



BASEBALL & SOFTBALL

SPORTS NUTRITION MANUAL

The full reference for fueling health, performance, and recovery in a 7U–18U athlete. Written for coaches, parents, and older players.

2026–27 · COMPANION TO THE ATHLETE FUELING GUIDE

HOW TO USE THIS MANUAL

THE REFERENCE VOLUME

The Athlete Fueling Guide is the short version — the plate, the timing, the cooler, the fridge sheet. This manual is the long version: the reasoning underneath those rules, the protocols for specific situations, and the material coaches and parents need when a player asks a harder question.

Read the Guide first if you only read one. Come here when you need the detail: what to do with a rehabbing pitcher, how to order at a restaurant on the road, whether a supplement is worth considering, what to say to a fifteen-year-old who wants to cut carbohydrates.

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Everything here is general education for healthy athletes. It is not medical advice and it is not a substitute for an individualized plan. Any athlete with a medical condition, a food allergy, a specialized diet, diabetes, or a history of disordered eating should be working directly with their physician and a registered dietitian — ideally one board-certified in sports dietetics.

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WHAT NUTRITION ACTUALLY BUYS YOU

Food does not make a player faster the way a swing change does. What it does is decide how much of a player's training actually turns into ability, and how much of a season they are available for. Five returns, in rough order of how quickly you see them:

Energy that holds

Stable fuel across a nine-inning game and across three games on a Saturday. The most visible failure is a player whose sixth-inning at-bat looks nothing like their first.

Faster recovery

Less soreness, better output the next day. In travel ball, recovery between games is often the difference between a good weekend and a bad one.

Strength that sticks

A lifting program without enough food produces fatigue, not muscle. Food is what converts training stress into adaptation.

Growth and bone

These athletes are building the skeleton they will carry for life. Roughly 90% of adult bone mass is laid down by age 18. That window does not reopen.

Availability

Fewer missed weekends to illness, fewer soft-tissue problems, faster returns from the ones that happen. Talent on the bench does not help the team.

Focus

Blood sugar and hydration both affect reaction time, decision-making, and mood. A dehydrated, under-fed player makes worse reads and worse swings.

None of this requires precision. It requires consistency: eating enough, eating often, and drinking through the day. **Athletes who do the ordinary things reliably beat athletes who optimize occasionally.**

THE THREE JOBS OF FOOD

Every plate a player builds is doing three things at once. Naming them makes the plate easier to assemble without measuring anything.

Job one: protect

Fruit, vegetables, nuts, seeds

These carry the vitamins, minerals, fiber, and plant compounds that support immune function, healing, and recovery from inflammation.

Practical target: something with color at every meal, and variety across the week. Frozen counts. Canned counts. The best vegetable is the one the athlete will eat.

Job two: fuel

Carbohydrate

The fuel the body reaches for first in the short, explosive efforts that make up baseball and softball, and what keeps blood sugar — and therefore concentration — steady.

Practical target: a carbohydrate source at every meal and most snacks, sized up on heavy days and game days.

Job three: rebuild

Protein

Repairs tissue broken down in training and supplies raw material for growth, hormones, and immune cells.

Practical target: protein at every meal and most snacks — spread across the day, not stacked at dinner.

The fourth component

Fat, working quietly

It slows digestion, carries the fat-soluble vitamins A, D, E, and K, and supports hormone production during puberty.

Practical target: moderate amounts at most meals, and smaller amounts right before competition.

PLATES BY TRAINING DAY

A player's plate should not look the same on a Tuesday off-day as it does on a two-game Saturday. The protein and the produce stay roughly constant; **the carbohydrate is the dial you turn**. These are visual proportions, not measurements.

Light day — no practice, short skill work, or a rest day



Produce leads. Keep protein steady — a light day is still a growth day. This is the only day where trimming starch makes sense, and even then it is a trim, not a cut. Younger athletes should not be reducing food on rest days at all.

Standard day — practice, a lift, or a single game



The default. Roughly equal thirds of carbohydrate, protein, and produce, with fat as seasoning. This is what most plates should look like most of the time.

Heavy day — doubleheader, tournament, two-a-day, long showcase



Carbohydrate leads and fiber comes down — this is the day to favor white rice, regular pasta, and easily digested fruit over the highest-fiber options. Add snacks between games rather than trying to eat it all in two sittings.

How to size it without measuring

Use the athlete's own hand. A palm of protein, one to two cupped handfuls of carbohydrate, a fist or two of produce, a thumb of fat. Turn the carbohydrate up to two or three cupped handfuls on heavy days. Because the hand grows with the athlete, the same instruction works at 7U and at 18U.

