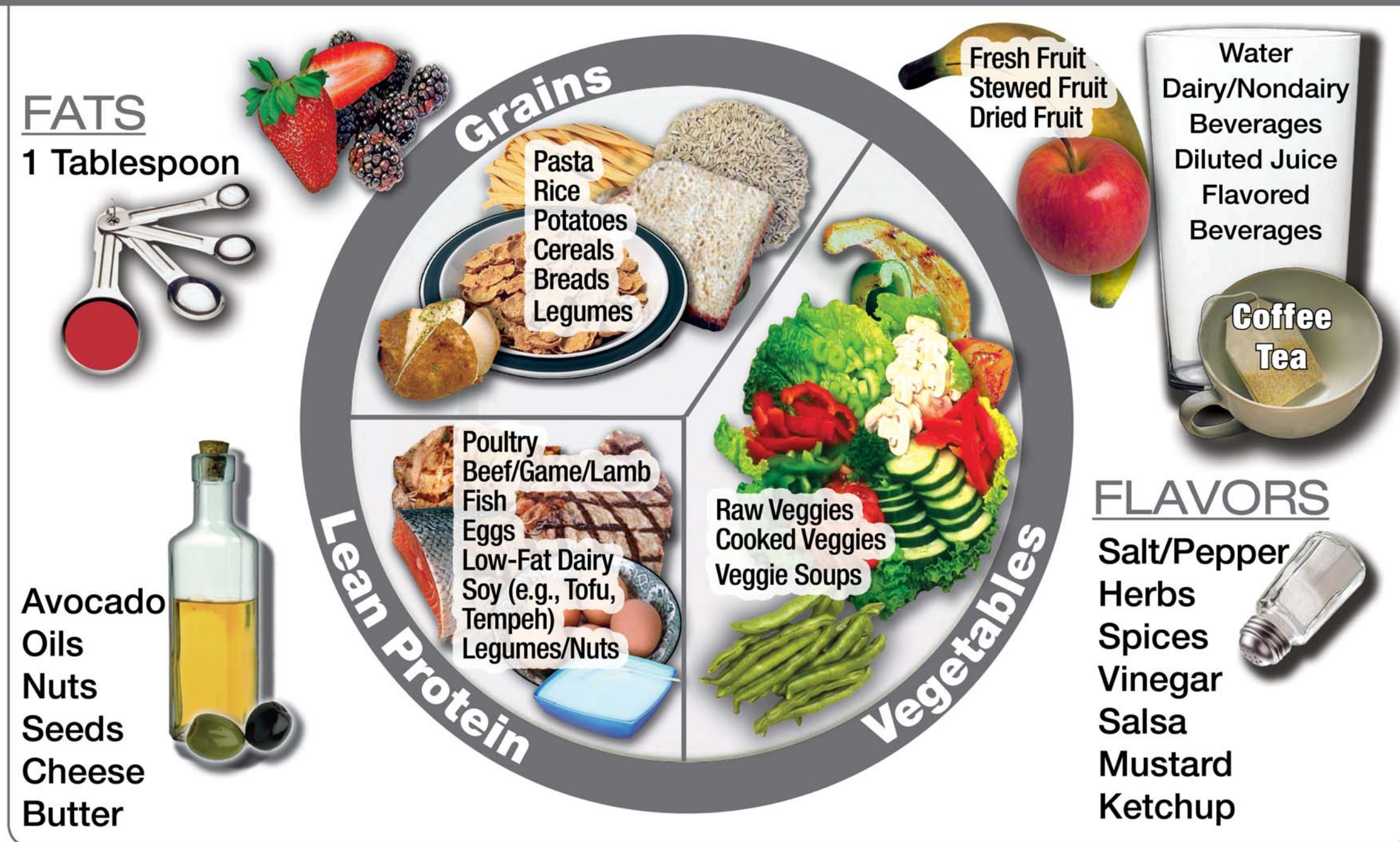


The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

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MODERATE TRAINING:



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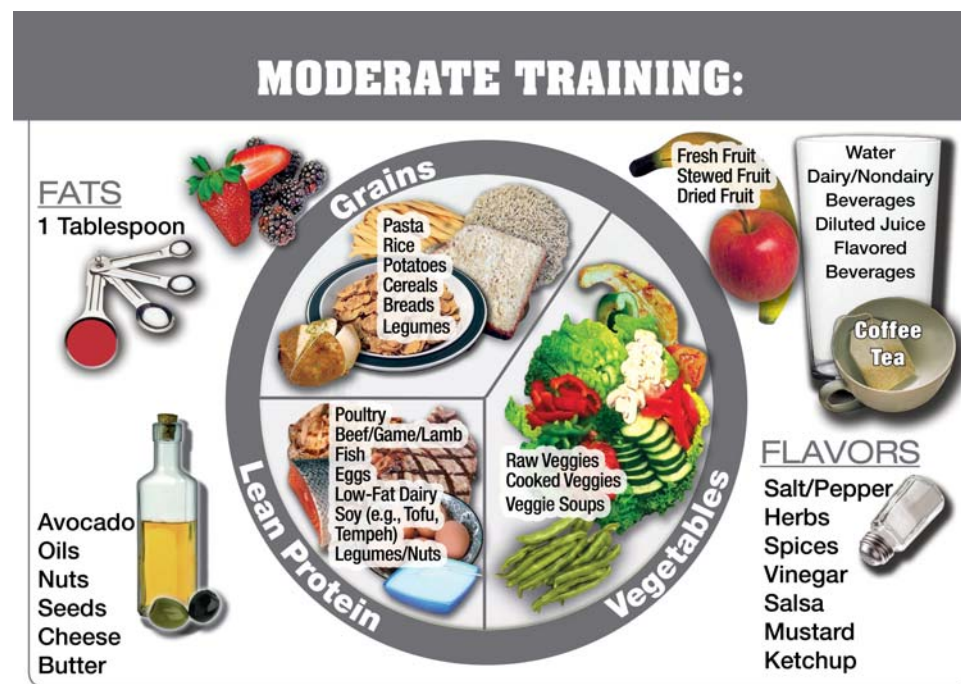
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HARD TRAINING / RACE DAY:

FATS
2 Tablespoons

Grains
Pasta
Rice
Potatoes
Cereals
Breads

Lean Protein
Poultry
Beef/Game/Lamb
Fish
Eggs
Low-Fat Dairy
Soy (e.g., Tofu, Tempeh)
Legumes/Nuts

Vegetables
Cooked Veggies
Veggie Soups
Raw Veggies

Fresh Fruit
Stewed Fruit
Dried Fruit

Water
Dairy/Nondairy
Beverages
Diluted Juice
Flavored
Beverages

Coffee
Tea

FLAVORS
Salt/Pepper
Herbs
Spices
Vinegar
Salsa
Mustard
Ketchup

Avocado
Oils
Nuts
Seeds
Cheese
Butter

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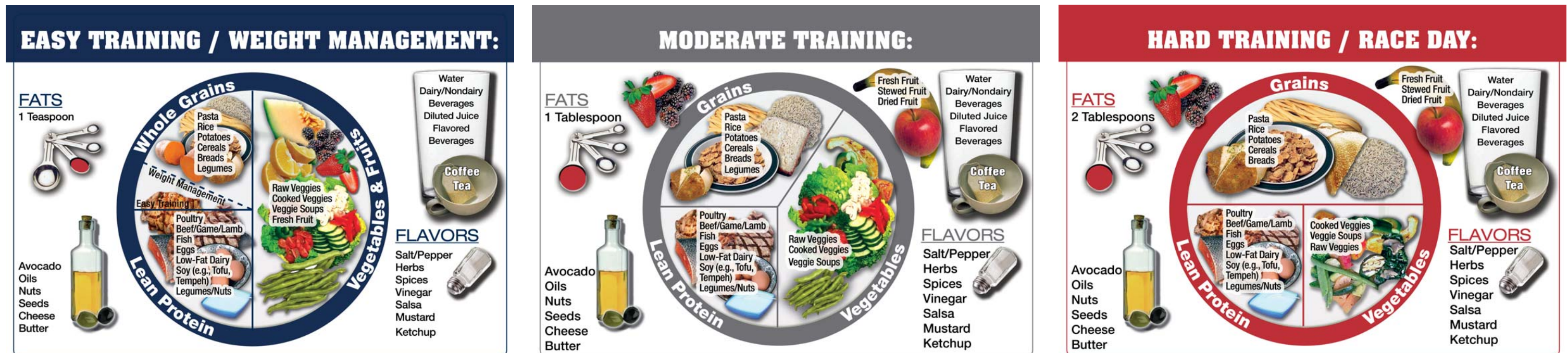
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THE UNITED STATES OLYMPIC COMMITTEE

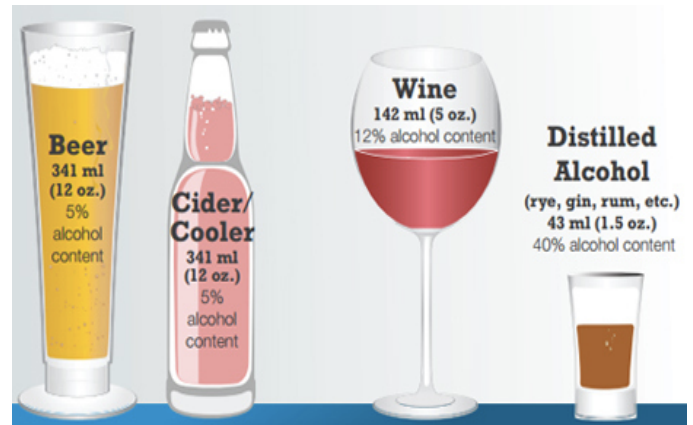
Alcohol and the Athlete

Alcohol impairs athletic performance mentally and physically, extending beyond the night of drinking. Understanding the consequences of excessive drinking and being mindful of your alcohol consumption can help keep you and your teammates healthy, happy, and safe!

How does it affect performance?

Alcohol impairs your ability to regulate body temperature and acts as a diuretic, leading to dehydration. In combination with the effects listed below, research has shown that “binge” drinking alcohol can decrease performance by as much as 11.4% the day after drinking. The negative effects of alcohol consumption on performance can last for up to 72 hours!

- **In the brain**, it impairs motor skills like balance, coordination, and reaction time.
- **In muscle**, it impairs blood flow, reducing muscle strength. The prevalence of musculoskeletal injury is 30% higher in athletes who drink versus those who do not.
- **In the liver**, all processes shut down to prioritize alcohol metabolism. This causes low blood sugar and impairs the use of fat as fuel, inhibiting positive training adaptations.
- **In the heart**, it disturbs cardiovascular function (especially during a hangover),



How much is too much?

- Women: >2 drinks per day
- Men: >3 drinks per day
- Excessive or “binge” drinking = >2 drinks in 2 hrs

There is NO BENEFICIAL EFFECT of alcohol on sport performance. It is best to avoid alcohol within 48 hours of training or competition.

- increasing heart rate, perceived exertion, and blood pressure while decreasing the ability of the heart to pump blood to other parts of the body.
- **Hormonally**, testosterone decreases and estrogen increases, causing fluid retention and fat deposition that can lead to weight gain. Low testosterone also impairs the ability to increase muscle mass and strength.
- **Sleep** quality is compromised. Alcohol disturbs deep sleep cycles, which inhibits muscular repair and synthesis in addition to new skill acquisition.

