EPJ Sports Performance Program Nutrition Guide

Disclaimer

The writing and information that follows is not intended for the prevention or treatment of a disease and should not be used in place of treatment or advice from a qualified medical professional. It is purely a presentation of scientific findings that should be used for informational purposes only. The guidelines set forth are to be pursued only at sole discretion and risk of the reader. The author assumes no liability for the consequences of dietary changes: this is purely an educational manual.

Nutrition Pointers

The overall goal of our sports performance program is to build functional, lean muscle mass to improve strength, power, agility, speed and even flexibility. This will improve your performance in the activities that you do. The process of resistance training involves creating a controlled tearing down (specific adaptations to imposed demands-SAID principle) to the musculoskeletal system which is then rebuilt stronger through proper nutrition and rest. The demolition occurs during the workout sessions, the remodeling and rebuilding occurs at rest. **Do not neglect either the proper nutrition or rest or your results will suffer-this is greater than 50% of the process in my opinion. Ignoring proper nutrition and rest is akin to hiring a contractor to remodel your home and giving him half the time needed and scraps of material to work with. The end result will be poor.**

The goal of this guide is to give practical information to those dedicated to improving their athletic performance. It is understood that all year it is an extremely busy time and most of you are multisport athletes making meal planning difficult at times. It is also understood that your food choices are primarily dependent on your parents/guardians (feel free to share this information with them.) There may also be other variables such as medical conditions (diabetes) or food allergies which make this information impractical for some athletes. Cost is also a factor, we get it, we wanted to provide a starting point for all athletes.

What is Nutrition?

Nutrition is the process of providing or consuming the food necessary for health, function and growth. Nutrition, and the nutrients consumed, is the building blocks of life. Making smart choices about the foods you eat can have a lasting impact not only on your sporting career but also on your overall health later as an adult. It can be a key to avoiding obesity, illness, and many of today's most widespread chronic diseases. Sport nutrition is the study of nutrition as it relates to athletic performance. Good sport nutrition means getting the right amount of nutrients from healthy foods in the right combinations at the right times. This includes the type and quality of all foods and liquids ingested by an athlete and is more critical for performance and recovery. Sport nutrition typically deals with more vital nutrients for athletes such as vitamins and minerals, fats, carbohydrates, and proteins.

Why are vitamins and minerals important?

Vitamins and minerals, also called micronutrients, play an important role in energy production, cardiorespiratory health, bone health, and immune function. They assist in the repair of injured muscles and recovery from exercise. The higher demands of micronutrient are on an athlete's body, the greater the supply needs to be. Athletes must consume greater amounts of vitamins and minerals needed to build and repair lean muscle tissue and assist in the facilitation of the body's metabolic functions. The most common vitamins and minerals found to be necessary but limited in athletes' diets are vitamin B, C, D, E, calcium, potassium, iron, zinc, and magnesium. Restricted diets, weight loss diets, and unbalanced diets with little fruit and vegetable place greater risk for athletes to not get adequate nutrients. This can be a major factor in limiting an athlete's growth, recovery, and overall performance. Finding a good multivitamin will help most athletes deficiency but like all supplements should not be used as a replacement for natural food.

How do I find the total calories I need?

To get your recommended caloric intake, follow the equations below:

LOWER TOTALS:
Fat: (.25 x bodyweight) x 9 = _____ calories from fat
Carbohydrate: (2.5 x bodyweight) x 4 = _____ calories from carbs
Protein: (.50 x bodyweight) x 4 = _____ calories from protein
Total Calories: _____ calories

HIGHER TOTALS:
Fat: (.50 x bodyweight) x 9 = _____ calories from fat
Carbohydrate: (3.5 x bodyweight) x 4 = _____ calories from carbs
Protein: (1.0 x bodyweight) x 4 = _____ calories from protein
Total Calories: _____ calories

So, for our 200lb athletes the caloric needs would be between 2850-4500 calories. The lower of the two totals from above should be used on lighter training days or when you're out of season. The higher of the two totals should be used on heavier training days such as two a day practices or when offseason training is very intense.

Understanding Hydration and Electrolytes for Athletes:

Myth 1: You Only Need to Drink Water to Stay Hydrated

One of the most common misconceptions is that water alone is sufficient for hydration, even during intense physical activity. While water is essential for keeping the body hydrated, it doesn't always replenish the electrolytes lost during intense or prolonged exercise, such as sodium, potassium, and magnesium.