CARBOHYDRATE

Carbohydrate is stored in muscle and liver as glycogen, and glycogen is what powers repeated high-intensity efforts. A baseball or softball game is not an endurance event, but a tournament weekend is: sprint, throw, swing, recover, repeat, for ten hours, three days running. Glycogen that is not replaced between games does not magically reappear.

Published athlete guidelines span roughly **3 to 12 grams per kilogram of body weight per day**, scaled to training load. Youth athletes commonly land in the **200 to 500 gram per day** range depending on how much they actually train, with a floor of about **130 grams a day** simply to supply the brain. Families do not need to count this. The practical version is the plate above: carbohydrate at every meal, more of it on heavy days.

Choosing carbohydrate

Build the base here

- Fruit of every kind
- Vegetables, including potatoes and sweet potatoes
- Rice, quinoa, barley, farro
- Oats and whole-grain cereal
- Whole-grain bread, bagels, tortillas, wraps
- Pasta, white or whole grain
- Beans and lentils
- Milk and yogurt

Fine in rotation

- White bread and white tortillas
- Crackers, pretzels, rice cakes
- Granola and cereal bars
- Flavored yogurt
- Tortilla chips
- Pancakes and waffles
- 100% juice
- Sports drinks during long, hot competition

Several of these are actively useful right before or during a game, where low fiber and fast digestion are the point.

Keep occasional

- Soda and fruit punch
- Candy and sugary cereal
- Doughnuts, pastries, cookies, cake
- Ice cream and frozen desserts
- Potato chips as a meal

Not forbidden. Not the foundation. A player who eats well the rest of the week can have a snow cone after the last game without it mattering.

A timing exception worth remembering

High-fiber choices are the better everyday default, and the wrong choice immediately before competition. Beans, bran cereal, and large raw salads in the hour before first pitch produce gas, bloating, and a bad inning. Go low-fiber and familiar close to game time; save the high-fiber options for the rest of the day.

PROTEIN

Protein is the raw material for muscle, tendon, bone matrix, hormones, and immune cells. Young athletes need more than their non-athlete classmates because they are repairing training damage and building a body at the same time.

Published recommendations for youth and adolescent athletes generally fall around **1.2 to 1.7 grams per kilogram per day** — roughly 0.55 to 0.8 grams per pound — with some sports nutrition sources extending to 2.0 g/kg for heavily training teenagers. Above roughly 2.5 g/kg there is no further benefit; the excess is simply burned or stored.

Distribution beats total

This is the finding most families have never heard. Research in young athletes points to moderate doses at regular intervals — about **0.25 to 0.35 g/kg per sitting, four to five times a day, every three to four hours** — keeping the body in a positive building state far longer than one large evening dose does. Breakfast is where most young athletes are short, and fixing breakfast alone often fixes the day.

1.2–1.7

grams per kilogram per day for most training youth athletes

4–5

protein-containing meals or snacks, spaced 3–4 hours apart

0

added benefit above roughly 2.5 g/kg — more is not better

Rough protein content, for reference

FOOD	APPROXIMATE PROTEIN
3–4 oz chicken, beef, pork, turkey, or fish	20–30 g
1 cup Greek yogurt or cottage cheese	20–25 g
1 can of tuna	~25 g
2 eggs	~12 g
1 cup milk or chocolate milk	~8 g
2 string cheese sticks	~14 g
2 tbsp peanut butter	~7 g
½ cup beans or lentils	~7–9 g

CHOOSING PROTEIN

Build the base here

- Chicken and turkey breast
- Lean beef, bison, venison
- Pork loin and center-cut chops
- Fish and seafood, grilled or baked
- Eggs and egg whites
- Milk, Greek yogurt, cottage cheese
- Beans, lentils, tofu, edamame
- Deli turkey, ham, roast beef

Fine in rotation

- Ribeye and fattier cuts
- Dark meat poultry
- Regular ground beef
- Bacon and sausage
- Full-fat cheese
- Jerky and meat sticks
- Protein bars with real protein content

Higher fat means slower digestion — good at dinner, poor ninety minutes before first pitch.

Keep occasional

- Fried chicken, fried fish, wings
- Fast-food burgers and fried sandwiches
- Bologna, salami, pepperoni
- Corn dogs and fried cheese

These sit heavy and offer less repair per bite. They are a road-trip reality, not a daily plan.

Plant-forward players

Plant-forward players can meet these targets, but it takes deliberate planning: protein at every meal, a variety of sources across the day, and attention to iron, zinc, calcium, and vitamin B12. That is a good reason to see a dietitian once rather than guess for a season.