Be Smart and Sensible if You Decide to Drink

- **Plan in advance:** Think about where you're going, who you're with, and training schedule tomorrow.
- **Save it for special occasions:** Drink when eating out rather than at home.
- **Eat before or while you are drinking:** Eating slows alcohol absorption and the rate of drinking. It is also essential for recovery and replenishment of muscle energy stores after training or competition.
- **Pace yourself:** Space out alcoholic drinks with non-alcoholic drinks in between; this slows consumption and assists with hydration status (especially post training or competition the same day).
- **Select low alcohol drinks:** Choose lower alcohol beers such as pilsner or light beer; have spirits mixed with juice or soda water and ask for it in a "tall glass" with just one shot.
- **Keep yourself busy:** If you're occupied, you tend to drink less. Dance, play pool or other games; try not to just sit around and drink.
- **NEVER, EVER, EVER DRINK AND DRIVE!!!** Do not wait until the end of the night; designate a non-drinking driver before leaving the house, or take a taxi.
- **Remember all alcoholic beverages contain calories.** Limit servings to avoid consuming empty calories.

COMMON DRINKS	CALORIES
Long Island Regular Coke (8 oz)	780
Long Island Diet Coke (8 oz)	740
Pina Colada (6 oz)	380
Mai Tai (4.5 oz)	350
Margarita (8 oz)	280
Daiquiri (6 oz)	240
Mojito (8 oz)	220
Red bull & Vodka (10 oz)	210
Jager Bomb (5 oz)	210
Vodka Tonic (8 oz)	200
Hard Cider (12 oz)	190
Rum & Coke (8 oz)	185
Martini (2.5 oz)	160
Regular Beer 5% alcohol (12 oz)	140
Red Wine (5 oz)	125
White Wine (5 oz)	120
Light Beer 4.2% alcohol (12 oz)	110
Vodka or Tequila Shot (1.5 oz)	105
Sugar Free Red Bull & Vodka (10 oz)	105
Vodka Soda (8 oz)	105
1 Shot of 80 proof alcohol (1.5 oz)	100

If I drink alcohol, I usually have:

drinks per night: _____

nights per week/month: _____

Estimated calories: _____

Athlete Recommendations:

*Serving sizes, and therefore calorie counts, may vary based on the establishment.





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Altitude and the Body

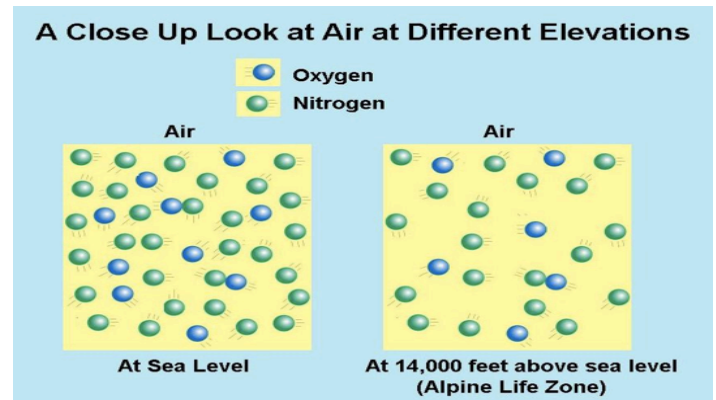
At higher elevations (defined as >5,000 feet), oxygen molecules are more spread out than they are at sea level. As a result, you inhale and deliver less oxygen to working tissues per breath of air. This causes a cascade of events and takes time for the body to adapt to the new conditions. It decreases performance significantly at first, but over time altitude training can be beneficial for athletes if they are competing in areas of high elevation or striving for specific training adaptations.

Over a period of time (depending on the person and the elevation), the body adapts to lower levels of oxygen by using less oxygen for the same amount of work. Altitude training also improves performance at sea level. This can be especially beneficial for endurance sports, high intensity team sports, and anaerobic sports like track sprinting or mogul skiing, especially if they compete at altitude.

Effects of Altitude Exposure

Initial Effects (within the first 72 hours)

- ↑ Iron needs
- ↓ Restful sleep (breathing pattern changes)
- ↑ Risk of dehydration (frequent urination)
- ↑ Headaches
- ↑ Reliance on stored carbohydrate (glycogen)
- ↑ Resting metabolism and ↓ appetite (weight loss)
- ↑ Adaptive pro- and anti-inflammatory responses



Key Points

Be prepared for the additional stress altitude can place on the body before traveling to or competing at altitude. Make sure to:

1. Be well rested and healthy (no cold or flu).
2. Know iron status and treat if iron deficient.
3. Eat enough calories and carbohydrates to support the additional stress of altitude.
4. Effectively manage training load by minimizing high intensity training in the first few days at altitude.

Effects of Acclimatization

Following 2-3 weeks training at altitude

- ↑ Oxygen-carrying capacity of blood
- ↑ Efficiency of oxygen utilization in muscles
- ↑ Formation of new blood vessels
- ↑ pH regulation = ↑ exercise tolerance
- ↓ Heart rate
- ↑ Red blood cell volume for 10-14 days after leaving altitude



“Sleep High, Train Low”

This method of altitude training can be done by:

1. Living at lower elevations and sleeping in an altitude-simulating chamber or tent
2. Living at a high elevation, but traveling to sea level to train
3. Living at a high elevation, but using supplemental oxygen when training

Training at altitude limits the ability to perform high-intensity exercise, even when acclimated, which is why athletes tend to “sleep high” (to adapt to lower a oxygen concentration) but “train low” (to perform at a higher intensity).

Adapting to Altitude

The higher the altitude, the longer it will take to adapt. Evidence suggests that 97.5% of athletes are likely to benefit after 2 to 3 weeks of altitude exposure **if they are healthy, not overly tired, and not iron deficient before arriving**. Since energy needs increase, eat slightly more calories and carbohydrate to avoid weight loss (e.g. an extra snack or a little extra food at main meals). Using altitude training to deliberately lose weight is not recommended since it will interfere with the body’s ability to adapt effectively, and can compromise health. When acclimatizing, increase the training stimulus progressively. The last few days should be the hardest workouts!

Preparation Strategies for Travel to Altitude

1. Hydration

- Drink regularly throughout the day, in training, and in competition. Don’t wait until thirsty.
- Check morning urine color and body weight as well as bathroom frequency to monitor status.

2. Iron status

- Increase intake of lean beef, eggs, oysters, lean pork, tuna, lentils, beans, tofu, and fortified cereal.
- Get a blood test at least 6 weeks before leaving for altitude training to allow time to correct any existing deficiency. Particularly important for vegetarians and those with a history of iron deficiency.

3. Immune health

- Eat a variety of colorful fruits and vegetables (red, orange, yellow, green, purple, blue, white).

4. Metabolism

- Focus on eating 3 balanced meals and 2-3 protein-containing snacks per day.
- Consider adding a few extra servings of carbohydrate to your usual dietary intake.

5. Sleep

- Have a plan in place to prevent sleepless nights. For ideas, see a sport psychologist.
- Foods that may enhance sleep: tart cherry juice, herbal teas, lean meats, whole grains, nuts.
- Foods that negatively affect sleep: caffeine, alcohol, fried food, high-calorie meals close to bedtime.

Athlete Recommendations:



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Caffeine and the Body

Caffeine is the most widely accepted and commonly consumed drug in the world. Caffeine activates receptors in the brain and body that counteract many of the inhibitory effects fatigue has on mental and physical performance. It is now widely considered an “ergogenic aid”, or something that enhances performance. The NCAA is the only organization that restricts the amount of caffeine in an athlete’s system by limiting urine concentrations to 15 ug/mL, which equates to ~500mg caffeine or ~6 to 8 cups of coffee 2 to 3 hours before an event.



It's important to understand that every athlete responds differently to varying amounts of caffeine, so dosing for performance should be done gradually and tested in training before use during competitions. Low doses of caffeine ($\leq 3\text{mg/kg}$ of body weight or $\sim 200\text{mg}$) have been shown to be ergogenic for a number of sports, and also carry less risk of side effects.

Caffeine and Sport Performance

Positive Effects of Caffeine:

- Enhances endurance exercise performance
- Improves reaction time, concentration, and self-perceived energy levels
- Low doses increase energy expenditure and oxygen uptake without changing perceived effort, exercising heart rate, or fuel usage
- Delays feelings of fatigue, and lessens sensations of exertion and pain
- Reduces time to complete a set amount of work

** Positive effects can improve endurance (e.g. triathlon), team (e.g. rugby, soccer), “stop-and-go” (e.g. golf, archery), and short-term, high-intensity sport performance (e.g. rowing, sprinting).*

Possible Side Effects of Caffeine:

- Anxiety / nervousness
- Overstimulation / jitteriness
- Mental confusion
- Elevated resting heart rate
- Restlessness
- Inability to focus
- Gastric irritant
- Mild diuretic
- Insomnia / disrupted sleep
- Addiction (from overuse and reliance)

** Side effects can inhibit performance in technical sports and those with evening competitions if dose or timing is inappropriate.*

Strategies for Using Caffeine

Follow these guidelines to safely incorporate caffeine into training and competition with the help of a sport dietitian. It is not necessary to limit caffeine consumption leading up to a competition in order to gain a performance benefit. Remember that caffeine is not a substitute for food, which provides energy from fat, carbohydrate, and protein. Caffeine should never be used as an alternative for insufficient fueling and recovery!

- **Timing**

- Consume ~1 hour before training or competition.
- For exercise lasting longer than 2 hours, it may be helpful to “top up” with another low dose of caffeine. Low doses (80-120mg) during prolonged exercise can be beneficial, even without having any before.

- **Amount**

- Tolerance is highly individualized, but 1-3 mg/kg is usually recommended.
- For example, recommendations for a 50 kg (110 lb.) female would be between 50mg - 150mg.

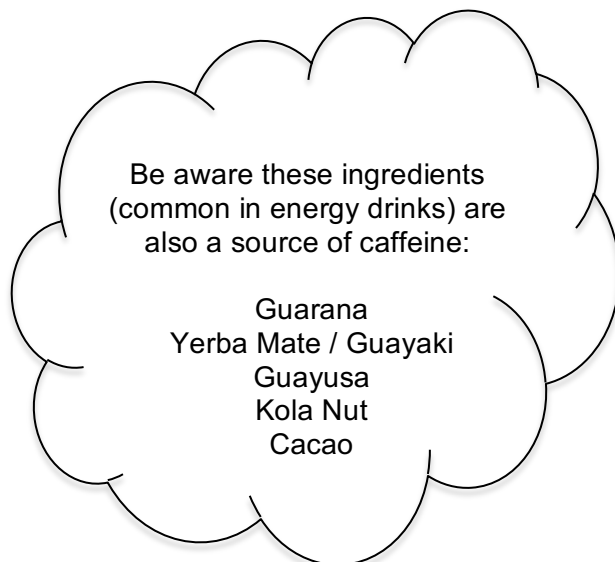
- **Type**

- Test different sources of caffeine in training to determine what is most effective (coffee, pills, gels).
- **Avoid using energy drinks** as they typically contain high concentrations of caffeine along with other stimulants that could be derivatives of banned substances (e.g. geranium, ma huang).

Caffeine Content of Common Items

Product	Caffeine (mg)
Energy Gels/Gummies	20-150
Caffeinated Soda (e.g. Cola, Diet Cola)	35-115
Caffeine Pills	100-200
Bottled Coffee (Pre-made)	75-200
Migraine Headache Medication	130
Brewed Coffee (8 oz.)	60-150+
Espresso Shot (1 oz.)	60-200+
Black Tea (8 oz.)	42-110+
Green Tea (8 oz.)	15-50+
Milk Chocolate Bar (3.5 oz.)	12

**Many of these items have wide variations in caffeine content due to preparation methods, even in the same restaurant (e.g. coffee, espresso, tea).*



Athlete Recommendations:



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What is a dietary supplement?

