



Strategies

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More Than Just Game-Day Fuel:

The Mental-Health Benefits of Proper Nutrition

By Dee Kinney 

Coaches and school professionals working with high school student-athletes understand that nutrition matters—for academic performance, athletic ability, and overall health (Centers for Disease Control and Prevention [CDC], 2023; Fuller & Bird, 2025). While traditional sports nutrition focuses on physical performance, recent research points to a deeper connection between food and mental well-being. Gut health, brain chemistry, and everyday eating habits all influence mood, focus, and emotional resilience (Jacka, 2019).

This article provides practical, research-informed strategies to help coaches, health educators, and school staff support student-athletes' mental health through informed nutrition choices. By recognizing the food–mood connection, adults can promote healthy habits, reduce stigma around emotional struggles, and empower students to thrive—on the field and beyond.

High School Athletes: Nutrition, Mental Health, and the Missing Link

Adolescence is a time of profound physical, emotional, and social growth. High school athletes must juggle academic demands, social pressures, hormonal shifts, and performance expectations—all of which can strain their mental health. According to a White House Report on Mental Health Research Priorities (2023), over 40% of U.S. high school students report persistent feelings of sadness or hopelessness (p. 4).

Student-athletes may face additional pressures. Clark et al. (2025) noted that many overidentify with their athletic role, making them especially vulnerable to emotional struggles when injuries or setbacks occur. Common challenges include anxiety, depression, eating disorders, body-image concerns, and burnout. Unfortunately, stigma and the desire to appear strong often prevent teens from asking for help (Barrow & Thomas, 2022).

Nutrition, although often overlooked, plays a vital role in this equation. It is commonly assumed that student-athletes eat better than their peers, but studies suggest otherwise. Jenkins et al. (2023) found that the diets of adolescent athletes are often no more balanced than those of nonathletes. Influences such as peer norms, environmental factors, and misinformation can lead to underfueling, restrictive eating, or excessive supplement use (Fuller & Bird, 2025). Even though many student-athletes may understand that poor nutrition increases injury risk or slows physical recovery, they may not realize how food affects mood, focus, and emotional resilience. Eliminating food groups—especially carbohydrates—or relying heavily on processed snacks can disrupt energy balance and contribute to mental fatigue, irritability, and decreased performance.

The next section explores how these dietary patterns influence not only physical performance but also emotional regulation and mental resilience.

The Food–Mood Connection: How Nutrition Affects Mental Health

The idea that the brain and gut are connected is not new. In 1822, a doctor treating a fur trader with a stomach wound began observing digestion through a permanent hole in the man's abdomen. He experimented by lowering bits of food into the stomach and noted that when the patient became irritated or angry, digestion visibly slowed. As other physicians confirmed similar findings, the connection between emotional states and gut function began to take shape (Mayer, 2016).



Even though many student-athletes may understand that poor nutrition increases injury risk or slows physical recovery, they may not realize how food affects mood, focus, and emotional resilience.

Today, research into the gut–brain axis continues to show how food influences our emotions, energy, and stress levels. Certain nutrients—often referred to as “mood foods”—have been shown to support emotional well-being by influencing neurotransmitters and gut bacteria (Liang et al., 2025, p. 2). These findings are especially applicable for student-athletes, who may not realize that daily food choices can impact not just physical performance but also mood, motivation, and mental focus (Liang et al., 2025). A growing body of research focused on athletes has confirmed that diet plays a key role in regulating stress behavior and brain function through the gut–microbiota–brain axis—a connection that becomes even more important under the physical and psychological demands of training and competition (Clark & Mach, 2016).

The following sections highlight how the eating patterns of student-athletes—often shaped by convenience, misconceptions, or cultural norms—can influence not only physical performance but also mental health and emotional resilience (Smith et al., 2024). They will address the importance of (and common misconceptions about) calorie intake, carbohydrates, protein, fats, and hydration.

Calorie Intake: Fueling Growth, Recovery, and Mental Well-Being

Calories are the foundation of every athlete's diet. No matter how perfectly balanced their carbs, protein, and fats may be, if student-athletes are not eating enough overall, their performance, recovery, and mood will suffer (Smith et al., 2024). Adolescence is a time of rapid growth and development that already requires more calories—and when you add in practices, games, and recovery, the need rises even more.