FAT

Fat is the nutrient teenagers cut first when they decide to "eat clean," and cutting it is usually a mistake. It supplies energy for long days, carries vitamins A, D, E, and K, and supports the hormone production that drives growth and strength during puberty. Roughly a quarter to a third of daily intake from fat is a reasonable target; **dropping much below 20% starts to cause problems.**

CHOOSING FAT

Build the base here

- Olive oil and avocado oil
- Avocado and guacamole
- Nuts, seeds, and nut butters
- Salmon, tuna, sardines, trout
- Hummus and tahini
- Eggs
- Vinaigrette and pesto

Fine in rotation

- Butter and cream
- Cheese and full-fat dairy
- Canola and other neutral cooking oils
- Mayonnaise and creamy dressings
- Coconut oil

Keep occasional

- Deep-fried foods of any kind
- French fries and onion rings
- Partially hydrogenated oils in packaged baked goods
- Heavy cream and cheese sauces before competition

Omega-3s are worth targeting

The omega-3 fats in fatty fish support recovery, and most young athletes get very little of them. Two servings a week of salmon, tuna, sardines, or trout is a realistic goal. Walnuts, chia, and flax contribute a different form. Fish oil supplements for a minor should go through a parent and a physician like any other supplement.

DIETS, FADS, AND CUTTING CARBS

Teenage athletes hear about diets constantly, usually from social media and usually from adults whose goals have nothing to do with a growing athlete. Our position is simple: **we do not eliminate food groups from a developing athlete's diet unless a physician says to.**

WHAT WE'RE ASKED ABOUT MOST

Low-carbohydrate and ketogenic diets

These approaches can produce rapid weight loss, which is why they are popular. For an athlete in a power-and-sprint sport, that is the wrong trade. The evidence does not show performance benefits from ketogenic eating in endurance or high-intensity exercise, and high-intensity capacity — exactly what a hitter, pitcher, or baserunner depends on — is the thing most at risk. For an adolescent who also needs energy for growth, restricting the primary fuel source is a poor idea on top of a poor idea.

There are narrow situations where reducing carbohydrate for a period makes sense — a long injury layoff, for instance — and those are conversations for a dietitian and a physician, not a decision a fifteen-year-old should make from a video.

Intermittent fasting and skipped meals

Extended fasting windows conflict directly with what a growing, training athlete needs, which is regular fuel every three to four hours. Skipping breakfast is the most common informal version of this and it is the single habit we would most like to eliminate.

Detoxes, cleanses, and elimination trends

No evidence of benefit, real risk of under-fueling, and for some athletes a first step toward disordered eating. Not appropriate in this age group.

Cutting dairy or gluten without a diagnosis

Fine when there is a genuine allergy, intolerance, or celiac diagnosis — and those athletes should have a dietitian's plan to replace what they are losing. Removing these foods on a hunch usually just removes calcium, protein, and convenience from a diet that needed all three.

HYDRATION AND ELECTROLYTES

Dehydration shows up as early fatigue, cramping, reduced concentration, and a higher risk of heat illness. It is also the easiest thing on this list to fix. **Hydration is a daily habit, not a pre-game action.**

Fluid around training and competition

WINDOW	TARGET	NOTES
Through the day	Steady intake	Water is the default. Milk counts. 100% juice counts. Urine should be pale most of the day.
~4 hours before	16–20 oz	This is the window that actually moves hydration status. Sipping, not chugging.
10–15 min before	8–12 oz	Then use the bathroom before warm-ups.
During, under 60 min	3–8 oz every 15–20 min	Water is sufficient. Use thirst as the guide; never force a fixed volume on a young athlete.
During, over 60 min or hot	3–8 oz every 15–20 min, more in heat	Add sodium and carbohydrate — a sports drink. Teenagers in heat can need substantially more per hour.
After	~16–24 oz per pound lost	Continue with the recovery meal and through the evening.

Sweat rate

Sweat losses vary widely — younger athletes often lose roughly **11 to 25 ounces an hour**, while teenagers in hot conditions can approach **90**. The classic method for estimating it is weighing before and after a session, with each pound lost representing about 16 ounces of sweat. Use that sparingly and privately with young athletes: putting a scale in front of a developing player can create a body-weight focus we would rather avoid, and the estimate is rarely worth that cost. Urine color and thirst are usually enough.

CRAMPING, OVERDRINKING, AND WHAT NOT TO DRINK

Cramping

Cramping in a hot-weather athlete is usually tied to fluid and sodium losses rather than a lack of bananas. Athletes who cramp repeatedly tend to be heavy or salty sweaters and generally benefit from more sodium in the diet, salty snacks on tournament days, and a sports drink rather than plain water during long sessions. Persistent cramping deserves a conversation with a physician or athletic trainer.