A dietary supplement is a pill, capsule, tablet, powder, liquid or other food form intended to supplement a whole food diet by providing any combination of the following:

- Vitamins
- Minerals
- Amino acids
- Herbs and botanicals (leaves, bark, stems, berries, roots, seed of plants)

Sports supplements are a classification of dietary supplements, often designed to have an “ergogenic benefit” by increasing nutrient intake, lean mass, energy levels, or recovery.



Athletes must always remember that the use of any dietary supplement is at their own risk. YOU are responsible and accountable for any supplements that you take.

What to keep in mind when choosing to take a supplement?

Dietary supplements are not regulated by the Federal Drug Administration (FDA), creating concerns about purity, safety and efficacy. Supplements may contain banned substances even if unlisted on the label or ingredients may adversely interact with medication. Common ingredients in sport supplements (e.g. stimulants, amino acids) increase the risk of contamination with harmful or banned substances. To protect yourself from a positive drug test, leaving yourself ineligible for competition choose **food first** or select supplements with a Third Party Testing certification (*see below*).

Dietary supplements do have a purpose...






- They may help improve nutrient deficiencies (as identified by a diet assessment and/or blood analysis) to a greater degree than food sources
- They may help to increase intake of essential nutrients, after improvements in dietary sources have already been made
- They may offer necessary or efficient nutrient delivery when food sources are limited

Educate yourself before making decisions (www.USADA.org)

- There is a variable level of risk associated with supplement use. Vitamins and minerals produced by reputable pharmaceutical companies especially those tested by a 3rd party organization are less likely to be associated with inadvertent drug tests, but there is no guarantee.
- Follow a dietary plan that allows you to adapt to training to maximize your performance. Dietary alterations may replace the need for any particular supplement.
- Consult with a Sport Dietitian or professional who is familiar with the WADA Prohibited List before taking supplements.
- Be aware, supplements which claim fat burning/weight loss and pre-workout mixtures are more likely to be contaminated with anabolic steroids, stimulants, and other contaminants. Always remember that there are no quick fixes for improving sports performance.
- Do not take a supplement just because a teammate or a competitor is taking it or recommends it.
- Do not take any supplements that make claims that sound too good to be true. Always validate product claims through non-biased sources.

Common Third Party Testing Groups and Their Testing Measures

Third party testing groups are companies that conduct various levels of screening to promote safety and reduce your risk for testing positive for prohibited substances (listed on the WADA Prohibited List). A dietary supplement should be tested for **WADA Prohibited Banned Substances** for it to be considered for use. However, just because a product is tested, does not mean it is appropriate for use in all circumstances. Third party groups have varying levels of detection and numbers of substances or analytes that they test for in each product.

Measures					
Random GMP Audits	✓	✓	✓	✓	✓
ISO 17025 Certified Lab		✓	✓	✓	✓
# of Screened WADA Banned Substances			274+	200+	270+
Toxicology Assessment	✓	✓	✓	✓	✓
Testing of Raw Materials	✓	✓	✓	✓	✓
Label Verification	✓	✓	random		✓

* Analytes are varying forms of the same ingredient that act in the same way

Athlete Recommendations:



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What is Fiber?

Fiber is a dietary substance that helps keep food moving efficiently throughout the body and is an important part of a healthy diet. Fiber treats and prevents constipation, increases satiety to help control weight, and decreases blood cholesterol levels. Fiber also optimizes immunity by acting as a prebiotic and keeping the good gut bacteria healthy. Fiber is found in whole grains, beans, fruits, and vegetables.

Consuming fiber from a variety of sources is suggested to gain the maximum benefit from your meals.

Soluble and Insoluble Fiber Are Undigested

Instead of being used for energy, they pass through the gastrointestinal tract and are excreted from the body.

Soluble fiber forms a gel when mixed with water. It helps reduce overall cholesterol levels and promotes gut health through fermentation and gas production. May also decrease loose stools (diarrhea).

Food Sources: oatmeal, oat bran, nuts, legumes, fruits, veggies, and psyllium husk.

Insoluble fiber passes through the intestines largely intact. It is considered “roughage” and adds bulk to waste in the digestive system and helps prevent constipation.

Food Sources: wheat bran, seeds, nuts, fruit and veggie skins, and leafy veggies.



Tips to Increase Fiber in Meals and Snacks

- Meet daily fiber needs by eating 2 cups of fruit and 2 ½ cups of vegetables with the skin left intact.
- Add whole grains, beans, legumes, and vegetables to stews and casseroles.
- Add oats to cookies and bread.
- Add fruit to cereal and salads or eat as a snack with nuts or nut butter.
- Choose cereals and granola with at least 3 grams of fiber per serving. Bran cereals are especially high in fiber, but go easy if you don't usually eat them to avoid stomach distress.
- Increase fiber intake during long flights and take higher fiber options with you when you travel to destinations with less access to fruits, veggies, and whole grains.

Low Residue and Low Fiber Diets

- If not used to eating fiber-rich foods before competition, limit the amount of fiber consumed 2-3 days before event.
- Low fiber diets can be used as an acute weight loss strategy (2-3 days before weigh-ins for competition) to decrease the weight of bowel contents.

How much Fiber?

The Daily Recommended Intake (DRI):

Females (18-50 years old) = 25 g/d

Males (18-50 years old) = 38 g/d

Signs of Inadequate Fiber Intake

- Constipation or less than 3 bowel movements per week
- Frequent hunger or poor satiety
- Blood sugar fluctuations

Signs of Excessive Fiber Intake

- Abdominal issues such as bloating, gas, and cramping
- Poor mineral absorption (i.e. iron, zinc, magnesium, calcium)
- Constipation and diarrhea

Fiber Rich Meals

Breakfast: breakfast tacos with 1/3 c black beans,

1/2 sweet potato, 1/2 c spinach, and 3 eggs (8 g)

Snack: 1 cup raspberries and Greek yogurt (8 g)

Lunch: turkey with 1/4 avocado sandwich on whole grain bread, side salad and apple (16 g)

Snack: mango and pineapple smoothie (4 g)

Dinner: Grilled salmon and 1 cup roasted veggies with 1 cup brown rice (8 g)

Athlete Recommendations:

Increasing Fiber Intake

Ease into eating more fiber slowly.

If you are not meeting the recommended intake, add no more than 5 grams of fiber every 3 days for 6 to 8 weeks to avoid gastrointestinal issues like gas and bloating. **Drink plenty of water** to help move high-fiber foods through the digestive system as intake increases.

Soluble fiber often causes gas, while insoluble fiber helps food move out more quickly, allowing for less gas potential. If experiencing bloating, switch out soluble fiber for insoluble fiber.

Top Fiber-Rich Foods

Food Sources of Soluble Fiber	Total Fiber (g)
Navy Beans – 1 cup	19
Lentils – 1 cup	16
Black Beans – 1 cup	15
Lima Beans – 1 cup	14
Kidney or garbanzo beans – 1 cup	12
Oat Bran, raw – 1 ounce	12
Blackberries – 1 cup	8
Brussel sprouts, cooked – 1 cup	6
Prunes, dried – 1/2 cup	6
Pear – 1 medium	6
Green Peas – 1 cup	5
Old fashioned oats – 1/2 cup	4
Food Sources of Insoluble Fiber	Total Fiber (g)
Wheat bran, raw – 1 ounce	12
All-bran cereal – 1 cup	10
Acorn Squash, cooked – 1 cup	9
Flaxseed – 1 ounce	8
Raspberries -- 1 cup	8
Quinoa, cooked – 1 cup	5
Sweet potato, 1 medium	4
Spinach, cooked – 1 cup	4
Almonds – 1 ounce	4
Popcorn, air popped – 3 cups	4



USOC
SPORTS NUTRITION

**FUELING BEFORE
COMPETITION**

THE UNITED STATES OLYMPIC COMMITTEE

Fueling Before Competition

Athletes need to consume adequate carbohydrates to optimize carbohydrate stores (glycogen) in the liver and muscle. This helps maintain blood sugar levels and fuels muscle contraction. Insufficient carbohydrate intake decreases the ability to sustain heavy loads, mood state, mental acuity, and power output during intermittent high intensity performance, and has the potential to negatively influence immune function.

During sleep, carbohydrate stores in the liver are being used to maintain blood sugar levels, leaving glycogen stores low upon waking. Fueling and hydrating before competition are essential to replenishing energy stores and optimizing hydration status.

Not accustomed to eating early?

- Athletes can train the stomach to tolerate food before competition
- Practice introducing foods during training in the weeks prior to competition to see how they will be tolerated
- Start with easily digestible foods like toast or a banana and gradually add additional foods over time
- If solid foods are not tolerated, try a liquid snack or meal, such as a sports drink or smoothie



Develop a Fueling Plan

A fueling plan needs to be individualized and depends on...

- Duration
- Intensity
- Type of competition
- Ability to consume additional fuel during the competition
- Previous day's intake

TIP: Practice your fueling plan during training before utilizing it during competition

A good RULE OF THUMB is to avoid trying anything new on the day of competition!



Fueling Strategies for Competition

Feel comfortable • Top off fluids – start hydrated • Top off carbohydrates for brain and muscle

Days Leading up to Competition

- If taper in training, consider small reduction in energy intake
- No need to carb load unless competition duration is > 2-3 hr; make sure carbohydrate intake is adequate at each meal and snack
- Consider reducing fiber intake if bowel function becomes an issue during competition
- Maintain adequate hydration levels
- No “special” meal required, stick to familiar foods and fluids
- Be mindful of food safety and only eat foods from trusted sources and restaurants
- Sleeping at altitude or in a hot environment may increase the risk for dehydration; increase fluid intake upon waking to top off fluid stores

Caffeine

If using any performance enhancing aids (e.g. caffeine), make sure you are aware of the effects and potential side effects. Every athlete responds differently to varying amounts of caffeine, so dosing for performance should be done gradually and tested in training before use during competitions.

Refer to our Caffeine Fact Sheet for more information on timing and dosing.

Day of Competition

- Choose familiar foods trialed during training
- Eat a balanced meal **3-4 hours** before or a smaller meal/larger snack **2 hours** before
 - Adding protein to your meal can help delay the onset of hunger during competition
 - If you eat a meal 3-4 hours before competition, then top up on familiar and easily digestible carbohydrates within **15-60 minutes** of competing, such as a sports drink, carbohydrate chews/gel, fruit, or a cereal bar
- Foods higher in fat and fiber slow digestion and may cause stomach distress if consumed too close to competition
 - Spicy or acidic foods eaten close to competition may also lead to indigestion and heartburn
- Ensure fueling plan is adaptable to different competition times and food availability / travel
- Athletes who are particularly nervous before competition may prefer to consume a meal or snack in liquid form rather than solid
- Maintain adequate hydration in the 24 hours prior to competition and sip on fluids leading up to competition

Athlete Recommendations:

Fueling Plan Examples

Olympic Triathlon Early Morning Race	
Saturday	
7:00 pm Dinner	4 oz salmon 1-1.5 cups couscous 1 cup grilled veggies 8 oz water
Sunday	
4:00 am Awake	
4:30 am Breakfast	1 cup oatmeal 1 Tbsp peanut butter 1 banana 6 oz greek yogurt 8-16 oz water
6:30 am	carb gel/chews, water
7:00 am Race Start	
7:30 am	carb gel/chews, water
8:30 am	sports drink, water
9:00 am	sports drink, water
9:30 am	water & recovery
Finished!	