Depending on the frequency, intensity, and duration of their sport, high school athletes may require anywhere from



2,000 to 5,000 calories per day to meet their baseline energy needs (National Academies of Sciences, 2023). Yet studies show that many teen athletes underestimate their daily energy needs by several hundred calories (Jagim et al., 2024). This puts them at risk for low energy availability, which can progress into a condition called relative energy deficiency in sport, which affects everything from hormone health and bone growth to immune function, focus, and emotional resilience (Gould, Ridout, & Newton, 2023; Nickols, n.d.).

When student-athletes do not consume enough calories, they are also likely to miss out on key vitamins and minerals. These micronutrients act like tiny spark plugs that keep the body's systems running—from energy production and muscle repair to mood regulation and immune strength (Smith et al., 2024). Without sufficient calories, the body's metabolic processes slow, which can undermine optimal performance both on and off the field (Gropper & Smith, 2023). This slowed metabolic rate can also cause fatigue, lead to more injuries, and contribute to symptoms of anxiety and depression. Because signs of underfueling often appear gradually—such as mood changes, poor recovery, or a decline in school performance—coaches and school staff may miss the warning signs (Gould et al., 2023).

Calories takeaway tip

Encourage athletes to fuel their bodies throughout the day with balanced meals and snacks, especially around practices and games. A consistently underfueled body will not build strength or emotional resilience—no matter how hard one trains.

Carbohydrates: Fueling Focus, Energy, and Emotional Resilience

Carbohydrates are one of the most misunderstood nutrients in an athlete's diet. Many people believe carbs are *bad* or think they turn directly into fat. In truth, carbohydrates are the body's preferred source of fuel—and the brain depends mostly on glucose, a simple sugar that comes from the breakdown of carbs, for energy. If athletes do not consume enough carbs, the body will start converting protein into glucose to meet energy needs. This means protein is no longer available for its original purpose: building and repairing muscle tissue (Smith et al., 2024). That is why carbs are considered *protein-sparing*—they literally spare protein from being used for fuel so it can do its job in recovery and growth.

High school athletes need 45% to 65% of their daily calories from carbohydrates, the same as adults (Institute of Medicine, 2006). Yet many student-athletes—especially those in sports that emphasize weight or appearance, such as wrestling, ballet, or bodybuilding—intentionally or unintentionally reduce their carb intake. A recent study found that teen athletes significantly underestimated their carbohydrate needs, which can negatively impact performance, recovery, and mental well-being (Jagim et al., 2024).

Carbohydrates play a key role in emotional regulation. Eating carbs stimulates insulin release, which helps the amino acid tryptophan enter the brain. Tryptophan is the building block of serotonin, a chemical that supports mood and reduces stress (Gropper & Smith, 2023). When carbs are too restricted, athletes may experience irritability, low energy, and even symptoms of depression (Jacka, 2019).

Of course, not all carbs are created equal. Simple sugars—like those found in soda, candy, or even some protein bars—can cause blood sugar to spike and crash, leading to mood swings and fatigue (Gropper & Smith, 2023; Jacka, 2019). Complex carbs, such as whole grains, fruits, and starchy vegetables, release glucose more steadily and support longer-lasting energy. Timing matters too: high-fiber carbs are great during the school day, but athletes may want to limit them right before competition to avoid cramping or digestive discomfort (Smith et al., 2024).

Carbohydrate takeaway tip

Encourage athletes to focus on complex carbs throughout the day and pair them with a little healthy fat or protein to keep energy steady. For recovery, a 24-ounce glass of chocolate milk provides carbs, protein, and hydration—an easy and effective postworkout choice (Clark, 2025).

Protein: Building Strength and Mental Health

If carbs are often misunderstood as the *bad* macronutrient, protein is hailed as the *superhero* of the student-athlete diet. Protein shakes, powders, and bars have become part of sports culture—often treated like secret weapons to build muscle and improve performance. While protein is essential for growth and recovery, it is also surrounded by myths and marketing hype. The truth? Protein is abundant in our diets, and most Americans, including student athletes, meet or exceed their protein requirements (Clark et al., 2024). Student-athletes can get everything they need from real food—as long as they are consuming enough calories and a balanced diet (Clark et al., 2024; Smith et al., 2024).