Overdrinking is also a risk

Drinking large volumes of plain water across a long hot day can dilute blood sodium — a serious condition with headache, nausea, confusion, and swelling among its signs. If a player weighs more after a game than before it, they are drinking too much. On long, hot days fluid should carry sodium.

What not to drink

Energy drinks have no place in this age group; the American Academy of Pediatrics is explicit that stimulant-containing energy drinks do not belong in the diet of children or adolescents, and the National Federation of State High School Associations advises against their use by young athletes. Caffeine: none under 12, and no more than about 100 mg a day — roughly one cup of coffee — for ages 12 to 18. Soda and sweet tea are occasional drinks, not hydration.

PRE-GAME PROTOCOLS

The goal of the pre-game meal is a player who is fueled, hydrated, and comfortable — not full, not empty, not experimenting. **Nothing new on game day.**

THE PRE-GAME WINDOW

WHEN	WHAT IT LOOKS LIKE
3–4 hours out	A normal meal: carbohydrate-forward, moderate protein, low fat, low fiber. Begin deliberate fluid intake here. Grilled chicken with pasta and light red sauce. A turkey sub with fruit. Rice bowl with chicken and mild vegetables. Pancakes with eggs for an early game.
60–90 min out	A small, easily digested carbohydrate snack. Banana. Granola bar. Applesauce pouch. Pretzels. Toast with jam. Half a peanut butter and honey sandwich.
10–15 min out	8–12 oz of fluid, bathroom, warm-up.

Timing by game slot

FIRST PITCH	MAIN MEAL	TOP-OFF SNACK
7:00 p.m.	3:00–4:00 p.m.	5:30–6:00 p.m.
1:00 p.m.	9:00–10:00 a.m.	11:30 a.m.
10:00 a.m.	6:30–7:00 a.m.	8:30 a.m.
8:00 a.m.	Light breakfast or smoothie at 6:15–6:30	Small carb at the field if tolerated

For the earliest games, a full four-hour-out meal is not realistic and should not be forced. Something is far better than nothing — a bagel with peanut butter, cereal and milk, or a smoothie — followed by a real meal as soon as the game ends.

Avoid before playing

- Fried food, heavy cream and cheese sauces, and fatty meats — they digest slowly and sit heavy
- Large volumes of high-fiber food: beans, bran cereals, big raw salads, gas-forming vegetables like broccoli and cabbage
- Anything the athlete has not eaten before a game before

The nervous stomach

Some players cannot handle solid food before competition, especially at showcases or in playoff games. Liquid meals digest faster and are a legitimate answer: a smoothie with milk or a milk alternative, fruit, oats, and a spoonful of nut butter covers carbohydrate, protein, and fluid without sitting heavy. Practice it before a normal game first.

IN-GAME FUELING

Baseball and softball are stop-and-start sports with long games and longer days. The between-innings and between-games windows are real fueling opportunities, and the common error is reaching only for fast sugar — a gel, a sugary drink, a handful of candy — which spikes blood sugar and can leave a player flat thirty to sixty minutes later, which is to say in the late innings.

The better approach mixes something fast-acting with something slower: **carbohydrate paired with a little protein or fat**, so energy arrives and then keeps arriving.

Steady options — the default

- Half a peanut butter and honey or jelly sandwich
- Sunflower seed butter sandwich for nut-allergy athletes
- A real-food nutrition bar with some protein in it
- Crackers with cheese or turkey
- Trail mix
- Oranges, grapes, pineapple, mandarins
- A sports drink on long or hot days

Fast sugar — only when it's needed

- High-sugar sports drinks
- Energy chews and gels
- Fruit snacks, rice crispy treats

Useful for an immediate lift late in a long day, or for a player who has clearly run out of fuel. Not the plan for a whole tournament.

Practical dugout rule

Fluid every half-inning, food in the longer gaps. Nothing greasy, nothing enormous, nothing that requires two hands and a napkin.

RECOVERY AFTER PLAY

Three jobs after the last out: refuel, repair, rehydrate.

Refuel

Carbohydrate to replace glycogen. On a heavy day, or with another game coming within a few hours, get a substantial carbohydrate hit inside the first hour.

Repair

Protein alongside it, roughly 0.3 g/kg — for most players a glass of milk plus a sandwich, or a cup of Greek yogurt.

Rehydrate

Fluid with sodium after hot or long days, continued through the evening rather than all at once.

On an ordinary single-game day, the next normal meal does all three and no special protocol is needed. The urgency scales with how depleted the athlete is and how soon they play again.