Volleyball Afternoon Match	
7:00 am Awake	
7:30 am Breakfast	3 scrambled eggs 2 pieces whole wheat toast 2 Tbsp peanut butter, honey 1 cup strawberries 8-16 oz water
11:00 am Lunch	turkey sandwich 12 baby carrots, hummus 1 cup pretzels 6 oz greek yogurt 8 oz milk, 8-16 oz water
1:30 pm Snack	1 banana or granola bar 8-16 oz water
2:00 pm Match Start	
2:00 – 4:00 pm Fueling	16-32 oz sports drink, water OR 16-32 oz water, gel/chews
4:00 pm Finished!	water & recovery

Special Considerations by Sport

Continuous Endurance – cycling, triathlon, distance running, distance swimming, cross-country skiing, biathlon

- If eating breakfast 3-4 hours before morning competition is not possible, eat a carbohydrate-rich dinner the night before and a light breakfast
- The aggressiveness of fueling before competition depends on the ability to ingest additional carbohydrate during the event
- Fueling during the event should be addressed

Intermittent High Intensity, Team Sports –

volleyball, basketball, hockey, water polo, soccer

- If the competition is in the afternoon or evening, eat balanced meals leading up to competition
 - Top up with water and a carbohydrate-rich snack before the game

Long Duration, Low Intensity, Technical – archery, shooting, curling

- Eat a balanced meal 3-4 hours before competition
- Choose small carbohydrate-based snacks and water during competition

Multiple Short Duration, High Intensity Events –

track & field, swimming & diving, alpine skiing, snowboarding, rugby 7s

- Refueling between events is key to perform repeatedly throughout the same day

Combat Sports – boxing, judo, taekwondo, wrestling

- After weigh ins replenish fluid and glycogen stores before competing
- Consume sport drinks and small, high carb meals between events
- Add salt to foods in the evening to ensure adequate replenishment of fluid and electrolytes



Multi-Event Fueling Plan Examples

Swim Races – AM Preliminaries & PM Finals	
Saturday evening	
7:00 pm Dinner	4 oz chicken 1-1.5 cups whole grain pasta 1 cup roasted veggies 8 oz water
Sunday	
4:00 am Awake	
4:30 am Breakfast	1 bagel 1 Tbsp peanut butter 1 orange 6 oz cottage cheese 8-16 oz water
6:30 am	carb gel/chews, water
7:00 am 200 m Prelims Race Start	
7:30 am 2nd Breakfast (Recovery)	fruit smoothie (water, greek yogurt, spinach, frozen pineapple & mango)
9:30 am Snack	bar or banana
11:00-11:30 am Lunch	1-2 cups brown rice 4-6 oz chicken 1 cup veggies 16 oz water
12:00 – 2:00 pm	water, sports drink
3:00 pm 200 m Finals Race Start	
3:30 pm Finished!	water & recovery

Freestyle Wrestler – 74 kg Athlete	
Friday	
Note: Avoid high fiber foods and if you can tolerate more food than below, go for it!	
2:00 pm Weigh In	
Step Off Scale	8 oz Pedialyte
Next 30 minutes	5-8 salty crackers, 12-24 oz sports drink (add in pinch of salt) - sip
1-2 hours post weigh in	1-2 bananas or plain bagel with jam or honey 12-24 oz sports drink - sip
Dinner	1.5-2 cups whole grain pasta 3 oz lean ground turkey, marinara 12-24 oz sports drink - sip
After Dinner	8 oz chocolate milk or granola bar or fruit 12-24 oz sports drink - sip <i>*Be sure to urinate before going to bed!</i>
Saturday Matches	
Wake up	12-24 oz sports drink and water <i>*Check urine color</i>
Breakfast	2 packets oatmeal 1 Tbsp honey 2-3 hardboiled eggs 8 oz Pedialyte
Between Matches	Follow 'Fueling Between Events' Urine color should be light
9:00 am 1st Match	
9:15 am	12-16 oz sports drink
10:00 am 2nd Match	
Large snack	PB&J sandwich banana low fat fruit greek yogurt
1:15 pm Finished!	water & recovery

Fueling Between Events

- If < 1hr, stick to fluids (e.g. water and sports drink)
- If 1-2 hr, small snack (e.g. ½-1 bar or banana) plus fluids
- If > 2 hr, more substantial snack with protein (e.g. sandwich, chocolate milk, fruit, yogurt)
- If 24 hr or more, good recovery snack then normal eating throughout rest of day





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Hydration and the Body

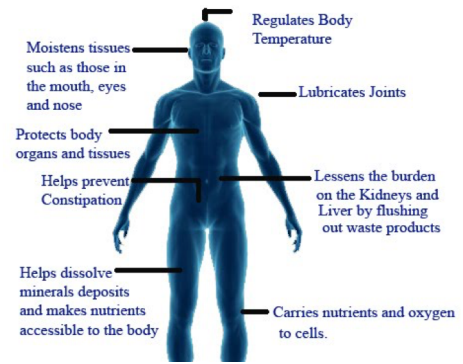
Hydrated cells are critical to get the most out of daily training and facilitate recovery. The effects of significant dehydration can take hours and even days to recover from. Athletes should develop strategies to monitor and adapt an individual hydration plan according to changes in:

- Intensity of training
- Duration of training
- Frequency of training
- Fitness level
- Environmental conditions (e.g. heat, altitude, plane travel, surgery, illness, hard training)

Performance can be negatively impacted by as little as 2 to 3% body weight loss from sweat (e.g. 3-4 lb. for 150 lb. athlete)

Signs and Symptoms of Dehydration

- Lack of concentration
- Early fatigue in training session
- High perceived exertion in training
- Trouble tolerating heat
- Delayed recovery
- Muscle cramps
- Headaches
- Nausea and vomiting
- Heart rate elevated above normal response



Importance of Hydration on Performance

- Enhances the body's ability to regulate temperature and cool efficiently while avoiding unnecessary elevation in heart rate
- Improves ability to recover quickly from training and competition
- Minimizes muscle cramps
- Enhances mental function, decision making, concentration, and motor control
- Supports effective immune defenses

Three Indicators of Dehydration

You are likely dehydrated if *two or more* of these markers are outside the normal range.

1. Color of morning urine (dark in color)
2. Waking body weight (lower than usual)
3. Thirst (greater than usual)

It can take up to 24 hours for the body to regain fluid balance after dehydration.

How much fluid is enough?

Fluid needs are very individual. These are general guidelines and a starting point.

When	How much
Before training	2-3 hours before: >16 oz. 15 minutes before: 8 oz.
During training	Enough to limit dehydration to <2% body weight loss
After training	16-24 oz. for every pound lost

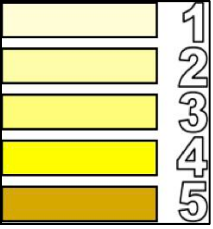
Drink Up! Fluid needs are higher during:

Heat	Travel
Humidity	Altitude
Hard training	Illness

Note: If you are a salty sweater, eat salty foods like pretzels and soup after training to help replace sodium losses.

Monitoring Daily Hydration Status

Use the urine color chart and aim for a morning urine color of 2 - 3 (pale yellow, lemonade color). Dehydration is indicated by a urine color of ≥ 4 .

	<1.009	Well-hydrated
	1.009-1.020	Hydrated
	1.021-1.025	Minimal dehydration
	1.026-1.030	Significant dehydration
	≥ 1.031	Severe dehydration

The color of urine is associated with urine specific gravity (USG). USG measures the concentration of particles in the urine with >1.020 indicating dehydration. USG should be assessed at the first morning urine void.

% Body Weight Loss Calculation

% Body weight loss = (wt before – wt after)/wt before

Ex: 2.6 % body weight loss = (150-146)/150

Goal is to drink more during to minimize weight loss

After training, drink ~8 cups (64 oz.) to replace fluid

Water vs. Sport Drinks

The best fluid to consume is *water*, which should be consumed throughout the day, during training, and at meal times.

If training is >60-90 minutes, choose a sport drink to help replenish fluids and electrolytes lost in sweat and provide a quick energy source to sustain performance during intense and longer duration training sessions.

Simple ways to increase fluid intake

- Carry a water bottle at all times to increase water consumption throughout the day
- Aim to drink at least 2 cups of water at all meals
- Fruit and veggies have high water contents
 - Snack on oranges, berries, melons, pineapple
 - Top a rice bowl with eggplant, bell peppers, zucchini, shredded carrots
- Make a fruit smoothie for breakfast or a snack
- Drink 8 oz. of 100% fruit juice for breakfast
- Begin lunch or dinner with veggie soup
- Drink a glass of milk after training or before bed
- Brew a cup of herbal tea in the evening

Athlete Recommendations:



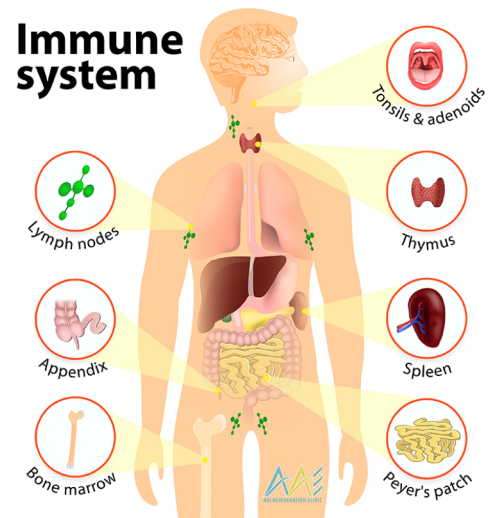
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The Immune System

The immune system is made up of a network of cells, tissues and organs that work together to protect the body. When foreign objects are identified by the immune system, white blood cells (leukocytes) are signaled to secrete antibodies that protect the body against infectious disease. The immune system also plays an important role in the inflammatory response resulting from injury to tissue. When injury occurs, cytokines are released to trigger several inflammatory mechanisms involved in the recovery and healing process. When the immune system is compromised or is less active than normal, there is a higher vulnerability for infective illnesses. This is called immunosuppression.

Signs and Symptoms of Immunosuppression

- Reoccurring or prolonged common infections, including upper respiratory tract infections, ear infections, and gastrointestinal distress due to infection
- Abnormal routine blood panels (white blood cells and other immune system blood markers)
- Inability to recover between training sessions
- Fatigue



When are athletes at risk?

- Exposure to frequent or extended travel
- During a period of high training volume and intensity without adequate recovery time
- Under extreme environmental stress (i.e. climate, altitude)
- Heightened exposure to pathogens (air-borne or blood-borne transmission, contaminated food or fluids)
- Insufficient blood cell counts (i.e. low platelet counts, anemia)
- Insufficient intake of food or fluid
- Inadequate sleep and poor recovery
- Anxiety or alterations in mood

Note: If you are experiencing any of the above signs and symptoms, or are concerned about your recovery response time, please contact your sports medicine physician or sport dietitian.

Immune Boosting Foods

Food Source	Benefit	Daily Recommendation
Citrus fruits	Rich in vitamin C and aid in white blood cell production to help fight infections	½ - 2 cups citrus fruit
Garlic	Contains calcium, potassium and sulfuric compounds which protect against bacteria and infection	1 - 2 cloves (1-2 tsp. minced)
Ginger	Provides antioxidant, antimicrobial and anti-inflammatory properties	1.5 -3 tsp fresh ginger ¼ - ½ tsp. powdered ginger
Spinach, Kale, Swiss chard, Arugula, Beets	Rich in antioxidants and nitrates which help protect cells and guard against inflammation	1 - 3 cups raw veggies ½ - 1 cup cooked veggies
Green Tea	Rich in flavonoids and contains L-theanine which protects against bacteria	2 to 3 cups
Greek yogurt, Kefir	Helps protect against travelers' diarrhea and upper respiratory tract infection	1 cup Greek yogurt 1 cup Kefir

Meal and Snack Ideas

- Add spinach and chopped garlic to scrambled eggs
- Top Greek yogurt with orange slices, strawberries, kiwis
- Swap out one cup of coffee with one cup of green tea
- Top a favorite salad with beets or citrus fruit
- Add sliced lemon to a water bottle & sip throughout the day
- Sprinkle fresh or powdered ginger on a rice dish
- Add dark greens or beets to a recovery smoothie

ImmunoBoost Shot *Servings: 1 shot*

- ½ cup orange juice (juiced or bottled)
- ¼ tsp minced garlic
- 1 Tbsp. fresh ginger or 1 tsp. powdered ginger
- ½ tsp. curcumin
- ½ tsp. cinnamon
- 2 tsp. honey

Shake in a blender bottle or blend and pour.

