

Nutrition is not a separate sport – it is part of training. **What you eat directly determines how well you move, think, and recover.** This guide is built specifically for goalkeepers: an athlete who combines explosive power, endurance, and sharp mental focus in a single 90-minute match. Every recommendation comes from applied performance nutrition science adapted for youth and teen athletes in the Texas heat.

01 / ENERGY SYSTEMS – HOW YOUR BODY POWERS A GAME

Goalkeepers use **all three energy systems** in a single match. Understanding which system does what tells you exactly what to eat and when.

PHOSPHAGEN

0–8 sec · ATP-CP
Explosive saves, sprints, dives.
Fueled by creatine phosphate stored in muscle.

GLYCOLYTIC

10 sec – 2 min · Fast Glycolysis
Cross-box scrambles, repeated jumping. Fueled by stored carbohydrates (glycogen).

OXIDATIVE

2+ min · Aerobic System
90 minutes of sustained focus, positioning, and movement. Fueled by carbs + fats + oxygen.

GK Takeaway: Your position demands short bursts of maximum effort (Phosphagen) layered over 90 minutes of aerobic work (Oxidative). Carbohydrates fuel both. Fat fuels endurance. Protein rebuilds everything after.

02 / CALORIES & TOTAL DAILY ENERGY EXPENDITURE (TDEE)

WHAT IS TDEE?

Your **Total Daily Energy Expenditure** is the total calories your body burns in a day – BMR (energy to stay alive) plus all activity. For a young goalkeeper, TDEE is higher than most peers because of training volume, growth demands, and high mental output.

BMR FOUNDATION

Males: $BMR \approx 88 + (13.4 \times kg) + (4.8 \times cm) - (5.7 \times age)$

Females: $BMR \approx 447 + (9.2 \times kg) + (3.1 \times cm) - (4.3 \times age)$

Multiply BMR by activity factor (1.55–1.75 for athletes in daily training) to get TDEE.

AGE GROUP	TRAINING DAY CALORIES	REST DAY CALORIES	GOAL
Ages 8–12	1,800 – 2,200 kcal	1,600 – 1,900 kcal	Meet caloric needs for growth + training
Ages 13–16	2,300 – 2,800 kcal	2,000 – 2,300 kcal	Support rapid growth + increasing volume
Ages 17–19	2,800 – 3,400 kcal	2,400 – 2,800 kcal	Maximize performance + body composition

Surplus vs. Deficit: Growing athletes should **never** aggressively cut calories. A small surplus (100–200 kcal above TDEE) supports muscle growth and recovery. Under-eating leads to fatigue, slower reflexes, and increased injury risk.

03 / MACRONUTRIENTS – THE 5-5-3-2 METHOD

The **5-5-3-2 Method** is a practical macro framework for athlete meal building. Numbers represent grams per pound of bodyweight per day.

5

G/LB

Carbohydrates
(fuel & glycogen)

5

KCAL/LB

Calorie Baseline
(multiply bodyweight)

3

G/LB

Protein
(muscle repair)

2

G/LB

Fat
(hormones & endurance)

CARBOHYDRATES 4 KCAL/G

- Primary fuel for explosive saves and endurance
- Stored as glycogen in muscles and liver
- Best sources: oats, rice, sweet potato, fruit, whole grain bread, pasta
- Time highest carb intake before and after training

PROTEIN 4 KCAL/G

- Repairs muscle tissue broken down in training
- Supports growth for developing athletes
- Best sources: chicken, eggs, Greek yogurt, fish, lean beef, whey protein
- Spread across all meals – don't stack it all at once

FATS 9 KCAL/G

- Fuel for aerobic endurance and brain function
- Required for hormone production and vitamin absorption
- Best sources: avocado, olive oil, nuts, salmon, nut butter, seeds
- Avoid fats immediately pre-training (slow digestion)

STEP-BY-STEP MACRO CALCULATOR

1. Find bodyweight in pounds (e.g., 130 lbs)
2. Protein target: $130 \times 0.8-1.0 = 104-130g$ protein/day
3. Carbs (training day): $130 \times 2.0-2.5 = 260-325g$ carbs/day
4. Fat target: $130 \times 0.4-0.5 = 52-65g$ fat/day
5. Calorie check: $(protein \times 4) + (carbs \times 4) + (fat \times 9) =$ should match TDEE estimate above