Reality: Electrolytes Are Key to Proper Hydration.

When you sweat, you lose not just water but also vital electrolytes that help regulate fluid balance, muscle function, and nerve signaling. During prolonged or intense exercise, it's crucial to replace both water and electrolytes. This is where sports drinks or electrolyte packets can come into play, especially for activities

lasting more than an hour. However, for shorter workouts (1 hour or less) or training that is considered low to moderate in intensity, water is usually sufficient.

Myth 2: Sports Drinks Are Always the Best Option for Hydration

Many athletes believe that commercial sports drinks are the go-to solution for staying hydrated. While these drinks can be beneficial during prolonged, high-intensity exercise, or exercise in hot and/or humid conditions, they're not always necessary.

Reality: Sports Drinks Aren't Always Necessary.

For most casual athletes or those engaging in intermittent sports like softball or golf, the added sugar and calories in sports drinks can be excessive. In fact, for short workouts or activities like walking or light jogging, plain water is enough.

It is also important to note that sport drinks or electrolyte replacements are only beneficial during activities of high intensity, long duration, or in hot humid conditions. There are no performance benefits to consuming these products between training or competitions and may be a disadvantage by adding unnecessary sugar and sodium to the body during recovery time.

Myth 3: You Should Drink as Much as Possible to Avoid Dehydration

Some people think that drinking excessive amounts of water will prevent dehydration. While staying hydrated is important, overhydration can be harmful.

Reality: Too Much Water Can Lead to Hyponatremia.

Hyponatremia, or water intoxication, occurs when too much water dilutes the sodium levels in your blood, leading to potentially dangerous consequences like nausea, headache, confusion, and even seizures. It's important to drink water in balance with your body's needs, especially when exercising in extreme conditions.

A good rule is to drink ½ of your body weight in ounces daily and add 16-32 ounces per hour of exercise. To avoid water intoxication, avoid drinking more than 48 ounces per hour or more than 5 gallons per day.

Myth 4: Hydration Doesn't Affect Performance Until You Feel Thirsty

Thirst is often considered the body's natural indicator that it needs fluids but waiting until you're thirsty to hydrate can already be a sign that you're dehydrated.

Reality: Hydration Should Be Proactive.

By the time you feel thirsty, your body may have already lost 1-2% of its body weight in water. This can affect your performance, energy levels, and focus. It's essential to start hydrating before, during, and after your workout. This is when the pee test may be helpful.

When using the restroom, if an athlete's urine is dark yellow, that is a sign that they are dehydrated. It is estimated that up to 89% of athletes begin their training or competition in a state of dehydration, and once they start moving, they can't catch up on their hydration. The goal is to always have light yellow urine to ensure a good state of hydration.

Myth 5: If you're not sweating, you're not working hard enough.

The amount an individual sweats is often measured as effort in team sports, especially during training drills. **Reality: Sweating is a bodily mechanism to cool down, but it doesn't necessarily indicate how hard you're working.**

While it's true that high-intensity exercise often leads to increased sweat production, sweat rate isn't solely determined by the level of effort. You could be working at a lower intensity but sweating a lot (for example, in a hot environment), or you might be working hard with little sweat due to factors like genetics, hydration levels, or a well-conditioned body that sweats more efficiently.

Sweat rate is not a direct measure of effort or energy expenditure but does impact how much an athlete should rehydrate after training or competition. It is recommended to drink 16-24 ounces of fluid for every pound of body weight lost during exercise to replace what is lost in sweat.

Conclusion: Hydration and Electrolytes Are Crucial, But Know What You Need

Proper hydration and electrolyte balance are vital to maintaining peak performance and supporting recovery, but it's important to understand your body's individual needs. Water is your best friend for everyday hydration, while electrolytes play a significant role in restoring balance during and after more intense or prolonged physical activity.

Instead of buying into myths, focus on what works for your body, the intensity of your workouts, and the environment you're training in. Always listen to your body's cues and remember that balance is key in achieving both hydration and optimal athletic performance.

Get into the habit of drinking water throughout the day. If you are dehydrated, your potential work output during a training session will suffer. Begin hydrating the night before a workout and make sure you drink water prior to a morning session. Your urine should be light yellow to clear prior to a training session to be at maximum strength. Replenish fluids after a hard workout or practice.