*Avoid taking on an empty stomach for improved tolerance.

Immune Boosting Protocol for Travel

1 – 2 Weeks Prior to Leaving

- Increase consumption of immune boosting foods
- Start supplementing with probiotics to prevent traveler's diarrhea and boost gut integrity particularly when traveling to higher risk destinations (e.g. where drinking bottled water is recommended)
- Look for strains of *Saccharomyces boulardii* and a combination of *L. acidophilus*, *B. bifidum* and *Lactobacillus Gg*

2 Days Prior to Leaving

- Consider taking a reputable immune boosting supplement that contains vitamin C + zinc** or a homemade ImmunoBoost Shot (see recipe)

During Travel

- Continue supplementing with probiotics throughout duration of travel
- Continue taking vitamin C + zinc supplement or ImmunoBoost Shot for the first 2 days of travel
- Be diligent about hand washing and sanitizing, particularly in athlete dining halls

Avoid **chronic use of high dose antioxidant dietary supplements to prevent immunosuppression, as it can negatively affect training adaptations.



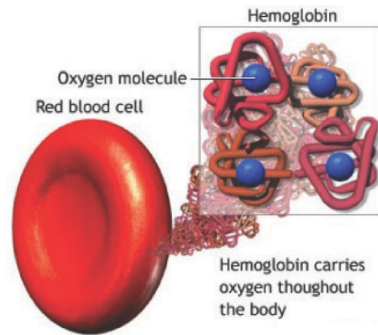
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Iron and the Body

Iron is an important mineral involved in the transportation of oxygen throughout the body and it helps produce red blood cells (RBC). Iron is part of the protein contained in RBC, known as hemoglobin. Hemoglobin carries oxygen from the lungs to tissues, allowing muscles to store and use oxygen efficiently.

Insufficient iron levels can result from:

- Low overall calorie consumption
- Low animal protein consumption
- Losing iron from blood loss (menstruation, injury/disease, or gastrointestinal trauma)
- Poor absorption of iron due to interactions with food or medication
- Losses through sweat, feces, and urine during periods of heavy training



Iron Stores

Poor iron status (storage and circulating iron) exists across several levels.

- Athletes may experience mild symptoms when they are iron-depleted

Symptoms of Deficient Iron Stores

- Breathless or early fatigue during training
- Decreased motivation to train
- Increased rate of perceived exertion (RPE),
- Decreased aerobic capacity and adaptations
- Decreased time to exhaustion

Importance of Iron to Performance

The hard physical demand of training by elite athletes increases their physiological need for oxygen.

Without adequate iron in the body, oxygen is not delivered effectively to muscles, which impairs muscle function and aerobic capacity.

Altitude and Iron

When training at altitude, athletes typically experience an increase in production of RBCs which increases the need for iron.

- If training is planned at altitude, test iron status 6-8 weeks prior to travel to ensure there is time to achieve optimal levels prior to departure
- If living at altitude monitor iron status regularly

How much iron is enough?

The Daily Recommended Intake (DRI):

Females (18-50 years old) = 18 mg/d

Males (18-50 years old) = 8 mg/d

Vegetarians (all ages) = 1.8 x DRI

**Needs are much higher to restore status if blood results are low*

Two types of iron found in food:

Heme iron is found in animal foods like meat, fish, and poultry. This type of iron is highly absorbed by the body.

Non-heme iron is found in plant foods like legumes, dark leafy vegetables, dried fruit, enriched grains, fortified cereals and sport bars. This type of iron is poorly absorbed by the body.

Considerations for Iron Absorption

- Calcium rich foods, tea, coffee and cocoa can inhibit heme iron absorption
- Certain types of fiber (e.g. phytates and oxalates) found in spinach, kale, walnuts, and almonds can inhibit the absorption of non-heme iron
- To increase absorption of non-heme iron containing foods, combine with foods rich in vitamin C (e.g. pineapple, orange, grapefruit and their juices; strawberries, peppers, broccoli, tomato, kiwis) or heme iron food sources

Iron in Training Meals and Snacks

Iron-rich Meal and Snack Suggestions

- *Include iron rich foods like meat, fish, poultry, tofu in 2 meals per day to meet recommendations*
- *Pair dried fruits like figs and apricots with hard boiled eggs for an iron rich snack*
- *Boost iron at breakfast by topping oatmeal with $\frac{1}{3}$ c of raisins*
- *Make a vegetarian iron rich brown rice bowl by combining black beans, tofu and veggies*
- *Whip up a batch of tuna salad for sandwiches throughout the week to ensure daily iron intake*
- *Choose the highest % iron fortified cereal (most Kellogg brands) – check labels*

Food sources of heme iron	Iron (mg)
Oysters – 3 oz.	7.8
Lean beef steak – 3.5 oz.	3.8
Egg, whole	1.7
Lean pork/ham – 3.5 oz.	1.5
Tuna, cooked – 3.5 oz.	1.1
Salmon or chicken breast – 3.5 oz.	0.9 - 0.8
White fish – 3.5 oz.	0.4
Sources of non-heme iron	Iron (mg)
Fortified cereal – 1 cup	4.5 - 18
Tofu, raw – $\frac{1}{2}$ cup	6.65
Lentils – 1 cup	6.59
Oatmeal, instant (1 pkg); Sport Bar (1)	6.30
Kidney or garbanzo beans – 1 cup	5.20 - 4.75
Black beans – 1 cup	3.61
Spinach, cooked – $\frac{1}{2}$ cup	3.21
White pasta or rice, cooked – 1 cup	1.90
Dried figs (4) or dried apricots (10 halves)	1.67
Raisins – $\frac{1}{3}$ cup	1.04

Athlete Recommendations:



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Injury Description

Bone and joint injuries can result from sudden trauma (e.g. fracture, dislocation, cartilage tear) or from repeated stress over time (e.g. stress fracture). These injuries are commonly seen in contact sports, gymnastics, and running/jumping sports that involve repetitive movements.

Recovery from bone and joint injuries can be lengthy due to the time needed for bone and cartilage remodeling.

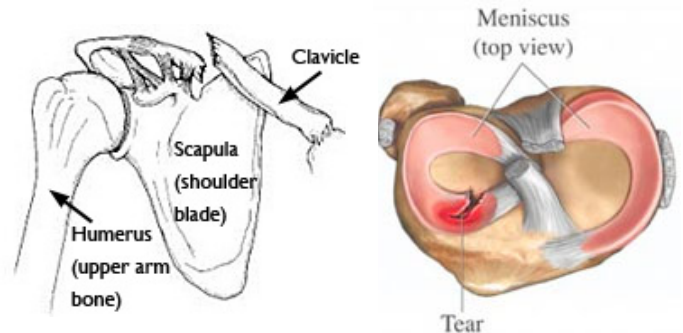
Nutrients Important for Joint Healing

Glucosamine is an amino sugar that plays a key role in growth and repair of connective tissues such as articular cartilage in joints.

Chondroitin is a component of cartilage that aids in cartilage synthesis by providing material for formation of new tissue and absorbing fluid into connective tissue.

Note: Long-term supplementation (> 4-6 months) of glucosamine and chondroitin may improve joint health and reduce pain for athletes with degenerative joint disease. Discontinue use after 6 months of no perceived benefit.

Further research is needed to determine optimal dosage and length of supplementation to support repair of joint injuries. However, food sources may be beneficial for healing as well based on nutrient function.



Left: clavicle fracture

Right: lateral meniscal tear

Nutrients Important for Bone Healing

Calcium is a component of bone matrix, which gives strength and structure to bones. Inadequate calcium intake can negatively impact healing of bone.

- Choose food before supplemental sources
- 1,500-2000 mg/day has been shown to reduce fractures and support bone healing

Vitamin D is critical for calcium absorption, blood calcium homeostasis, and bone turnover. Maintaining a vitamin D blood level above 40 ng/mL is recommended to prevent stress fractures.

Inadequate intake can limit calcium absorption.

- Supplemental doses of vitamin D should be determined by the individual's blood level and monitored by a sport dietitian
- 800 IU/day has shown to help reduce fractures in female athletes

Vitamin K & Magnesium may inhibit bone healing if intake is below the DRI.

- Supplementation is not warranted above the DRI

Strategies for Optimal Recovery

1. **Consult with a sports medicine team** to develop a recovery plan that includes strategies to address potential side effects of injury and medication use such as nausea and reduced appetite.
2. **Adjust intake of calories** post-injury to ensure *adequate* for healing and *adjusted* for reduced physical activity/mobility.
3. **Consume adequate protein** to help repair tissue and minimize muscle loss.
4. **Focus on hydration** to facilitate blood flow and nutrient delivery to injured areas.
5. **Eat calcium-rich foods** at each meal and snack to ensure adequate intake for healing.

Meals & Snacks to Aid Recovery

- *Yogurt with granola, nuts, and fruit*
- *Calcium-fortified OJ with oatmeal and eggs*
- *Fortified cereal with milk and eggs*
- *Tofu, bell pepper, and cabbage stir fry with brown rice*
- *Beef stew (includes cartilage) with potatoes, carrots, and tomatoes*
- *Grilled salmon with mushrooms and broccoli*
- *Sardines (canned with tomato sauce or mustard) on toast or crackers*
- *String cheese and sliced kiwi*
- *Cottage cheese with salsa and chips*

Food Sources of Key Nutrients

Nutrient	Sources	Important for bone healing	Important for joint healing	*Important for wound healing
Calcium	milk/milk-alternatives, cheese, yogurt, tofu, sardines, collard greens, calcium-fortified juices	X		
Vitamin D	wild salmon, dried mushrooms, sardines, fortified milk and juice, sunlight	X		
Glucosamine	softshell crab, small bony fish (sardines, anchovies)		X	
Chondroitin	connective tissue in meat, gristle on bones		X	
Arginine	shrimp, white meat turkey, frozen spinach			X
Glutamine	beef, chicken, fish, beans, dairy, cabbage, beets, legumes			X
Zinc	oysters, beef, fortified cereals, pork, beans, dark meat chicken, yogurt, cashews, chickpeas			X
Vitamin A	sweet potato, carrot, mango, red pepper, cantaloupe, egg yolk, dairy, dark leafy vegetables, fish			X
Vitamin C	citrus fruit, pineapple, bell peppers, kiwi, broccoli, berries, baked potato, tomato, leafy greens			X

***Utilize these nutrients if healing from a wound due to a bone or joint injury or surgical intervention**

Athlete Recommendations:



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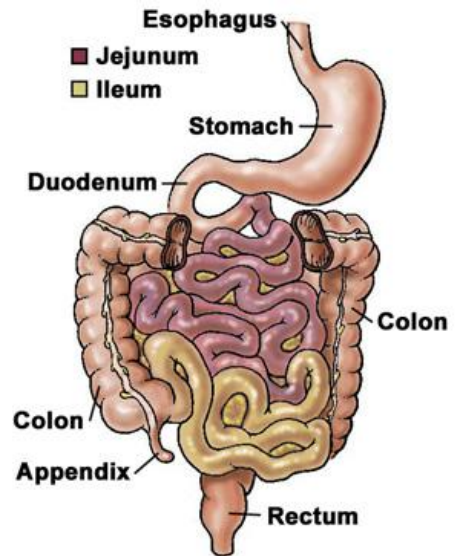
Gastrointestinal Health

Maintaining a balanced composition of gut bacteria keeps the immune system strong and able to prevent respiratory illness and combat infections and harmful bacteria.