04 / NUTRIENT TIMING – WHEN YOU EAT IS AS IMPORTANT AS WHAT YOU EAT

6-8 AM BREAKFAST	10-11 AM MID-MORNING	12-1 PM LUNCH	60-90 MIN PRE PRE-TRAIN	WITHIN 30 MIN RECOVERY	BEFORE BED OVERNIGHT
High carb + protein. Oats, eggs, fruit. Rebuild overnight fasting deficit.	Light snack. Greek yogurt, banana, peanut butter + rice cake. Keep energy stable.	Largest meal. Protein + complex carbs + vegetables. Fuel the afternoon.	Fast carbs + light protein. Banana + PB, rice + chicken, toast + honey.	30g protein + fast carbs. Whey shake + banana or chocolate milk. Start repair NOW.	Slow protein (casein). Cottage cheese, Greek yogurt, or casein shake. Overnight repair.

J4GK Session Timing: Ages 8–10 train 5–6pm · Ages 11–14 train 7–8pm · Ages 15–19 train 8–9pm. Eat your pre-training meal 60–90 minutes before your session. Recovery snack or shake immediately after. Do not skip the post-training window – this is when muscles rebuild.

05 / GAME DAY NUTRITION

GAME DAY RULES

- **No new foods on game day.** Only eat what you've trained with.
- High carbs, moderate protein, very low fat and fiber before kickoff.
- Avoid heavy meals within 2 hours of kickoff.
- Sip water consistently from wake-up through warmup.
- Have a halftime snack ready – banana, orange slices, or sports chews.
- Begin recovery nutrition within 30 minutes of final whistle.

TIME BEFORE KICKOFF

WHAT TO EAT

3–4 hours before	Rice/pasta + chicken + vegetables + fruit
60–90 min before	Banana + peanut butter, or toast + honey
30 min before	8–12 oz water + optional sports chew or gel
Halftime	Banana, orange slices, or sports chews + water
Within 30 min after	Protein shake or chocolate milk + banana
2–3 hours after	Full recovery meal: protein + carbs + vegetables

06 / HYDRATION – TEXAS HEAT DEMANDS MORE

Dehydration of just **2% of bodyweight** causes a measurable drop in reaction time, decision-making, and physical output. Training in Southlake, TX means hydration is a non-negotiable priority from April through October.

AGES 8-12

50-60 oz

baseline daily

AGES 13-16

64-80 oz

baseline daily

AGES 17-19

80-100 oz

baseline daily

TRAINING DAYS

+20-32 oz

add above baseline

GAME DAYS

+32-48 oz

add above baseline

SIGNS YOU'RE UNDER-HYDRATED

- Urine is dark yellow (target: pale straw color)
- Headache or dizziness during training
- Muscle cramps – common in goalkeepers diving on hard ground
- Slower reaction time and mental fog
- Fatigue earlier than normal in session

ELECTROLYTES – NOT JUST WATER

- Sweat removes **sodium, potassium, magnesium, and chloride** – plain water doesn't replace these
- Add electrolyte tabs, coconut water, or low-sugar sports drink on training/game days
- Sodium-rich foods post-training (salted nuts, pretzels) aid rehydration
- Avoid sugary sodas and energy drinks – they dehydrate and crash blood sugar

07 / MICRONUTRIENTS – THE DETAILS THAT SEPARATE GOOD FROM ELITE

NUTRIENT	WHY IT MATTERS FOR GKs	BEST FOOD SOURCES	DAILY TARGET
B-Vitamins (B1, B2, B3, B6, B12)	Convert food into usable energy; nervous system function and reaction speed	Eggs, chicken, fish, dairy, leafy greens, fortified cereals	Met through whole food diet
Vitamin E	Antioxidant; reduces muscle damage from explosive training; immune function	Almonds, sunflower seeds, avocado, olive oil, spinach	15 mg / day
Magnesium	Muscle relaxation; sleep quality; reduces cramps; 300+ enzymatic reactions	Dark chocolate, pumpkin seeds, spinach, black beans, almonds	240–420 mg / day
Vitamin D3	Bone strength; immune function; muscle fiber recruitment; low in most athletes	Salmon, fortified milk, eggs, sunlight (15–20 min)	1,000–2,000 IU / day
Calcium	Bone density during growth years; muscle contraction and nerve signaling	Greek yogurt, milk, cheese, fortified OJ, broccoli	1,000–1,300 mg / day
Iron	Oxygen transport; fatigue prevention; especially important for female athletes	Lean beef, spinach, lentils, fortified cereal (pair with Vitamin C)	8–15 mg / day
Zinc	Immune function; wound healing; hormone production in older teen males	Beef, pumpkin seeds, chickpeas, cashews, dairy	8–11 mg / day



08 / SAMPLE MEAL PLANS BY AGE GROUP (TRAINING DAY)

PLAN A — AGES 8–12 · ~1,800–2,000 KCAL · ~100G PROTEIN · ~240G CARBS · ~55G FAT

Focused on growth support, energy for training, and building healthy eating habits

BREAKFAST 7:00 AM	1 cup oatmeal + banana + 2 scrambled eggs + 8 oz milk	~430 kcal · 22g P · 62g C · 12g F
SNACK 10:30 AM	Greek yogurt (plain, low-fat) + ½ cup mixed berries + granola	~280 kcal · 15g P · 38g C · 5g F
LUNCH 12:30 PM	Turkey + cheese sandwich on whole grain + apple + carrots w/ hummus + water	~480 kcal · 28g P · 58g C · 14g F
PRE-TRAIN 3:30 PM	Banana + 1 tbsp peanut butter + 8 oz water	~175 kcal · 4g P · 28g C · 5g F
POST-TRAIN 6:15 PM	8 oz chocolate milk + rice cake w/ peanut butter	~280 kcal · 12g P · 40g C · 8g F
DINNER 7:00 PM	Grilled chicken breast + 1 cup white rice + steamed broccoli + olive oil	~450 kcal · 38g P · 46g C · 9g F

PLAN B — AGES 13–16 · ~2,300–2,600 KCAL · ~130G PROTEIN · ~300G CARBS · ~70G FAT

Designed for rapid growth phase, increased training intensity, and hormonal development

BREAKFAST 7:00 AM	3 eggs scrambled + 2 slices whole grain toast + 1 cup OJ + banana	~560 kcal · 28g P · 72g C · 16g F
SNACK 10:00 AM	Protein bar (20g+ protein) + apple + 12 oz water	~320 kcal · 22g P · 40g C · 8g F
LUNCH 12:30 PM	Chicken rice bowl: 5 oz chicken + 1.5 cups rice + black beans + salsa + avocado	~620 kcal · 42g P · 72g C · 14g F
PRE-TRAIN 5:30 PM	Toast + honey + 1 scoop whey in water · 60–90 min before 7pm session	~310 kcal · 28g P · 38g C · 4g F
POST-TRAIN 8:15 PM	Whey protein shake + banana + handful of pretzels (sodium repletion)	~380 kcal · 28g P · 54g C · 4g F
DINNER 9:00 PM	Lean ground beef or salmon + pasta + marinara + side salad w/ olive oil	~560 kcal · 36g P · 58g C · 16g F

PLAN C — AGES 17–19 · ~2,800–3,200 KCAL · ~155G PROTEIN · ~360G CARBS · ~80G FAT

Performance-focused nutrition for competitive and college-bound goalkeepers

BREAKFAST 7:00 AM	4-egg omelette w/ veggies + 2 slices toast + 1.5 cups OJ + banana	~680 kcal · 36g P · 84g C · 18g F
SNACK 10:00 AM	Cottage cheese + mixed fruit + almonds + 16 oz water	~380 kcal · 28g P · 36g C · 12g F
LUNCH 12:30 PM	Grilled salmon or chicken + 2 cups rice + roasted vegetables + Greek yogurt	~720 kcal · 48g P · 80g C · 16g F
PRE-TRAIN 6:30 PM	Whey shake + rice cakes w/ honey + banana · 60–90 min before 8pm session	~420 kcal · 32g P · 58g C · 4g F
POST-TRAIN 9:15 PM	Whey shake + electrolyte drink + rice cake w/ PB + banana	~480 kcal · 34g P · 64g C · 8g F
BEFORE BED 10:30 PM	Casein protein shake or 1 cup cottage cheese + handful of almonds	~360 kcal · 32g P · 18g C · 14g F

09 / GOALKEEPER GROCERY LIST

PROTEINS

- Chicken breast (boneless)
- Lean ground beef (90/10)
- Salmon / tilapia fillets
- Canned tuna (in water)
- Eggs (1 dozen+)
- Greek yogurt (plain)
- Cottage cheese (low-fat)
- Whey protein powder
- Casein protein powder
- String cheese / cheese slices
- Turkey deli meat (low sodium)
- Canned chickpeas / lentils
- Black beans (canned)
- Edamame

CARBOHYDRATES

- Oats / oatmeal (rolled)
- Brown rice / white rice
- Sweet potatoes
- Whole grain bread (100%)
- Whole wheat pasta
- Rice cakes (plain)
- Bananas
- Apples / oranges / berries
- Orange juice (100%)
- Granola (low sugar)
- Pretzels (post-training snack)
- Honey (pre-training)
- Sports chews / gels
- Electrolyte drink / tabs

FATS + VEGETABLES

- Avocados
- Almonds / mixed nuts
- Natural peanut butter
- Almond butter
- Olive oil (extra virgin)
- Pumpkin seeds / sunflower seeds
- Dark chocolate (85%+)
- Broccoli (fresh or frozen)
- Spinach / kale
- Bell peppers
- Baby carrots
- Hummus (for snacking)
- Tomatoes / cucumber
- Salsa (low sodium)

10 / SUPPLEMENT TIERS – FOOD FIRST. SUPPLEMENTS SECOND.

Supplements fill gaps – they don't replace meals. Ensure your athlete is eating consistently, sleeping 8–10 hours, and training regularly before adding any supplement. Consult a doctor before introducing supplements for athletes under 15.

◆ DIAMOND TIER – FOUNDATION SUPPLEMENTS (HIGHEST EVIDENCE)

Whey Protein	20–40g within 30 min post-training	Fastest-absorbing protein. Directly kickstarts muscle protein synthesis after training. Use when whole food recovery meals aren't accessible immediately.
Creatine Monohydrate	3–5g daily (ages 16+, with approval)	Increases phosphocreatine stores – directly fuels the Phosphagen system. Improves explosive power (saves, sprints), strength, and recovery speed. Best-researched supplement in sports science.

★ GOLD TIER – HIGH-VALUE SUPPLEMENTS (STRONG EVIDENCE)

Omega-3 / Krill Oil	1–3g EPA+DHA daily with meals	Reduces training-induced inflammation; supports joint health, brain function, and reaction time. Critical for athletes with high contact/impact volume.
Vitamin D3	1,000–2,000 IU daily with food	Most athletes are deficient. Supports bone density, immune function, and muscle fiber recruitment. Evening indoor training = less sunlight = supplement is important.
Electrolyte Supplement	Training + game days (especially summer)	Replaces sodium, potassium, and magnesium lost through sweat. Prevents cramps and maintains hydration. Plain water alone is insufficient on high-sweat days in Texas heat.
Caffeine (Ages 17+)	1–3 mg/kg bodyweight, 30–60 min pre-session	Proven ergogenic – improves focus, reaction time, and endurance. Use conservatively. Avoid within 6 hours of bedtime. Not recommended for athletes under 16.

● SILVER TIER – SUPPORTIVE SUPPLEMENTS (MODERATE EVIDENCE)

Multivitamin	1 serving daily with breakfast	Insurance for micronutrient gaps. Not a replacement for vegetables. Choose sport-specific or high-quality brand.
Magnesium Glycinate	200–400 mg before bed	Supports muscle relaxation, reduces cramping, and improves sleep quality. Excellent for athletes with 8–9pm sessions who need faster sleep onset.
Casein Protein	20–30g before bed after late sessions	Slow-digesting protein that provides sustained amino acid release overnight (6–8 hours). Especially useful for 8pm+ training sessions where dinner is late and light.
B-Complex Vitamin	1 serving daily with breakfast	Supports energy metabolism and nervous system function. Important during periods of high training volume or limited dietary variety.

11 / BUILDING CONSISTENCY – HABITS OVER PERFECTION

DAILY NON-NEGOTIABLES

- **Eat breakfast every day** – athletes who skip breakfast have measurably slower reaction times by afternoon
- **Hit your protein target** – spread it across 4–5 meals, not one big hit
- **Drink water before you're thirsty** – thirst is already early dehydration
- **Pre- and post-training meals are mandatory** – not optional
- **Sleep 8–10 hours** – more recovery happens in sleep than in any supplement

TRACKING & TOOLS

- **MyFitnessPal** – free app for tracking daily intake and macros. Use 2–4 weeks to learn your baseline, then use intuition.
- **Sunday meal prep** – cook proteins and carbs in bulk. Removes decision fatigue on school + training nights.
- **Pack a bag snack** – always have a banana, rice cake, or protein bar ready so you're never caught without a pre/post option.
- **80/20 rule** – 80% of meals hit your targets. 20% flexibility keeps this sustainable. Be consistent, not perfect.

THE GOALKEEPER NUTRITION STANDARD

You train to stop goals that no one else can stop. Your position demands more focus, more athleticism, and more mental resilience than any other on the field. Your nutrition has to match that standard. Feed your body like the athlete you're becoming – not the one you were last season. Every meal is a training decision.