Like adults, teen athletes should aim to get 20% to 30% of their total daily calories from protein (Institute of Medicine, 2006). Research shows that teens generally understand protein's importance but tend to overestimate how much they actually need. In one study, teen athletes misjudged their daily protein needs by more than 250 grams (Jagim et al., 2024). This often leads to high rates of protein supplement use, sometimes at the expense of more important nutrients like carbohydrates (Clark et al., 2024).

In fact, a 2024 study found that 94% of high school athletes reported using supplements, with many using six or more at a time. Common choices included sports drinks, protein bars, and powders—often influenced by parents, teammates, and coaches (Wardenaar et al., 2024). Protein bars are one of the most popular *grab-and-go* options for student-athletes, but many contain as much—or more—added sugar as a candy bar. When choosing a protein bar, encourage athletes to check the nutrition label and aim for one with at least two grams of fiber and no more than four grams of added sugar (fun fact: four grams of sugar equals about one teaspoon). Because added sugars are listed just below the total carbohydrates, this simple label check can lead to smarter fueling choices. For example, a bar with 12 grams of added sugar contains about

three teaspoons—making it easier to visualize and limit excess sugar intake.

Protein also plays a role in mental health. Moderate protein intake has been linked to improved mood and reduced symptoms of depression (Gerber et al., 2023). It supports neurotransmitter function, helping regulate mood, memory, and sleep (Mosunic, 2025). New research also shows that protein intake can influence the gut microbiome, an important factor in stress management and emotional well-being. Excessive protein, especially from supplements, may disrupt that balance (Zhang et al., 2024).

Overreliance on supplements can also contribute to disordered eating behaviors, such as body dysmorphia or binge eating, and may lead to fatigue, dehydration, or digestive issues (Vasiliu, 2023). That is why it is important to help athletes understand how to meet their protein needs through real, balanced meals.

Protein takeaway tip

Encourage student-athletes to focus on real food sources of protein, like eggs, dairy, beans, fish, poultry, and lean meats (Smith et al., 2024). Supplements are not usually necessary, and overusing them can crowd out other essential nutrients or lead to side effects that outweigh their benefits.

Fats: Fueling Recovery, Resilience, and Hormone Health

Student-athletes—especially those in weight-focused sports like wrestling, bodybuilding, or dance—often pay close attention to their body fat percentage and may try to cut fat from their diets. But dietary fat is essential for meeting the high energy demands of adolescence and training. Unlike carbohydrates and protein, which provide four calories per gram, fat provides nine calories per gram, making it a key player in helping athletes meet their overall caloric needs (Smith et al., 2024). Consuming enough fat helps maintain hormone balance, supports the immune system, and provides long-lasting energy—especially for sports that require endurance and mental focus (Smith et al., 2024). While healthy fats are essential, it's also important to avoid going overboard. Too much dietary fat—especially from fried or highly processed foods—can disrupt mood and focus. A balanced approach supports both the brain and the body (Gropper & Smith, 2023; Yao et al., 2022).

In addition to its biological benefits, fat also adds flavor, richness, and a smooth, creamy texture to food. These sensory qualities help make meals satisfying and enjoyable, which is important for building a healthy relationship with food (Smith et al., 2024). When athletes overlook these nonbiological factors, it can lead to overly restrictive eating patterns and increased stress around food—both of which may negatively affect mood and overall mental health. These risks are especially high in weight-focused sports, where athletes may feel pressure to cut fat or control their body size to meet performance expectations. According to the National Eating Disorders Association,

athletes in sports like wrestling, gymnastics, and dance are at increased risk for disordered eating patterns and body-image issues (Nickols, 2024n.d.).

Fats takeaway tip

Encourage athletes to include sources of unsaturated fats, like nuts, seeds, avocado, and olive oil, in their diets. These healthy fats support brain health, hormone balance, and emotional well-being—key components for both academic and athletic success.

Hydration: Supporting Mood, Memory, and Muscle Function

Staying hydrated is not just about preventing cramps or cooling off. For student-athletes, proper hydration is essential for mood, memory, focus, and muscle function (Zhang et al., 2019). Teen athletes should aim for about 14 cups of water daily, with an additional 10 to 15 ounces every 20 minutes of activity to support both brain and body performance (Children’s Hospital Los Angeles, 2019).

Even mild dehydration can lead to fatigue, tension, anxiety, and impaired concentration (Smith et al., 2024). It can also slow reaction time, impair decision making, and reduce athletic performance by up to 30% (Riebl & Davy, 2013). The tricky part? Thirst does not usually kick in until someone is already 3% to 5% dehydrated (Maughan & Shirreffs, 2019). That is why athletes should not wait until they feel thirsty—it’s smarter to hydrate consistently throughout the day (Children’s Hospital Los Angeles, 2019). Early signs of dehydration include headaches, dizziness, decreased urination, muscle cramps, and difficulty concentrating—symptoms that can sneak up on athletes during school or practice (Riebl & Davy, 2013).

Many student-athletes reach for sports drinks to stay hydrated. While they may be helpful during high-intensity training in hot weather or for activity lasting longer than an hour, plain water is still the best choice for most workouts and games. The American Academy of Pediatrics recommends using sports drinks sparingly and choosing water as the primary source of hydration (Capra et al., 2024).

Hydration takeaway tip

Remind student-athletes to drink water regularly throughout the school day—not just during practice. Encourage them to carry a reusable water bottle, take water breaks, and start hydrating well before activity. Save sports drinks for intense or long sessions in hot conditions, and teach athletes to recognize early signs of dehydration so they can stay sharp, strong, and focused.

Strategies and Recommendations

Here are practical, research-informed strategies that school professionals can implement to support student-athletes’ well-being.



Coaches, teachers, and mentors who demonstrate healthy habits—like staying hydrated, fueling before practice, or bringing balanced snacks—send a message louder than words.

Provide basic nutrition education

While district-level policies may limit changes to the formal curriculum, coaches and school staff can still incorporate basic nutrition education into everyday routines. Ideas include short nutrition messages during team talks, bulletin board reminders, collaboration with school cafeterias, or inviting local dietitians for team events. These efforts align with the CDC’s recommendation to integrate nutrition education across multiple touchpoints in the school environment (CDC, 2023).

One of the most powerful forms of nutrition education is modeling. Coaches, teachers, and mentors who demonstrate healthy habits—like staying hydrated, fueling before practice, or bringing balanced snacks—send a message louder than words. Partnering with parents can make these messages even more effective. Consider sending home a handout with meal ideas and nutrition tips (see Figure 1) or simple nutrition index cards with “grab-and-go” snack ideas, like homemade trail mix made from seeds, whole grain cereal, and dried fruit. These small actions help reinforce healthy habits beyond the school walls.

Focus on helping students understand the importance of balanced meals, adequate caloric intake, and the roles of carbohydrates, proteins, fats, and hydration in both physical performance and mental well-being (Fuller & Bird, 2025; Jagim et al., 2024; Smith et al., 2024).

Make hydration a priority

Even mild dehydration can lead to fatigue, headaches, trouble focusing, and increased stress. And because thirst does not typically kick in until someone is already dehydrated, it’s not a reliable cue (Riebl & Davy, 2013). That is why it’s important for everyone—not just athletes—to model healthy hydration habits throughout the day. Coaches, educators, and staff should normalize carrying water bottles, taking regular sips, and

Meal Ideas for Teen Athletes: Fuel for Performance and Mood

Breakfast Foods

Food	Function	Mood Impact
☐ Whole grains + protein/fat (e.g., waffles with peanut butter, toast with eggs)	Provides steady energy and sustained focus	Boosts serotonin and stabilizes mood
☐ Greek yogurt or fruit with nut butter	Delivers protein, probiotics, and healthy fats	Supports gut health and reduces stress
☐ Frozen fruit for a grab-n-go breakfast smoothie made with whole milk	Quick energy with natural sugars and fiber. Whole milk for calcium, vitamin D, protein, and higher calorie content to ensure adequate calories	Improves alertness and reduces fatigue

Lunch Foods

Food	Function	Mood Impact
☐ Lean protein + grains + veggies (wraps, pasta bowls, or rice bowls)	A balanced mix of protein, carbs, and fiber	Improves stamina, brain power, and mood
☐ Side salad or raw veggies with dip	Adds fiber and vitamins	Supports brain health and mood regulation
☐ Water or low-sugar sports drink	Hydration and electrolyte balance	Prevents fatigue and brain fog

Dinner Foods

Food	Function	Mood Impact
☐ Lean protein + roasted or stir-fried veggies + complex carbs	Supports recovery and muscle repair	Promotes mood stability and energy balance
☐ Baked or grilled entrée (e.g., chicken, tofu, salmon)	Provides protein and essential fats	Supports calmness and emotional resilience
☐ Whole-grain pasta or sweet potato	Complex carbs for evening recovery	Replenishes energy and reduces stress