Prolonged or intense training can disturb the gut and increase the risk of common gastrointestinal (GI) problems. Additionally, the balance of gut bacteria is disrupted after exposure to new bacteria during travel, illness, stress, fatigue, contaminated water and antibiotic use, which can lead to constipation, diarrhea, vomiting, or abdominal pain/cramping.

Probiotics

Probiotics are living microorganisms in your GI tract. When ingested, they directly increase the concentration of beneficial bacteria in the gut and aid in digestion. This helps to prevent the overgrowth of harmful bacteria, which can cause illness and diarrhea. Many foods are rich in probiotics, however if a greater dose is needed to help prevent or treat GI distress, a probiotic supplement is useful. For greater effectiveness, look for a minimum of 5 to 10 billion colony-forming units (CFU) per serving, which is the number of bacteria per dose.



Benefits of Probiotics

- Decreases frequency and duration of upper respiratory tract infections (URTI)
- Combats infections and the common cold
- Improves digestion
- Helps fight allergies
- Improves absorption of vitamins and minerals
- Treats diarrhea and irritable bowel syndrome (IBS)

Prebiotics

Prebiotics are not live cultures; instead, they provide food for the good bacteria that already exist in the colon. Make a habit of including both prebiotics and probiotics in your diet to help strengthen your immune system and prevent illness.

Which Strains To Look For

1. **Lactobacillus acidophilus** – helps enhance immunity, decreases frequency of URTI, treats diarrhea and IBS, enhances calcium absorption, and may reduce lactose intolerance
2. **Lactobacillus rhamnosus gg** – treats traveler's diarrhea, improves immunity and helps fight allergies
3. **Bifidobacterium bifidus** – the most common bacteria in the body, increases immune function, treats diarrhea, fights yeast overgrowths
4. **Lactobacillus casei** – decreases frequency of URTI, increases immunity, fights diarrhea, reduces allergies, found in yogurt and cheddar cheese
5. **Lactobacillus plantarum** – improves digestion, optimizes immune function, decreases frequency and duration of URTI, contained in foods such as sauerkraut, sourdough, kimchi
6. **Bifidobacterium lactis** – enhances immunity, improves digestion, helps absorption of vitamins and minerals, decreases frequency of URTI

PROBIOTIC-RICH FOODS

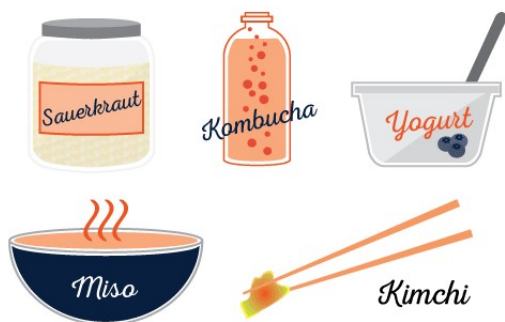


Photo courtesy of soundprobiotics.com

Foods Rich in Probiotics

- *Yogurt, kefir, buttermilk, miso, tempeh, sauerkraut, kimchi, and kombucha*
- *1 cup of kefir has 7 to 10 billion CFU per serving*
- *Tip: a yogurt label showing, “live and active cultures” is required to have a minimum of 100 million CFU/g*

Foods Rich in Prebiotics

- *Garlic, leeks, onion, artichoke bananas, asparagus, and wheat bran*
- *Chicory root (found in cereals, breakfast bars, and breads)*

Strategies for GI Recovery

1. **Avoid rich foods** that are milky, oily, sugary, or spicy when suffering from GI distress as these foods may worsen symptoms.
2. **Consume bland foods** such as saltine crackers, bananas, rice, applesauce, and plain toast that are easy to digest.
3. **Stay hydrated** and use electrolyte beverages when needed to replace losses from vomiting or diarrhea.
4. **Practice food safety** by washing hands frequently, drinking bottled water where the water supply may be contaminated and cooking foods thoroughly to avoid exposure to additional harmful bacterial.

Athlete Recommendations:



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Injury Description

Brain injuries are caused by a bump or blow to the head, which causes the brain to collide with the skull and disrupts normal function of the brain. These can range from mild (most concussions) to severe (an extended period of unconsciousness or memory loss). This abrupt motion can lead to bruising, swelling, and damage of brain tissue. Sport-related concussions are commonly seen in hockey, football, combat sports, cycling, water sports, basketball, and soccer.

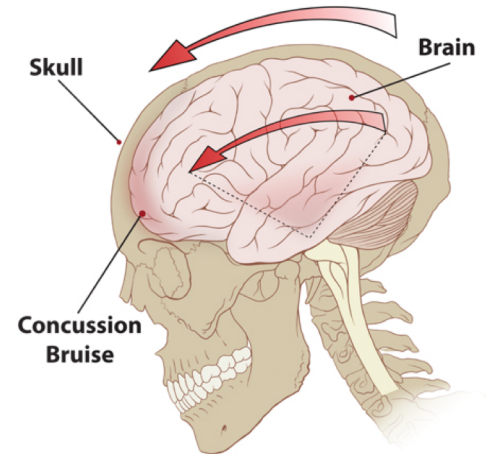


Diagram of an impact leading to a concussion.

Strategies for Optimal Recovery

1. **Consult with a sports medicine team** to develop a comprehensive recovery plan.

2. **Headaches, dizziness, and nausea are common side effects** of a concussion and may decrease appetite.

- Eat small, frequent meals every 2-3 hours of nutrient-dense foods to ensure adequate energy for healing
- Avoid skipping meals
- Eat cold foods without strong smells to combat nausea

3. **Prioritize protein rich foods** to promote healing.

4. **Stay hydrated** to facilitate nutrient delivery to the brain.

5. **Increase sleep and rest hours** to help your brain to heal. Don't try and "tough it out".

6. **Seek assistance** with food preparation if necessary.

Nutrients Important for Healing

Omega 3 fatty acids may help to reduce the inflammation associated with brain injury.

Creatine plays a role in maintaining cellular energy reserves in the brain, which are required for proper brain function.

Zinc is found in high concentrations within the brain, and plays an important role in nerve transmission and neurological function.

Flavonoids exert antioxidant, anti-inflammatory, and angiogenic effects, which may decrease brain swelling associated with concussion and help induce cerebral blood flow to help heal damaged brain tissue.

Note: *Further research is needed to determine optimal dosages and length of supplementation for brain injury recovery. If considering supplements for treatment, consult with a sport dietitian or medical provider. Keep in mind food sources may be beneficial for healing based on nutrient function.*

Food Sources of Key Nutrients

Omega 3 fatty acids - fatty fish (salmon, mackerel, sardines, tuna, trout), flaxseed, walnuts, canola oil

Creatine - wild game, red meat, poultry, fish

Zinc - oysters, beef, fortified cereals, pork, beans, dark meat chicken, yogurt, cashews, and chickpeas

Flavonoids - berries, grapes, citrus fruits, kale, broccoli, apples

Meals & Snacks to Aid Recovery

- *Yogurt with flaxseed and berries*
- *Fortified cereal with milk*
- *Kale salad with chickpeas, cashews, and orange slices*
- *¼ cup walnuts and cashews with an apple*
- *Dark meat chicken salad with grapes and cashews*
- *Grilled salmon with broccoli*
- *Turkey burger with a side of fruit salad*

Athlete Recommendations:



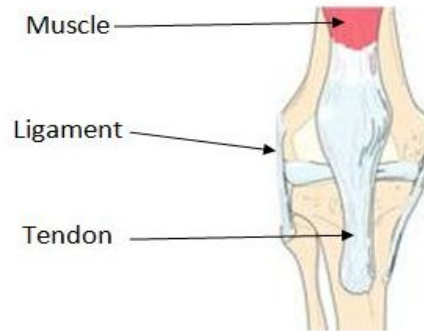
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Injury Description

Injuries cause damage to soft tissues like tendons, ligaments, and muscles. Tendons and ligaments provide structural stability to joints and serve as the connections between muscles, cartilage, and bones. Injuries to soft tissues can be acute (from sudden trauma) or chronic (from overuse).

Strategies for Optimal Recovery

1. **Consult a sports medicine team** to create a recovery plan. A sport dietitian will help develop strategies to address potential side effects of medication use such as nausea, constipation, diarrhea and reduced appetite.
2. **Modify intake of calories** post-injury to be *adequate* for healing and *adjusted* for reduced physical activity/mobility.
3. **Consume adequate protein** to help repair tissue and minimize muscle loss.
4. **Hydrate** to facilitate nutrient delivery to injured areas.



Soft tissues in the knee

Nutrients Important for Healing

Nitric Oxide (for tendon/ligaments) helps stimulate collagen synthesis to speed healing and strengthen damaged tendons/ligaments resulting from chronic overuse injuries. Applied topically via patch at 1.25 mg/day. This does not translate to food equivalents and cannot be reasonably obtained from food sources.

Gelatin/Collagen and Vitamin C (for tendon / ligaments) promotes greater collagen production following tissue injury and may promote greater tissue strength for injury prevention. Use 60 minutes prior to light activity. Discuss appropriate dosing with your sport dietitian*.

Leucine (for muscle) is an amino acid that stimulates muscle protein synthesis and reduces breakdown after exercise-induced stress. Leucine combined with other branch chain amino acids is more effective than an isolated form. Aim for 2-3 g/per serving.

Meals and Snacks to Aid Healing

- Greek yogurt with mango, granola, walnuts
- Cottage cheese with cantaloupe and toast
- Smoothie: frozen berries, yogurt, and milk
- Fortified breakfast cereal with milk and eggs
- Grilled salmon with beets and sweet potato
- Tofu, bell pepper, celery stir fry with brown rice
- Arugula and radish salad with steak and quinoa
- Pork chops with spinach and farro salad
- Orange slices and string cheese
- Celery with peanut butter and raisins



Food Sources of Key Nutrients

Nutrient	Sources	Important for tendon/ligament	Important for muscle	*Important for wound healing
Nitric Oxide	beets, spinach, arugula, celery, radishes, swiss chard	X		
Leucine	chicken, beef, fish, pork, egg, dairy, soy	X	X	
HMB	leucine-rich foods such as whey protein, chicken, beef, fish, pork, egg, dairy, soy foods		X	
CoQ10	beef, chicken, trout, soybean oil, olive oil, peanuts, sesame seeds		X	
Creatine	wild game, red meat, poultry, fish		X	
Glutamine	beef, chicken, fish, beans, dairy, cabbage, beets, legumes	X		X
Arginine	shrimp, white meat turkey, frozen spinach			X
Vitamin A	sweet potato, carrot, mango, red pepper, cantaloupe, egg yolk, dairy, green vegetables, fish	X		X
Vitamin C	citrus fruit, pineapple, bell peppers, kiwi, broccoli, berries, baked potato, tomato, leafy greens	X		X
Omega 3 fatty acids	fatty fish (salmon, mackerel, sardines, tuna, trout), flaxseed, walnuts, canola oil		X	X
Zinc	oysters, beef, fortified cereals, pork, beans, dark meat chicken, yogurt, cashews, chickpeas		X	X

***Utilize these nutrients if healing from a surgical intervention to repair a soft tissue injury.**

Athlete Recommendations:



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What is Energy Availability?

Energy availability is the amount of dietary energy remaining after exercise, available for other physiological functions such as growth, muscle recovery and homeostasis.