Between games on the same day

GAP	WHAT TO EAT
Under 1 hour	Fluid first, then fast carbohydrate. Fruit, pretzels, a pouch, a few crackers. Nothing heavy.
1–2 hours	Small carb-and-protein snack: half a sandwich, yogurt and granola, crackers with turkey and cheese.
2–3 hours	A real mini-meal, finished at least an hour before warm-ups.
3+ hours	A normal meal, then a small carbohydrate snack 60 minutes before the next first pitch.

Sleep

No fueling plan survives chronic short sleep, which raises appetite for exactly the foods we want to keep occasional, slows recovery, and is associated with higher injury rates in young athletes. Ages 6 to 12 need 9 to 12 hours; ages 13 to 18 need 8 to 10. After a night game, a small carbohydrate-and-protein snack helps a player settle and supports overnight repair.

TRAVEL, RESTAURANTS, AND ROAD RULES

Travel ball breaks eating patterns: unfamiliar food, unpredictable timing, long drives, and a concession stand as the default option. **The fix is planning, not willpower.**

Before you leave

- Book a room with a fridge and microwave when possible
- Pack the cooler the night before, not the morning of
- Pack shelf-stable backups: bars, jerky, nut butter packets, crackers, shelf-stable milk
- Make the first stop a grocery store, not a restaurant
- Refill water bottles at every opportunity

Food safety

- Perishable food out no more than two hours — one hour above 90°F
- Cooler in the shade, lid closed, plenty of ice
- Hand sanitizer in the bag; players eat with dirty hands otherwise

Ordering at a restaurant

- Choose grilled, baked, roasted, or broiled over fried
- Ask how it is prepared — "grilled" often arrives in butter or cream sauce
- Sauces and dressings on the side
- Watch for the words creamy, crispy, smothered, alfredo, breaded, loaded
- Add a starch: rice, potato, bread, pasta — this is the fuel, especially mid-tournament
- Skip fried appetizers; broth soup or a side salad instead
- Water or milk to drink; save soda for the drive home
- Finish eating at least two hours before playing

Drive-through, when it's the only option

- Grilled chicken sandwich, a plain burger, or a wrap
- Add fruit or a side that is not fried
- Milk, water, or juice
- Breakfast: eggs on a muffin or biscuit plus milk and fruit beats nothing at all

MICRONUTRIENTS

Most deficiencies found in young athletes cluster in a handful of nutrients, and each has a direct performance or injury consequence.

NUTRIENT	WHY IT MATTERS	FOOD SOURCES
Iron	Carries oxygen. Low iron causes fatigue that does not resolve with rest, poor endurance, and heavy legs. Adolescent girls and athletes eating little red meat are at highest risk.	Beef, turkey, chicken, tofu, beans, lentils, spinach, fortified cereal. Pair with vitamin C to absorb more.
Calcium	Bone mass, which is being built now and cannot be built later. Underpins stress-fracture risk for the rest of an athlete's career.	Milk, yogurt, cheese, fortified plant milks, fortified juice, canned salmon with bones, tofu, leafy greens.
Vitamin D	Needed to use calcium; tied to muscle function. Athletes training indoors or through winter show far higher deficiency rates — relevant for any athlete in a northern climate from November to April.	Fortified milk and cereal, salmon, tuna, eggs. Testing before supplementing.
Zinc	Wound healing and immune function. Matters most during injury recovery.	Beef, poultry, seafood, beans, nuts, seeds, whole grains, fortified cereal.
Magnesium	Muscle function and energy metabolism; commonly low in teenage diets.	Nuts, seeds, beans, whole grains, leafy greens, dark chocolate.
Vitamin B12	Red blood cells and nerve function. The nutrient most at risk in athletes who cut out animal foods.	Meat, fish, eggs, dairy, fortified cereals and plant milks.

Do not supplement iron without a blood test

Iron is the nutrient families are most likely to self-prescribe and one of the easier ones to overdo, with real toxicity risk. Suspected iron deficiency is a physician conversation and a lab draw, not a guess at the pharmacy.

STAYING AVAILABLE

The most reliable way to improve a season's results is to be on the field for all of it. Illness and soft-tissue problems take more weekends from our players than anything else, and both are influenced by fueling.

- **Eat enough.** Chronic under-fueling suppresses immune function. Athletes who are constantly sick are frequently athletes who are constantly under-fed.
- **Sleep.** The single largest lever on illness risk in this age group.
- **Get protein and produce daily.** Immune cells are built from protein and supported by the vitamins and minerals in fruit and vegetables.
- **Hydrate.** Dry indoor air over the winter and long spring travel days are both risk factors.
- **Don't share bottles.** A dugout is an efficient transmission system. Label bottles, don't pass them.
- **Wash hands before eating at a field.** Dirt, sunflower seeds, and shared snack bags are how a team gets sick together.

Eating when sick

Keep fluids up, keep something in the tank, and do not try to train through a fever. Appetite drops when sick and that is normal, but hydration should not. Return-to-play decisions belong to the family and the physician, not to the tournament schedule.

INJURY AND REHAB NUTRITION

Nutrition during an injury is the most commonly mishandled situation in youth sports. The instinct is to cut calories because the athlete "isn't doing anything." That instinct slows healing and costs muscle.

The central principle

Healing is metabolically expensive. An injured limb still requires energy to repair, and immobilized muscle loses mass quickly when protein and energy intake fall. Total food may come down modestly if training volume drops, but protein should hold steady or go up, and it should be spread across the day. When in doubt, err toward eating enough.

REHAB: WHAT HELPS, WHAT TO WATCH

What helps

- **Protein at every meal and snack** — this is the priority. Leucine-rich sources (dairy, eggs, meat, fish, soy) are particularly useful for limiting muscle loss.
- **Enough total energy.** Under-eating during rehab is the most common error.
- **Vitamin C and protein-rich foods** for collagen, which is what tendon, ligament, and bone matrix are made of.
- **Zinc and vitamin A** for wound healing — meat, seafood, eggs, dairy, beans, nuts, orange and dark green produce.
- **Calcium and vitamin D** for bone injuries specifically.
- **Omega-3 fats** from fish, at food levels.
- **Fluids.** Hydration supports circulation to healing tissue.

What to be careful with

- **Aggressive calorie cutting.** Costs muscle and slows repair.
- **Megadose antioxidant supplements.** The early inflammatory response is part of how tissue heals; blunting it with high-dose vitamin C or E supplements may work against recovery. Get these from food.
- **Routine NSAID use** without medical direction — a physician's call, not a training-room habit.
- **"Healing" supplement stacks** marketed to injured athletes. Almost none are appropriate for minors; see the supplement chapter.

A long rehab — surgery, a fracture, anything measured in months — is exactly the situation where a referral to a registered dietitian pays for itself. Ask the treating physician for one.

THE FEMALE ATHLETE

Our softball players face a set of nutrition considerations that get far less coverage than they deserve, largely because most sports nutrition research has been conducted on men.

FIVE THINGS THAT DESERVE MORE ATTENTION

- **Iron demand is higher.** Menstruating athletes lose iron monthly on top of training losses, and iron deficiency is one of the most common and most missed causes of unexplained fatigue and declining performance in teenage girls. Persistent fatigue warrants a physician visit and a lab draw.
- **Bone development is time-limited.** Adequate energy, calcium, and vitamin D during the teenage years determine peak bone mass. Under-fueling during these years has consequences that show up as stress fractures years later.
- **Menstrual function is a vital sign.** Periods that become irregular, or stop, in a training athlete are not a normal consequence of hard work and are not something to wait out. They frequently signal that energy intake is not matching demand, and they warrant a medical evaluation.
- **Carbohydrate intake is often low.** Female athletes as a group tend to under-consume carbohydrate relative to training demands, which drags down both performance and energy availability.
- **Body-image pressure is real.** The language adults use around female athletes — about uniforms, about bodies, about "leaning out" — carries weight. Keep it off the field entirely.

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GROWTH AND BODY COMPOSITION

This is where a nutrition manual can do the most damage if it is careless, so we will be explicit about our approach.

For athletes under roughly 13

There is no body composition program. There is eating enough, sleeping enough, and training. We do not weigh these players, set body targets, discuss body fat, or put them on plans to gain or lose. Puberty will do more for size and strength than any diet, and introducing weight as a performance variable this early creates problems rather than athletes.

ADDING FUNCTIONAL SIZE, IN ORDER

For older teens who have entered puberty and train seriously, adding functional size is a reasonable goal pursued in a specific order:

1. **Structured strength training first.** Extra food without a training stimulus adds fat, not the mass a pitcher wants.
2. **Close the gaps in the eating day.** Most athletes trying to gain are not short at dinner; they are missing breakfast and eating nothing from late morning to evening.
3. **Add rather than replace.** An extra snack or two, plus calorie-dense additions to existing meals — milk instead of water, nut butter on the toast, avocado on the sandwich, oil on the pasta, an extra scoop of rice.
4. **Use liquids when appetite is the limit.** Milk with meals and fruit-and-nut-butter smoothies add a lot without filling a player up the way another plate does.
5. **Protein spread across the day,** per the protein chapter.
6. **Sleep,** which is where growth actually happens.
7. **Patience.** Useful mass comes slowly. Rapid jumps are usually fat or water.

For athletes whose physician has raised weight as a health concern in either direction, the plan should come from that physician and a registered dietitian — not from a coach, a teammate, or this manual.

UNDER-FUELING RED FLAGS

Chronic low energy availability — taking in consistently less than training and growth require — is more common in youth sports than overeating and considerably more dangerous. Sports medicine refers to the resulting syndrome as **relative energy deficiency in sport (RED-S)**. It affects male and female athletes, and it is frequently invisible because the athlete looks fine and trains hard.

SIGNS, AND WHAT TO DO ABOUT THEM

Signs

- Fatigue that does not improve with rest
- Performance declining despite training harder
- Frequent illness; injuries that heal slowly
- Stress fractures or repeated bone injuries
- Growth or pubertal development that appears to stall
- Menstrual cycles that become irregular or stop
- Irritability, low mood, poor concentration
- Skipping meals, eliminating food groups, rigid food rules, anxiety about eating, or exercising to compensate for food

Response

- Do not address it with stricter eating rules or a conversation about discipline.
- Refer to the athlete's physician — these signs overlap with other medical conditions and deserve a real evaluation.
- Ask for a registered dietitian, and for a mental health professional if food or body image is causing distress.
- Coaches: raise concerns privately with parents. Never discuss an athlete's body or eating in front of teammates.

Players: if eating has started to feel stressful, or if food rules are taking up more of your head than baseball or softball is, tell a parent, a coach, or a doctor. This is common in our sport and there is real help for it.

SUPPLEMENT SAFETY

The dietary supplement industry sells tens of thousands of products, markets aggressively to young athletes, and operates with far less oversight than families assume. Products are not approved for safety or accuracy before sale, and analyses have repeatedly found supplements containing substances that are not on the label — including compounds banned in collegiate and Olympic sport.

Our position: **food first, and for athletes under 18, food essentially always.** Pediatric guidance is consistent that nutritional needs in this age group are best met by a balanced diet rather than by products. No supplement compensates for an athlete who is not eating enough.

PRODUCT BY PRODUCT

Energy drinks — not permitted

Stimulant-containing energy drinks have no place in the diet of children and adolescents per the American Academy of Pediatrics, and the NFHS advises young athletes not to use them. They are not sports drinks and they are not allowed in our dugouts.

Creatine — not under 18

The American College of Sports Medicine and the AAP advise against use below 18, and most labels say the same. Athletes in puberty are already adding size and strength rapidly; creatine has not been shown to add to that in this group, and long-term effects on growing bodies have not been studied.

Protein powders and bars

Convenience food, not a requirement. Reasonable for an athlete who genuinely cannot meet needs from meals — a very busy schedule, a restricted diet, a large athlete with a small appetite. Whole food is cheaper and does more.

Vitamins and minerals

Not needed by a young athlete eating a varied diet. Warranted in specific situations — a documented deficiency, a restricted diet, a diagnosed condition — and those are physician decisions based on testing, not guesses.

Third-party certification, and why it matters for college-bound players

If a physician and parent decide a supplement is warranted, use only products carrying independent certification — NSF Certified for Sport or Informed Sport / Informed Choice. These programs test for banned substances and verify label accuracy. Certification does not make a product necessary or effective; it only reduces the contamination risk.

For high school athletes with college aspirations: a positive test costs eligibility regardless of intent, and "I didn't know it was in there" is not a defense. Check the current NCAA banned-substance list before any product enters the house.

Every supplement decision for a minor goes through a parent and a physician. No coach, trainer, teammate, or vendor should be recommending products to our players.

IMPLEMENTATION BY AGE

Same principles, very different delivery. **Pitching the 18U conversation at a nine-year-old is how you produce an anxious eater.**

GROUP	FOCUS	SKIP ENTIRELY
7U–12U	Eat breakfast. Eat every few hours. Water bottle always. Something with color most meals. Try foods more than once. Parents run the shopping and the cooler; the player's only job is eating what's offered and drinking.	Grams, calories, macros, body weight, body composition, supplements of any kind, and all discussion of anyone's body.
13U–15U	Growth spurts and rising training load. Protein at breakfast. Fueling before and after training. Sleep. Starting to pack their own bag and cooler. Basic awareness that under-fueling is a real risk.	Weight targets, restrictive diets, supplements, calorie tracking.
16U–18U	Independence: cooking a few meals, ordering well on the road, managing a showcase day. Understanding portion targets and protein distribution. Supplement literacy and NCAA eligibility. Preparing for college dining halls.	Body composition programs without medical oversight; anything they read on social media as a substitute for this chapter.

COACH AND PARENT PLAYBOOK

Coaches

- Build fluid breaks into practice; don't make hydration a reward
- Require a water bottle, labeled, not shared
- Give families the game schedule early enough to plan meals around it
- Push tournament directors for adequate recovery time between hot-weather games
- Talk about what food does, never about what a player's body looks like
- Never use food, or running, as punishment
- Know the heat illness signs and act on them immediately
- Raise fueling concerns privately with parents
- Recommend no supplements — that is a family and physician decision

Parents

- Keep the house stocked; availability drives most eating behavior
- Pack the cooler the night before
- Eat meals together when the schedule allows
- Don't label foods good or bad, and don't comment on your own body in front of them
- Make breakfast non-negotiable
- Protect sleep, including after night games
- Bring fatigue, frequent illness, or menstrual changes to the pediatrician
- Ask for a registered dietitian referral if you want a plan built for your athlete

Team meals and travel

When the team eats together on the road, choose venues with a carbohydrate source, a grilled protein, and something green — pasta places, sandwich shops, grills. Order early enough that players finish two hours before playing. If the team eats after a late game, that meal matters more than convenience does.

MYTHS AND QUESTIONS

Will protein powder make my son bigger?

No. Training makes an athlete bigger; food supports it. Powder is a convenient protein source, nothing more, and most players who eat regular meals already hit their targets without it.

Should a player cut carbs to lean out?

Not in this age group, and not without medical oversight. Carbohydrate is the fuel for the sport's dominant efforts, and restricting it in a growing athlete tends to reduce performance before it changes anything visible.

Are sports drinks necessary?

Not for a normal practice or a single cool-weather game, where water is sufficient. They earn their place once activity passes an hour, in heat, and across tournament days — that is what the sodium and carbohydrate are for.

What about pickle juice or mustard for cramps?

Anecdotaly popular, weak evidence, and unlikely to hurt. The more reliable answer for a cramping athlete is more fluid and more sodium across the day, not a shot of something in the third inning.

Is chocolate milk really a recovery drink?

It is carbohydrate, protein, fluid, and sodium in a form a twelve-year-old will actually drink. Not magic, genuinely convenient, and better than most things sold for the purpose.

My player eats constantly and stays thin. Is something wrong?

Usually not — rapid growth plus heavy training burns a great deal of energy. Keep food available, add calorie-dense options, and don't force it. If weight loss is happening, or growth appears to have stalled, see the pediatrician.

MORE QUESTIONS WE GET

How much water per day?

There is no single number that fits a 7U player and an 18U pitcher in July. Drink through the day, drink more around training, and use urine color as the check. Pale most of the day is the target.

Can a player eat fast food during a tournament?

Yes, and most will. Choose grilled over fried, add a non-fried side and a real drink, and time it at least two hours before playing.

Is caffeine okay for a high schooler before a big game?

We don't recommend it. Guidance caps intake at about 100 mg a day for ages 12 to 18 and advises none below 12, and using caffeine as a performance aid is not appropriate for our age groups.

When should we see a sports dietitian?

A long rehab, a restricted or specialized diet, a medical condition like diabetes or celiac, persistent fatigue, any concern about eating behavior, or a college athlete who wants an individualized plan. A single consultation often resolves more than a season of guessing.



Eat enough. Eat often. Drink all day.

USA Prime Baseball & Softball · 2026–27

SOURCES AND DISCLAIMER

This manual is an original USA Prime Baseball & Softball document compiled from current pediatric and sports nutrition guidance. Principal sources include the joint position stand of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine on nutrition and athletic performance; American Academy of Pediatrics guidance on youth hydration, sports and energy drinks, and performance-enhancing substances; recent peer-reviewed reviews of nutritional recommendations for young and adolescent athletes; published work on nutritional support for injury and rehabilitation; and hydration and fueling resources from the National Athletic Trainers' Association and TrueSport.

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- National Athletic Trainers' Association — Healthy Hydration for Young Athletes; Nutrition for Injury Recovery and Rehabilitation.

Disclaimer

This manual is general nutrition education for healthy athletes aged 7 to 18. It is not medical advice, not individualized nutrition advice, and not a substitute for care from a qualified professional. Athletes with medical conditions, food allergies or intolerances, restricted or specialized diets, diabetes, or any history of disordered eating should work directly with their physician and a registered dietitian. Consult a parent and a physician before starting any supplement or any plan intended to change body weight. Coaches and team staff should not provide individualized nutrition prescriptions, diagnose nutritional conditions, or recommend supplements to players.



USA Prime Baseball & Softball

Sports Nutrition Manual, 2026–27 season • 7U–18U

Companion volume to the Athlete Fueling Guide.

Food first. Eat enough, eat often, drink through the day.

General nutrition education for healthy athletes. Not medical or individualized nutrition advice.