Charts on the next two pages can be found to help you with your hydration needs.

- Charts Provided by: Clemson University Football Team

Energy Providing Nutrients

Sports Nutrition Myth #1: Athletes Need as Much Protein as Possible

Protein is essential for muscle repair and growth, no doubt about it. But many people believe that more is always better. While it's true that protein intake needs to be higher for those engaging in intense training, there's a limit, about 2 grams per kilogram body weight.

Protein is used for almost every vital function the body includes hormone and enzyme production, immunity, blood clotting, fluid balance, tissue growth and repair, and more. The body prioritizes protein to be used for the vital functions first, therefore only 10% of ingested protein goes toward muscle protein synthesis. Excess protein can't be stored as muscle; it's either excreted, or converted into energy.

This myth often leads athletes to overconsume protein, neglecting other vital macronutrients like carbs and fats.

Protein:

Protein will only be used to build muscle if enough carbohydrate calories are consumed during a weight resistance exercise program. Without adequate calories from carbohydrates protein is used as fuel.

- **Complete protein** comes from animal products and are named that because they have all the essential "amino acids". Examples include eggs, milk, cheese, yogurt, beef, pork, poultry, fish etc.
- **Incomplete proteins** are primarily derived from plant products and are missing at least one essential amino acid. Examples include beans, nuts, peanut butter, rice, and whole grains.
    - Sometimes two incompletes combine to create a complete protein (examples: peanut butter on wheat bread another example is rice and beans.)

Athletes should consume .05-1.0 grams per pound of bodyweight.

- **Example:** A 200lb athlete would need 100-200 grams of protein per day.

Approximately 30-60 grams of carbohydrates and 20-30 grams of protein should be consumed within 30 minutes to one-hour post exercise or practice. Consuming both will restore lost carbohydrates from your muscles and increase rebuilding broken down muscles.

Sports Nutrition Myth #2: Carbohydrates Will Make Me Fat

The weight loss culture has given carbohydrates a bad rap in recent years, with many believing they're the culprit behind weight gain. For athletes, carbohydrates are a primary source of energy, fueling both endurance and strength.

Without enough carbs athletes will have lower energy levels, shorter endurance, less power for strength performance, slower recovery, and their body may be forced to breakdown lean body tissue (primarily muscle) to make essential glucose.

It is agreed that not all carbohydrates are created equal and ultra-processed carbohydrates lack nutrients with a high calorie cost.

Carbohydrates:

Carbohydrates' primary role in the body is to serve as an energy source. This is the athletes' primary source of fuel and energy throughout the day, during practice and in games. The typical diet supplies more than enough carbohydrates even for the hard training athlete, making this the most important of the macronutrients. The best sources are also sources of incomplete protein (beans, whole wheat bread, whole wheat pasta, brown rice, oatmeal) or good sources of vitamins and minerals (fruits and vegetables).

Most people consume way too much sugar. The hard training athlete need not abstain, but too much sugar will cause an increase in body fat. If you are in the habit of snacking on high sugar or simple carbohydrate snacks you should change this habit to maximize results. When items say, "sugar free" or "zero sugar", they contain a myriad of chemicals the body is unfamiliar with. Leading to not always being the healthier choice. **A good rule of thumb is trying to eat sources that are close to the natural state as possible.**

The recommended intake of carbohydrates is 2.5-3.5 grams per pound of bodyweight.

- **Example:** A 200lb athlete would need 500-700 grams of carbohydrates per day.

Without the proper amount of carbs, you will feel sluggish and lethargic and have trouble finishing practice and games.

- The **best source of carbohydrates for athletes are fruits, vegetables, white & sweet potatoes, legumes/lentils, and whole grains**
    - They also provide vitamins, minerals, fiber, and antioxidants to promote a strong immune system, healthy digestive track, and faster recovery times.

Fats are Not a Villain:

In terms of sport performance, fat is the body's fuel source for light to moderate intensity exercise and spares carbohydrate for longer bouts of exercise. Forget the "low fat diet". If you are looking for a villain, excessive sugar is it, not dietary fat. The hard training athlete should not be concerned about "reducing" or avoiding fat intake. Fats are a vital nutrient and provide the feeling of fullness and satisfaction. This keeps you from constantly snacking on simple carbs. Fat is part of the structure of every cell in your body and is vital to produce certain hormones (testosterone-derived from cholesterol). Adequate fat in the diet is important for meeting increased needs of athletes. The type of fat is as important if not more important than the amount of fat in an athlete's diet.

The recommended fat intake is 20-30% of total calories or about .25-.50 grams per pound of body weight.

- **Example:** A 200lb athlete would need from 50-100 grams of fat per day

Consume unsaturated, monounsaturated, and polyunsaturated fats (good fats) are of primary importance and have many health benefits. These are found in oils and foods such as nuts (olive oil, canola oil, peanuts, sunflower seeds, cashews etc.)

Steer clear of saturated fats (bad fat) found in animal products and should be consumed in moderate amounts and **Trans fats** (hydrogenated or partially hydrogenated-on label) are chemically altered and should be avoided as they may increase inflammation. **Obviously, eating a lot of fried food is not healthy for anybody.**

Sports Nutrition Myth #3: Lower Body Fat Will Promote Better Performance

While a lower body fat percentage can be an advantage in some sports, it's not a universal rule. In fact, too little body fat can harm performance, especially in endurance sports. Because of the negative impact low body fat percentage has had on athletes, the focus of sports performance research has turned to fat free mass (FFM).

The study of FFM refers to muscle mass, and the more FFM an athlete has the better their performance is, regardless of their percent body fat. Athletes need to maintain a healthy body fat range for optimal hormonal function, energy, and injury prevention.

Sports Nutrition Myth #4: Drastically Cutting Calories is the Best Way to Cut Weight

Drastically cutting calories might seem like the quickest way to cut weight but is counterproductive to athletes as it is also the fastest way to lose vital fat free mass (muscle). When you cut calories too drastically your body will use up all its stored glycogen within 24 hours, and then the body will break down muscle to create glucose, the brain and nerves preferred fuel.

In addition to losing muscle, you will go into "starvation mode," slowing down your metabolism to conserve energy, which leads to fatigue, nutrient deficiencies, and other health issues. A more effective approach to weight loss is a moderate 300 calorie daily deficit paired with a balanced diet that is adequate in carbohydrates for fuel and protein to protect fat free mass.

Sports Nutrition Myth #5: Fasting Before Training Will Burn More Fat

Fasting has become a popular trend in fitness and sport, but it's not a one-size-fits-all strategy. There is evidence that endurance athletes who intermittently train fasted may utilize more fat as fuel which preserves glycogen stores providing extended fuel when competing.

It is important to note that competing in a fasted state is never recommended, this strategy only shows benefits in some endurance athletes and is not a valuable strategy for strength or power sports. Training in a fasted state can leave athletes feeling fatigued, reduces muscle engagement, and hinders their overall performance. Most athletes perform better with a light snack or meal about 2 hours before training and competition to fuel their muscles and maintain energy levels.

How to Make the Right Food Choices

- **On High Energy Training Days (Examples of the Choices are on the next 3 Pages)**
  - You want your plate to be filled with gold and silver choices.
- **On inactive or low energy days (Examples of the Choices are on the next 3 Pages)**
  - Try to stick to reduced total calories and gold-level food choices.
- **If you're trying to gain weight (Examples of the Choices are on the next 3 Pages)**
  - Eat more of the gold and silver choices.
  - Take a quality protein supplement **(approved by your parents, coaches, and medical expert)** in addition to your meals to help get an adequate amount of calories.
- **Losing body fat (Examples of the Choices are on the next 3 Pages)**
  - **A hard training athlete does not need to "Diet"**
    - But it will be beneficial to make some changes
  - Will require you to stay with gold choices.
  - Limit silver and avoid bronze choices.
- **Do not skip meals!**
  - Be sure to eat breakfast, lunch, and dinner.
    - **Eat Breakfast Like a King**
    - You should try to eat fruit and vegetables at most meals
- **Snack Smart (Examples on the next 3 Pages)**
  - Should include gold choice proteins
  - Limit silver choices and avoid bronze food altogether.
  - **Pre-Workout Snack**
    - Especially for early morning workouts. Get something in your system to get you through the workout, but not enough to get a stomachache when things get intense.
    - Pre-workout snack is not the time for a "king's breakfast", that is for after the workout.
  - **Post workout snack/meal**
    - It is a good rule of thumb to eat a nutritious meal or snack within 45 minutes of a workout.
      - This helps aid the recovery process after the "tearing down" process of a workout.
      - Your muscle cells are "primed" to receive nutrients after a workout.
    - For those early morning workouts
      - Eat a big breakfast.
    - For those afternoon workouts
      - A gold and silver protein/carbs source are good choices.
- **Learn to Cook**
  - If you can read, you can cook.
  - Eating out all the time is expensive, and the food quality is usually poor.
  - Good meals can be put together with minimal time
    - It is not always practical when you are living at home and not purchasing the food yourself.
    - Get your parents involved when possible

Gold Choices

Gold Fats

- Focus on unsaturated fats (mono, poly unsaturated, Omega 3 and 6) and
- avoid saturated fats.
- Olive Oil
- Coconut Oil
- Peanut Oil
- Fish (salmon, tuna, tilapia)

Gold Proteins

- Proteins with the highest protein and lowest amount of fat.
- Roast Turkey
- Lean Roast Beef
- Steak Filet
- Baked Fish
- Skim Milk
- Non-fat and low fat yogurt
- Beans and peas (legumes)
- Egg Whites

Gold Carbs

- Produce the lowest glycemic response and are low in fat.
- Squash
- Asparagus
- Cucumbers
- Green Beans
- Broccoli
- Spinach
- Mushrooms
- Onions
- Pears Plums

Sliver Choices

Sliver Fats

- Have high amounts of “good” fat and limited “bad” fat
- Avocado
- Black olives
- Nuts and Nut Butters (Peanuts Almonds Walnuts)
- Egg yolk
- Soybeans
- Seeds (sunflower, flaxseed)

Sliver Proteins

- Proteins with high amounts of protein with moderate amounts of fat.
- 85-92% Lean Beef
- Trimmed Choice Steak (Sirloin)
- Trimmed Pork Chops
- Baked chicken strips
- 2% Milk
- Nut Butters (peanut butter, almond butter)
- Whole Eggs
- Cottage Cheese

Sliver Carbs

- Produces moderate glycemic responses. Consume more of these within
- one hour of weights or practice to restore energy levels, enhance recovery
- Raisin Bran Cereal
- Whole Wheat Pasta
- Whole Grain Bread
- Brown or Wild Rice
- Baked Potatoes
- Sweet Potatoes
- Corn Carrots
- Grapes
- Apples

- Bananas

Bronze Choices

Bronze Fats

- Avoid fats that are high in saturated fat and cholesterol. Generally these fats
- are hard at room temperature.
- Beef fat
- Pork fat
- Butter Shortening
- Stick margarine

Bronze Proteins

- Lower in protein content and higher in fat
- Hot Dogs
- Fried Chicken
- Fried Fish
- Whole Milk
- Processed Meats

Bronze Carbs

- Produce the highest glycemic response and may have high fat content. You
- may eat small amounts of these occasionally immediately after demanding
- practice or high activity days if gaining weight in the offseason.
- Candy
- Pretzels and crackers (good for post practice)
- Cookies
- Cakes
- Sugary Cereal
- Donuts
- White Bread
- White Rice
- French Fries
- Mashed potatoes
- Soft Drinks

Sample Meal Plans

Weight Gain Meal Plan

BREAKFAST
4-5 Eggs (whites or whole)
3 Slices of wheat toast/jelly
1-2 Cups of cereal
2 Cups of milk
1 Cup of juice
1-2 Fruits

LUNCH
2 Large turkey sandwiches
2 Fruits
1 Pasta
1 Cup of vegetables
2 Cups of milk

DINNER
1-2 Chicken, beef, or fish
1 baked potato
1 Cup of vegetables
3 slices of whole grain toast
2 Cups of milk

SNACK #1
2 Fruits

SNACK #2
1 Can of tuna
1-2 Fruits
1 Cup of milk

SNACK #3
1 turkey sandwich (turkey, whole grain bread, mustard)
1 fruit
2 Cups of 2% milk

Weight Loss Meal Plan

BREAKFAST
1 apple
1 slice of whole-wheat toast with sugar free jam
1 Cup of Raisin Bran cereal 1 Cup of skim milk

LUNCH
1 piece of chicken breast
1 medium baked potato
1 apple
Water

DINNER
1 Chicken, lean beef, or fish
2 Cups of vegetables
2 Cups of skim milk
Water

SNACK #1
1 medium handful of almonds
1 Fruit

SNACK #2
1 Sugar free yogurt

Weight Maintenance Meal Plan

BREAKFAST

1 apple
2 Cups of Raisin Bran, 1 Cup of 2% Milk
1 piece of wheat toast with jelly
1 Cup of OJ

LUNCH

1 piece of baked chicken
1 Cups of noodles/pasta
1 Cups of peas/green beans
1 Cup of Skim milk
Water

DINNER

1 Chicken breast
1 medium baked potato
2 Cups of Mixed Veggies
1 pat Margarine
2 Cups of salad
Unsweetened Tea

SNACK #1

1 Fruits

SNACK #2

2 Fruits
1 medium handful of almonds

How do I apply this to my sport and season?

Preseason: Needs in preseason will differ from sport to sport.

- Outdoor sports are typically harder on the body in terms of keeping the body fueled and properly hydrated. Intense heat can make an athlete not feel hungry **"But eating and refueling is a must."**
- During practice drink several ounces of water every 15-20 minutes. For each pound of bodyweight lost in practice it requires 20-24oz of fluid and 1 gram of sodium to replenish what was lost. Choose options like fruits and vegetables that are high-fluid foods with pretzels, crackers, and nuts to add some sodium for snacks.
- **Remember to consume recovery foods such as bagels, berries, or protein shakes within 30 minutes immediately following practice.**

In-season and Post-Season Play

- Caloric demands are extremely high with practice, lifting, conditioning and playing games.
- Make sure your caloric intake is high enough to give you fuel and energy needed to compete at optimal levels.
- One good thing about in-season is you are able to fall into a routine and plan a nutritional schedule around school, practice, weights, and studying.
    - Be proactive in your planning, taking snacks with you to school to eat between classes.
    - **In-season is not the time to try losing or gaining weight**.
        - Coming into the season you should be at your optimal competing weight and should try to maintain that weight throughout the competitive months.

Game Days

- Try to eat 3-4 hours before competition with some lean proteins and carbohydrate rich
- **If you can, try to eat a high carbohydrate snack (banana and Gatorade) 20-30 minutes before game time and at half time to keep energy levels high and combat dehydration.**
- Recovery is a high priority during the season and post season. Consume .50 grams per pound of bodyweight in carbohydrates and at least 20 grams of protein immediately following your game.
- If you play an outdoor sport, you must focus on hydrating before games and re-hydrating your body post-game by drinking 32-64 oz. of water.

Offseason: The needs of each individual athlete will change.

- Practice will not be as common (if at all) and strength and conditioning demands will be high.
    - Energy, protein, and nutritional recovery are demanding.
- This is a wonderful time to increase muscle mass and/or decrease body fat.
- **Have a plan and know how to get there in your offseason.**
    - Plan out your meals based on nutritional needs and caloric content.
    - Stick with appropriately healthy foods listed in the sections above to ensure the proper weight management for your goals.

Relative Rest:

The key word is “relative”. That doesn’t mean you need to sit around on the couch whenever you get the chance.

- Working and participation in other sports are just fine.
- **It means no additional <u>weight room workouts</u> and consistent and adequate sleep.**
    - **In the weight room, more is not necessarily better.**
        - Too much will stagnate your gains.
        - Do only the frequency prescribe by your coach.

With sleep, some people need more and some less.

- If you stay up into the early morning playing video games or watch YouTube, it will hurt your progress.
- **Remember, most of the “rebuilding and remodeling” to your body occur during sleep, make sure you consistently get enough.**

The Power of Sleep Chart on the next page can help you with your journey of getting a better night sleep.

- Charts Provided by: Clemson University Football Team

Supplements:

Supplement Disclaimer

The products, information, or other content provided are not meant to diagnose, treat, cure, or prevent any disease. The statements made including information and product recommendations have not been evaluated by the Food and Drug Administration. All information presented is for educational purposes. The statements, information and products presented are strictly recommendations and should not be construed as dispensing medical advice. You should consult a licensed health care professional before starting any supplement, especially if you have any pre-existing injuries or medical conditions and to discuss any potential interactions between any medication you are currently taking and the nutritional supplements. Always check the label before using any supplement. Products or claims made about specific nutrients or products have not been evaluated by the Food and Drug Administration. Dietary products are not intended to treat, prevent or cure disease.

The Role of Supplements in Sports Nutrition

This can be a "taboo" topic for the high school athlete.

- Supplements are designed to complement a well-balanced diet, not replace it.
- **Eating well should be the first priority**…that is expensive enough.
    - A solid foundation of whole foods, including lean proteins, vegetables, fruits, whole grains, and healthy fats, should be the primary focus.
- Most supplements are not worth wasting your money on.
    - Some are harmless and potentially beneficial for the hard training athlete
        - example: whey protein/multivitamin-mineral
    - Some are potentially beneficial but are controversial in young athletes due to lack of long-term studies.
- **Most are a waste of money.**
- However, sports supplements can provide an extra edge when it comes to supporting specific goals such as performance, recovery, and muscle growth.
    - **You should always consult with your parents first.**
        - **You should consult a licensed health care professional before starting any supplement**

Supplements that can support performance and recovery

Protein Powder:

- Protein powder has no special benefit over whole foods, but athletes' schedules can be busy so protein powders, drinks, or bars provide a quick and convenient source of high-quality protein that can be easily packed in a gym bag, backpack, or school locker.
- ****WHEY PROTEIN ISOLATE IS IDEAL****
    - Is easily digestible and packed with an essential amino acid called leucine that has shown to have a significant impact on muscle protein synthesis.
- **PROS:**
    - Builds muscles
    - Repairs damaged tissue
    - Fuels Immune system
- **CONS:**
    - If your eating habits are 100% perfect, it may be unnecessary
- **WHAT BRANDS SHOULD I BUY?**

    - Optimum Nutrition Naturally Flavored 100% Whey Protein
    - Now Sports Whey Protein Isolate
    - Now Sports Egg White Protein (only if allergic to whey)
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - **20-35g withing 45 minutes of finishing a workout**

Casein:

- The twin sister of whey protein also has a high leucine content
    - But it is slow to digest.
- This slow digesting protein, when consumed at bedtime 20-30 grams, has shown to improve muscle protein synthesis in athletes up to 30%.
- Cottage cheese is an excellent source of whole food casein with 1 cup providing 20 grams
    - If cottage cheese is not a preferred food, there are plenty protein powders that contain casein an athlete can use.

Creatine Monohydrate:

- Creatine Monohydrate is one of the most studied and effective supplements for athletes looking to improve strength and power.
    - It helps replenish ATP (adenosine triphosphate), the energy source for muscle contractions, allowing for more intense workouts and faster recovery.
- Creatine is naturally present in most high protein foods like meat, chicken, and fish so we get it in our diet naturally, but supplements can ensure an athlete has adequate stores in their muscle for performance.
    - The fastest way to increase muscle stores is to consume 5 grams 4 times per day for 5-7 days then an athlete only needs 5 grams per day to maintain their muscle creatine stores.
    - Although, more is not better when it comes to creatine, it can cause stomach upset, so if an athlete has a sensitive stomach they can skip the load phase and just take 5 grams per day for a slower build up.
- **PROS:**
    - Helps increase muscle mass and strength
    - Provides short term energy bursts = More Power
    - Neurologically protective = Brain health
- **CONS:**
    - Can lead to cramping in dehydrated athletes
    - Water retention
- **WHAT BRANDS SHOULD I BUY?**
    - Muscle Pharm
    - Bulk Supplements
    - Optimum Nutrition
    - ****ALWAYS GET CREATINE MONOHYDRATE****
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - 3-5g before or after workout
    - **Best if taken with carbohydrate and protein****

OMEGA-3 Fatty Acids:

- These are vital for reducing inflammation, supporting heart health, improving joint function and brain health.

    - Athletes, in particular, may benefit from higher doses of Omega-3s to help reduce muscle soreness, improve recovery times, and increase concussion prevention and recovery.
- Fatty fish like salmon, mackerel, or anchovies in oil are excellent whole food sources of Omega 3's
    - But 5 ounces per day would need to be consumed to meet the higher recommendations of athletes.
- Don't be fooled by any fish oil capsule as most don't come close to the higher recommendations for athletes of 2-3 grams per day of DHA & EPA Omega 3
    - Instead look for a concentrated triglyceride Omega 3 to meet the recommendation with less capsules.
- **PROS:**
    - Decreases inflammation, aids in healing from injury
    - May reduce joint and muscle pain
    - Neurologically protective = brain health
- **CONS:**
    - Can have fishy smell
    - If you have blood clotting disorder, it could increase bleeding
- **WHAT BRANDS SHOULD I BUY?**
    - Nordic Naturals
    - Brain Armor
    - Nature Made
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - **1-4g daily - does not need to be consumed around a workout**

Supplements that are wasting your money

Pre-Workout Formulas:

- While pre-workout supplements often promise energy, focus, and endurance, they can also be loaded with stimulants like caffeine that can cause jitteriness or crashes.
    - In most cases, a strong cup of coffee or a well-balanced meal can provide the same benefits without the added artificial additives.
- **PROS:**
    - Provides energy in order to optimize training session
- **CONS:**
    - Tingling / itching or dizziness (if it contains Beta-Alanine)
    - Heart Racing
- **WHAT BRANDS SHOULD I BUY?**
    - True Athlete "Natural Energized Training Formula" -
        - **Contains Creatine and Beta-Alanine
    - Now Sports Energy Extreme Tablets -
        - **No Creatine and Beta-Alanine
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - **Do not take more than recommended on label**
    - Best if taken pre-workout

Branch-Chain Amino Acids:

- Common additive to pre-workout formulas and include 3 of the essential amino acids that our body can only get from the foods we eat.
    - The 3 BCAA's are leucine, isoleucine, and valine.
        - Leucine has been well studied to increase MPS when consumed with whole proteins, but there is no evidence in clinical studies that supplementing these 3 amino acids has any impact on muscle protein synthesis.
- **It is best to get these essential amino acids from whole foods like meat, dairy, legumes, nuts and seeds.**

Fat Burners:

- These supplements are often marketed as magic pills for weight loss, but the reality is that they usually only offer minimal benefits.
- Effective fat loss comes from a combination of proper diet, regular exercise, and a consistent caloric deficit.
    - **Supplements may play a small role, but they should never replace these core components.**

Testosterone Boosters:

- There's little scientific evidence to support the effectiveness of most testosterone-boosting supplements.
- **If you're concerned about your testosterone levels, it's best to consult with a healthcare professional to determine the underlying cause and potential treatment options.**

OVERLOOKED, BUT VALUABLE SUPPLEMENTS

COLLAGEN:

- **PROS:**
    - Builds and repairs tissue
        - (Ex: Ligaments, tendons, skin, muscles)
        - Helps decrease joint pain
- **CONS:**
    - If allergic, it will cause reaction (not common)
- **WHAT BRANDS SHOULD I BUY?**
    - Great Lakes Collagen Hydrolysate
    - Vital Proteins Collagen
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - **20g daily - does not need to be consumed around a workout**

MULTI VITAMIN:

- **PROS:**
    - Athletes have increased vitamin and mineral needs
    - Fills in the gaps of insufficient nutrient consumption
- **CONS:**

    - If your eating habits are 100%, it may be unnecessary
- **WHAT BRANDS SHOULD I BUY?**
    - Nature Made Multi vitamin
    - Nutricost Multi vitamin
- **HOW MUCH SHOULD I TAKE, AND WHEN?**
    - **Daily serving recommended on the bottle**

How to Choose the Right Supplements for Your Goals

Before adding any supplement to your routine, consider the following:

- **Evaluate Your Diet:**
    - Ensure you're meeting your basic nutritional needs from whole foods first.
- **Identify Your Goals:**
    - Are you looking to increase muscle mass, improve endurance, or speed up recovery?
- **Consult with a Professional:**
    - A registered dietitian or sports nutritionist can help tailor a supplement plan based on your unique needs.

Supplements can provide an extra edge in an athletes' sports nutrition regimen, but they're not a substitute for a well-balanced diet. Focus on whole foods first, then consider adding supplements that align with your goals.

Remember:

- You should always consult with your parents first
- You should consult a licensed health care professional before starting any supplement
- **Not all supplements are necessary**
    - It's important to make informed decisions to ensure you're investing in products that truly benefit your performance and recovery.

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