Low energy availability (LEA) occurs when the calorie intake of an athlete is insufficient to meet the energy required for daily living plus the demands of training. Energy intake should never drop below resting metabolic rate.

Low Energy Availability in Sport

LEA is associated with the majority of consequences of relative energy deficiency in sport (RED-S) and the Female Athlete Triad. Consequences include but are not limited to: suppressed metabolic rate; menstrual dysfunction; and impairments of bone health, immunity, protein synthesis and cardiovascular health. The consequences can occur in as little as five days and be acute, intermittent or chronic.

Performance Consequences



Signs and Symptoms of LEA

- Reduced training capacity.
- Repeated injury or illness.
- Delayed or prolonged recovery times.
- Change in mood state.
- Failure to lose weight.
- Reduced or low bone density.
- Reduced libido.
- Cessation or disruption in menstrual cycle.
- Excessive fatigue.

Key Considerations

Moderate to Hard Training Session

High volume or intensity, heavy lifting, competition, multi-day training bouts

- Timing and balance of nutrients is critical
- Refueling with the **4 R's** will facilitate training adaptations
- If 2 - 3 sessions/day, eat recovery snack post-training, then eat again in 2 hours

Light Training Session

Skills/drills, yoga, stretch, recovery day, weight loss phase

- The next meal or small post-training snack is sufficient

Recovery is an all-day process!

It takes 24 - 48 hours to fully replace your glycogen stores if they've been completely depleted, and your muscles are responsive to protein for 24 - 48 hours after a resistance training session.

Continue eating well-balanced meals and snacks throughout the rest of the day for optimal recovery.

Successful recovery will only occur with proper planning! Think about your training sessions ahead of time in order to plan and pack the appropriate fuels.

Recovery Snack Ideas

Choose a food from protein column + food from carb column based on training session!

Protein: 15-20 g	Protein: 20-25 g	Carbohydrates: 15-30 g	Carbohydrates: 45-60 g
<ul style="list-style-type: none"> • 2 c milk (cow's, soy)* • ¾ - 1 c Greek yogurt* • ¾ c cottage cheese • 2 string cheeses • 1 c firm tofu • 2-3 cooked eggs • 2-3 oz deli meat • 1 ½ c Kefir* • 1 ½ oz jerky • 2-3 oz fish • ½ c nuts or seeds* • ½ - ¾ c edamame • 4 Tbsp nut butter* • 1 c beans* 	<ul style="list-style-type: none"> • 3 c milk (cow's, soy)* • 1 ½ c Greek yogurt* • 1½ c cottage cheese • 3 string cheeses • 1 ¼ c firm tofu • 3-4 cooked eggs • 3-4 oz deli meat • 2-2 ¼ c Kefir* • 2-2 ½ oz jerky • ¾ - 1 c nuts or seeds * • 1 c edamame • 1-1½ c beans or lentils* • 1 scoop whey protein 	<ul style="list-style-type: none"> • 1 piece or cup fresh fruit • ¼ - ½ c dried fruit • 1 c fruit juice • 1 c chocolate milk • ½ c oatmeal • 1-2 slices sandwich bread • ½ bagel • 1 english muffin • 1 granola or cereal bar • 2 x 6" tortillas or wraps • ½ - ¾ c rice or farro • ½ - 1 c quinoa, beans, lentils* • ¾ c cooked pasta • 4 Tbsp nut butter* 	<ul style="list-style-type: none"> • 2-3 piece or cups fresh fruit • ¾ - 1 c dried fruit • 2 c fruit juice • 2 c chocolate milk* • 1-1 ½ c oatmeal • 3-4 slices sandwich bread • 1 bagel • 2 english muffins • 4 fig bar cookies • 2 x 8" tortilla or wrap • 1-1½ c rice or farro • 1½ - 2 c quinoa, beans, lentils* • 1 ½ c pasta

Key: * Protein source contains at least 15 g of carbs, Carb source contains at least 10 g protein

Athlete Recommendations:



Risk Factors for Developing Low Energy Availability

The following scenarios may place an athlete at risk of LEA:

- Participation in aesthetic, weight-making or endurance sports.
- Failure to increase calorie intake with increased or hard training loads.
- Attempts to lose weight when training loads are high.
- Restricted calorie intake due to physical impairments, gut tolerance, or medical conditions.
- Excessive focus by coaches and other support staff on weight and body fat as opposed to performance in sport.
- Presence of disordered eating behaviors, either in the athlete or in their training partners.
- Inadequate food availability (e.g. limited financial resources, hectic travel schedule, cramped living/cooking spaces or very busy lifestyles where food is of low priority).
- Diets very high in fiber and low in energy density (e.g. large salads lacking in carbohydrate, tendency to only eat very specific “healthy” foods, extensive use of diet products).

* **Note:** Male and female athletes are both at risk of LEA.

Health Consequences



The diagrams in this fact sheet were adapted from the International Olympic Committee consensus statement on relative energy deficiency in sport (RED-S): 2018 Update. Int J Sport Nutr Exerc Metab 28; 1-19; 2018.

Why Be Concerned?

- Potential negative impact on training response/capacity (acute or long-term).
- Suppressed metabolism, which can cause long-term difficulties with body composition.
- Reduced bone density, increasing the risk of stress fractures and other bone injuries.
- Increased risk of psychological harm.
- Acute and chronic health problems.

If you suspect an athlete may have LEA, disordered eating or body image issues, refer them to a sport dietitian, sport psychologist or sports medicine practitioner for assessment and management.



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Why is Recovery Important?

As a high performance athlete, you've chosen a career where taking care of your body is your job. When you are training and competing, there are several physiological consequences that occur which make you fitter, faster, stronger and/or improve your skill level. A sound recovery nutrition protocol will ensure you can optimize training adaptations and perform at 100% of your body's potential in the next training bout or in preparation for competition.

Are you practicing the 4 R's of recovery?

Re-plenish muscle glycogen (carbohydrate stored in muscle) after practice. Eat 0.5 g/lb BW.

Re-pair and regenerate muscle with high quality protein. Eat 15 – 25 g (higher end for larger athletes).

Re-inforce muscle cells and immune system with colorful and anti-oxidant rich foods (e.g. fruits, veggies, whole grains, fish, nuts, olive oil). Eat at least 2 cups of fruit and 3 cups of veggies daily.

Re-hydrate with fluid and electrolytes based on sweat loss in training (3 cups fluid/lb of sweat loss). Use urine color as a hydration guide pre-training.

Recovery nutrition depends on:

- ✓ Type of training session
- ✓ Training volume
- ✓ Training intensity
- ✓ Timing of your next training session
- ✓ Body weight
- ✓ Whether you are training or competing



Nutrition within 30 – 60 minutes after training or competition can enhance recovery due to:

- Increases in heart rate and blood pressure which enhances nutrient delivery to muscles
- Faster glycogen replenishment and initiation of tissue repair
- The body's hormonal switch from muscle breakdown to muscle building earlier in the recovery timeline

Key Considerations

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Athlete Recommendations:





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Planning for Travel

Coping effectively with travel takes preparation and planning. How much you need to prepare and take with you will depend on a number of factors including where and how far you are traveling. Consider the following strategies to help develop a travel nutrition plan:

Before Leaving:

- Familiarize yourself with the flight itinerary, flight time, and meals served on board
- Identify training and competition environment (humidity, temperature, elevation)
- Identify food availability (regional foods, supermarkets), and food safety concerns (water and food contamination)
- Pack a food bag to supplement destination food – prioritize nutrients less available, pack 1-2 water bottles, sport foods
- Consume foods rich in probiotics at least 2 weeks before leaving to increase immunity (e.g. yogurt, kefir)
- Bring eye mask, ear plugs, compression garments, hand sanitizer and plane snacks



During Travel:

- Maintain optimal hydration by drinking small amounts of fluid regularly. Choose water or milk. Add electrolytes to help ensure optimal absorption of water (do not limit fluid intake to prevent using the restroom!)
- Bring entertainment to prevent eating from boredom, plan meal/snack times to avoid continuous eating, walk around, stretch

At Destination:

- Aim to eat as similarly as you do at home – bring snacks for between meals, eat on new time zone, choose sensibly at buffets
- Alter meal and snack size according to changes in training volume

KEY POINTS

- Planning and preparation is the key to success when traveling
- Jet lag and long flights can compromise performance. Stay on top of nutrition needs by keeping well-hydrated and eating properly

Travel and Training Meals and Snacks

Carbohydrate Sources

- Pre-cooked or instant rice, noodles, couscous, quinoa, or pre-cooked lentils
- Instant oatmeal, cream of wheat
- Granola, muesli (higher fiber options)
- Shelf-stable bread
- Instant mashed potatoes
- Granola bars, sports bars, fig bars
- Snack crackers (graham, rice cakes, wheat)
- Fruit snacks (dried, dehydrated, leathers)
- Instant soup mixes
- Instant breakfast or meal replacement powder
- Dried veggies (peas, beans)
- Pureed fruit and veggie packets
- Powdered sports drink, gels, gummies

Protein Sources

- Tuna, salmon, chicken packets
- Tofu (shelf stable)
- Mountain meals
- Jerky (turkey, beef, bison, lamb, salmon)
- Edamame, chickpea packets
- Peanut or almond butter
- Dried hummus mix
- Nuts and seeds
- Non-fat dry milk
- Recovery drink mix
- Protein powder (whey, soy) – NSF certified
- Protein bars

**Note: some foods require equipment to prepare (e.g. hot pot, electric kettle) or spices/seasonings*

Traveling internationally?

- Check flight arrival and departure times as well as layovers in order to plan when you will eat
- Order any special meals on flight (e.g. vegetarian, low-sodium) at least 48 hours in advance
- Check arrival country customs regulations for foods that can be transported into the country
- Familiarize yourself with food safety for the destination country
- Take nutritious snacks on board and don't be shy in asking for extra snacks and water
- Consider taking a probiotic 2 weeks prior to departure to support immune function – consult a dietitian for recommendations

Precautions when traveling:

High risk areas like Asia, South America, the Middle East, and Eastern Europe

- *Drink bottled, boiled, or carbonated beverages*
- *Avoid ice cubes & juices diluted with tap water*
- *Avoid brushing teeth & washing dishes with tap water*
- *Make sure food is fully cooked and served hot*
- *Ensure dairy products have been pasteurized & are served cold*
- *Avoid raw foods like sushi*
- *Do not eat or drink items from street vendors*
- *Avoid raw fruit and salad / veggies unless you can peel them*
- *Reduce your meat and chicken intake if in China or Mexico (potential clenbuterol contamination)*

Athlete Recommendations:



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Vitamin D and the Body

Vitamin D is a fat soluble vitamin which helps support bone health, muscle function, cell growth and immunity.