Snacks

Food	Function	Mood Impact
☐ Protein + carbs (cheese sticks, crackers, trail mix)	Balanced mini meals for sustained energy	Reduces stress and supports alertness
☐ Smoothie or chocolate milk (post-workout)	Carb-protein combo for recovery	Replenishes glycogen and improves mood
☐ Fresh fruit or veggies with hummus	Natural fiber and hydration support	It helps regulate mood and energy

Figure 1. Parent Handout: Meal Ideas and Tips for Teen Athletes.

Parent Tips: Supporting Your Teen’s Nutrition and Mental Health

- ✓ Keep a variety of grab-and-go snacks available (string cheese, trail mix, fruit, Greek yogurt).
- ✓ Encourage regular meals—breakfast, especially, helps with focus and mood.
- ✓ Talk about food as fuel, not just weight or looks.
- ✓ Remind them to hydrate! Water is usually the best option.
- ✓ Support rest and recovery—sleep and downtime matter for mental health, too.
- ✓ Be aware of supplement use. Encourage real food first.
- ✓ Normalize conversations around stress, anxiety, and asking for help.
- ✓ Consider completing a suicide prevention course such as Question, Persuade, Refer (QPR, n.d.) to improve your ability to recognize the signs of potential suicide and to understand how to help an individual seek help when needed.

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Figure 1 (Continued)

encouraging hydration across all school settings. To help student-athletes stay hydrated:

- provide team water bottles to build routine and accountability;
- set hydration reminders using free mobile apps like WaterMinder or HydroCoach, which allow users to track fluid intake and send playful or personalized reminders (Jewell, 2023); and
- ensure access to cool, clean water before, during, and after practices and games.

Small strategies like these go a long way in promoting both mental and physical well-being. When hydration

becomes part of the team culture, performance and focus tend to follow. While nutrition and hydration form the foundation for physical readiness and mood regulation, they are only part of the equation. Emotional well-being requires just as much attention—especially for high school athletes navigating pressure, identity, and performance expectations.

Address mental health stigma in sports

Mental health is just as important as physical health, but for many high school student-athletes, speaking up about emotional struggles remains difficult—stigma, fear of judgment, and uncertainty about where to turn often prevent teens from seeking help (Barrow & Thomas, 2022). Coaches,

teachers, and staff can help reduce this stigma by creating safe spaces where athletes feel comfortable sharing how they are really doing—emotionally as well as physically. Normalize help-seeking behavior and open up conversations about how food, hydration, sleep, and stress all affect not just energy, but mood, focus, and resilience (Barrow & Thomas, 2022; Berding et al., 2021).

One powerful step is to offer suicide prevention training for athletes, families, and school staff. Programs like Question, Persuade, Refer (QPR) are often available for free through local nonprofit organizations and can help build a school culture of support and responsiveness (QPR Institute, 2022 n.d.). By reinforcing that it's okay to ask for help—and showing athletes that mental health matters—you strengthen the team from the inside out. And when those conversations and healthy habits extend beyond practice or the classroom, that is where real culture change begins—one small shared step at a time.

Bonus idea: Build a nutrition and wellness team space

Want to keep healthy habits top of mind for your student-athletes? Consider creating a private Facebook group or Google Space where players, parents, and coaches can connect around nutrition, hydration, and mental well-being. Use it to:

- share simple “snack of the week” ideas or easy recipes;
- post hydration reminders or fun nutrition challenges;
- celebrate athlete efforts and share team shout-outs;
- normalize everyday conversations around mood, stress, and self-care; and
- provide resources in a low-pressure, peer-supported environment.

This kind of digital space is free to set up and easy to maintain—but its impact can be powerful. When wellness becomes a shared team value, athletes are more likely to stay consistent, open up when they are struggling, and support one another both on and off the field.

Conclusion

Nutrition is more than just game-day fuel—it plays a central role in both physical and mental health. While student-athletes often focus on performance-enhancing strategies, many overlook how everyday food and hydration choices affect mood, stress levels, and emotional resilience. As adolescent mental health needs continue to grow, the food–mood connection deserves more attention from coaches, educators, and parents (Gerber et al., 2023; Jacka, 2019).

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