Vitamin D is obtained in three ways:

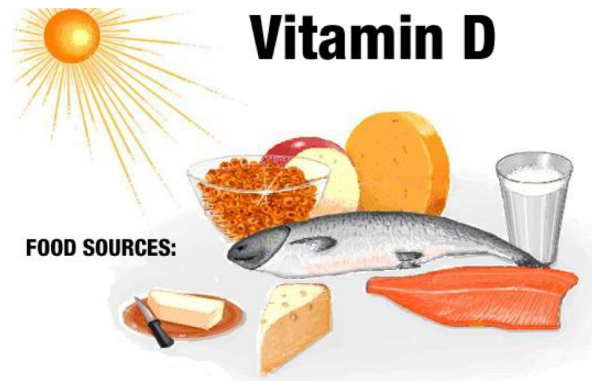
1. Consuming vitamin D-containing foods
2. Exposure to ultraviolet (UV) light
3. Ingestion of supplemental vitamin D

Risk Factors for Vitamin D Deficiency in Athletes:

- Indoor sport or winter sport
- Dark or extremely fair skin
- Living and training at northern latitudes
- Sunscreen use
- Limited sun exposure
- Low dietary vitamin D intake
- Low or high body fat levels

Importance of Vitamin D on Performance

- Sufficient levels are needed to maintain bone health and aid in injury repair
- Vitamin D helps enhance the ability of muscle to make quick, explosive movements
- Adequate vitamin D allows the body to fight off common upper respiratory infections often caused by a high volume of training at high intensities
- Vitamin D status may positively effect velocity and jump height



Assessment of Vitamin D Status:

- Status varies seasonally
- In the blood, **25 hydroxy vitamin D3** or **25(OH) D** should be assessed
- At the end of the summer (or early fall) and winter months are the best time to assess
- Baseline testing is justified at any time of the year, especially if low status may be suspected

Symptoms of Vitamin D Deficiency in Athletes:

- Low bone mass
- Stress fractures
- Fatigue
- Unexplained muscle and joint pain
- Frequent illness

How much daily vitamin D is enough?

Institute of Medicine Recommends:

Individuals 14-50 years old = 600 IU/day

Dietary sources of vitamin D are important to support vitamin D status; however, it is challenging to meet daily needs with dietary sources alone. Dietary needs are much higher to restore status if blood levels are low.

Keep in mind, dietary supplementation, recommended by a health professional, may be necessary in addition to food sources to improve status.

Sun exposure can be an important contributing source to build vitamin D stores. On average, the skin can synthesize about 10,000-20,000 IU of vitamin D in less than 30 minutes of exposure.

The amount of vitamin D synthesized from sun exposure depends on the individual. Furthermore, these factors decrease an athlete's ability to synthesize vitamin D as effectively:

- Living in northern latitude
- Winter season
- Day light outside 10:00am -2:00pm
- Darker skin color
- Clothing that covers large body areas
- Sunscreen use
- Body fat

Vitamin D in Training Meals and Snacks

Food sources of vitamin D	IU
Wild salmon – 3.5 oz.	981
Sun dried mushrooms – 1 oz.	400-500
Cod liver oil – 1 tsp.	400
Mackerel – 3.5 oz.	388
Canned sardines – 3.5 oz.	270
Farmed salmon – 3.5 oz.	249
Ahi Tuna – 3.5 oz.	164
Fortified milk – 8 oz.	100
Soy milk, fortified – 8 oz.	100
Orange juice, fortified – 8 oz.	100
Cod – 3.5 oz.	80
Cereals, fortified – amount varies	40-100
Egg yolk – 1	25-40

Simple ways to improve vitamin D status

- *Include vitamin D-rich fish in 2-3 meals per week*
- *Pair 1-2 hard-boiled eggs with fortified cereal and orange juice for a vitamin D-rich breakfast*
- *Top pasta, rice or quinoa with mushrooms*
- *Grill up salmon burgers for dinner and add leftovers to salads and tacos throughout the week*
- *Add fortified milk to fruit smoothies for a snack*
- *Aim for 5-30 minutes of sun exposure per day (without sunscreen) to help build up vitamin D stores; allow sunlight to reach arms, legs and trunk for greatest benefit*
- *If you have a history of skin cancer and melanoma, unprotected sun exposure is contraindicated*

Athlete Recommendations:

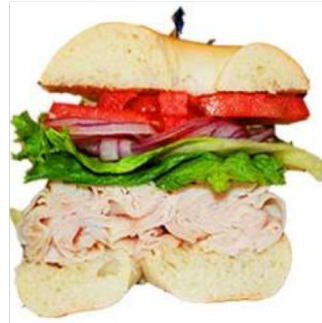


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Weight Gain in Sport

An athlete's desire to gain weight, usually in the form of lean muscle mass, should be rooted in achieving ideal body composition for performance. Increasing muscle tissue requires a combination of nutrition strategies, appropriate stimulus on the muscle tissue in the form of weight training, and sleep.

When significant changes in body composition are made, it is favorable to make changes in the off / pre-season since the demands of competition and travel will make consistent body composition changes more difficult to achieve.



Getting Started

1. **Consult a sport dietitian** to assist you with an individual plan to meet your goals and maximize performance.
2. **Get a baseline assessment** to determine current weight and body composition and to set appropriate goals.
3. **Anabolic preparation** by beginning training sessions well fueled to maximize the anabolic stimulus on muscles during training.
4. **Recovery** is a key element for muscle growth. Prioritize a recovery nutrition snack or meal immediately post-training as well as a bedtime snack.
5. **Increase daily calorie intake** in order to create new muscle tissue by adding in 1-2 snacks OR increasing portion sizes at meal times. Additional calories should come from all nutrients, not just protein.
6. **Choose quality calories** in the form of whole grains, fruit, dairy, veggies, lean animal protein, oily fish, and healthy fats to ensure nutrients are available for muscle growth in addition to training and daily physiological functioning.
7. **Monitor progress** and track your weight on a weekly to bi-weekly basis and have body composition reassessed every 4-6 weeks to ensure weight gain is primarily muscle.

Tips for Achieving Weight Gain Goals

Increase protein & leucine – ensure foods containing the amino acid leucine (meat, fish, poultry, dairy & legumes) are spread evenly through the day, at meals AND snacks, not all at one time, to aid in the growth of new tissue.

Eat frequently – aim to eat every 2-3 hours to help increase calorie intake.

Consistency is key – as with training, practice consistency with these tips Monday – Sunday.

Focus on food – aim to increase calories first with food and supplements as a secondary option.

Consult a sport dietitian to help identify an appropriate weight gain supplement if needed.

Plan ahead – outline meals and snacks for the week. Shop at least once per week to have extra calories readily available.

Eat a bed time snack – include a source of protein (cereal + milk, smoothie, cheese + crackers).

Ideas for adding in extra “quality” calories

- 1 slice or 1 oz cheddar cheese = 100 kcals
(add to salads, sandwiches, wraps, eggs, and dips)
- ½ avocado = 150 kcals
(add to sandwiches, smoothies, and salads)
- 4 Tbsp. hummus + 10 baby carrots = 200 kcals
- Whole wheat bun (200 kcals) or bagel (250 kcals)
(use instead of bread for sandwiches)
- ½ cup dried fruit = 200 kcals
(add to cereal, yogurt, ice cream, and salads)
- 1 cup whole milk (150) + ½ cup oatmeal (dry 150) = 300 kcals
- 1 cup 4% fat cottage cheese (220) + 1 cup pineapple = 300 kcals
- ½ cup granola (200) + 5.3 oz. low-fat Greek yogurt = 350 kcals
- Cook vegetables and meat in 1-3 Tbsp. olive oil = 120-360 kcals

- 1 medium apple (100) + 3 Tbsp. almond butter = 400 kcals
- ½ cup pistachios, almonds, walnuts, sunflower seeds 350-400 kcals
- 2 Tbsp. peanut butter + whole wheat bagel + 1 Tbsp. honey = 500 kcals
- 4 Tbsp. almond butter + banana = 500 calories
- Smoothie: 8 oz milk (80) + 3 dates (200) + 1 Tbsp. almond butter (100) + 1 banana (100) = 460 kcals
- Smoothie: 6 oz whole milk (115) + 8 oz. low-fat Greek yogurt (230) + ½ avocado (150) + 1 cup frozen berries (70) = 565 kcals
- Smoothie: 8 oz chocolate milk (2%) (120) + 2 Tbsp. peanut butter + 8 oz. low-fat Greek yogurt (230) + 1 banana = 650 kcals

Athlete Recommendations:



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Weight Loss in Sport

An athlete's desire to lose weight should be rooted in achieving the ideal body composition for performance. A realistic weight loss goal is one that does not compromise performance and maturation, but leads to a gradual decrease in weight of 0.5 – 1.5 pounds per week.



Getting Started on Your Weight Loss Goals

1. **Consult a sport dietitian** to assist you with an individual plan to meet your goals while maximizing energy and performance.
2. **Get a baseline assessment** to determine current weight and body composition and to set realistic goals.
3. **Plan ahead** and outline meals and snacks for the week. Make a grocery list and stick to it while shopping at least once per week to ensure access to the appropriate foods.
4. **Manage portion sizes** using the Weight Management Athlete Plate as a guide.
5. **Listen to your body** and stop eating when you are satisfied rather than “stuffed”. Eat slowly to give your body time to recognize the feeling of fullness.
6. **Focus on meals** to avoid mindless eating and minimize distractions like the TV and reading.
7. **Logging your food and fluid intake** is a great way to create awareness, identify areas for improvement, and ensure accountability.
8. **Consistency is key** when making food choices. At each meal and snack choose foods that support your weight loss goals.
9. **Have a plan** when you enter a dining hall or buffet. Start by filling half your plate with veggies and then add a lean protein and grain or carb source.



Weight Loss Checklist

- **Prioritize protein** by including an appropriate serving size in every meal and snack.
 - Skinless poultry, fish, lean meat, low-fat dairy products, eggs, tofu, beans
- **Make ½ your carbs whole grains** by including a ¼ to ½ cup or 1-2 slices at meals.
 - Brown/wild rice, quinoa, oatmeal, corn tortillas, whole wheat breads/pasta/crackers
- **Add color** by filling half your plate with veggies and snack on fruit and veggies.
 - ≥ 3 servings of veggies + 1-2 servings of fruit per day
- **Add healthy fats** in small amounts at meals to slow digestion and keep you full for longer.
 - Nuts, seeds, oily fish, avocado, plant oils
- **Rethink your drink** by choosing water, low-fat milk, or tea instead of sweetened drinks.
 - Always carry a water bottle
- **Minimize or avoid alcohol** to avoid unwanted calories.
 - ≤ 0-2 drinks per day
- **Avoid skipping meals** and include small snacks to help with recovery & avoid overeating at meals.
- **Nutrient-filled desserts** are an easy way to curb cravings while staying within a calorie budget.
- **When dining out** watch portion sizes. Include veggies and a lean protein, and ask for sauces on the side. Choose grilled, baked, roasted, broiled, and steamed foods to limit extra calories.

Low Calorie Snacks & Ideas

- 1 cup baby carrots + 1-2 Tbsp. hummus
- ¼ cup dried mangos + 1-2 hard-boiled eggs
- 1 cup popcorn + 1 low-fat string cheese
- 8-12 oz. soy or low-fat milk
- ½ cup shelled sunflower seeds
- 1-2 oz. jerky + medium apple
- 6-8 oz. low-fat Greek yogurt
- 1 rice cake + 1 Tbsp. peanut/almond butter
- 2-4 oz. turkey/ham/roast beef + medium orange
- 1 ½ c Kefir
- 1 oz. almonds, peanuts, walnuts, pistachios
- 6 celery sticks + 1-2 Tbsp. peanut/almond butter
- ½ - 1 cup edamame
- ½ cup beans + ½ cup brown rice + salsa
- 1 cup low-fat chocolate milk
- ½ turkey & veggie wrap with ½ Tbsp. hummus
- ¼ cup trail mix
- ½ whole wheat English muffin + 1 Tbsp. peanut butter + 1 tsp. honey

Easy Ways to Cut 100-200 Calories

- Choose water instead of juice or soda at meals
- Choose oil-based dressings over creamy
- Add only 1 Tbsp. of nut butter instead of 2 Tbsp.
- Choose fruit instead of candy for dessert
- Pick Greek yogurt over frozen yogurt or ice cream for dessert
- Pick an English muffin or toast in place of bagel
- ↓ Portion sizes of carbs from 1 cup to ⅔ cup

Athlete Recommendations:

