



— PLAYER FUELLING GUIDE —

NOT EATING ENOUGH IS WRECKING YOUR GAME

What low energy availability does to your body, hormones and future — and how to fuel like the player you're trying to become.

WINDOW

AGES 14–20

PROTEIN

20–40G / MEAL

THE RULE

EAT BEFORE + AFTER



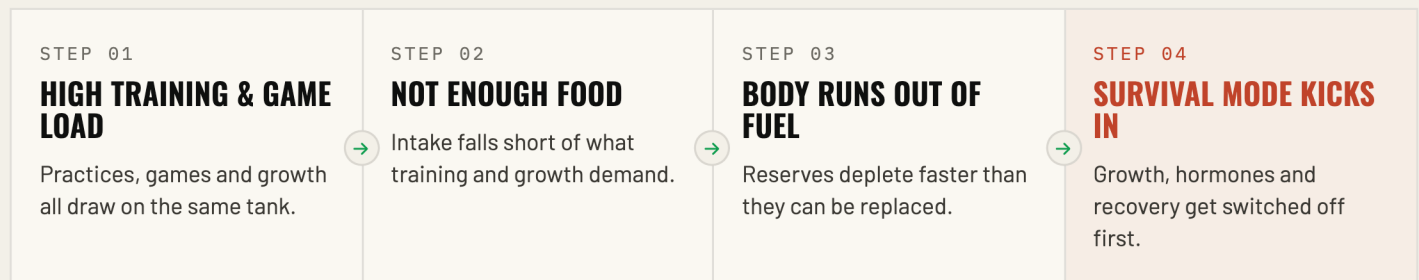


WHAT IS LOW ENERGY AVAILABILITY?

Elite hockey burns enormous energy. Eat too little to cover it, and your body quietly shifts into survival mode.

Elite hockey demands huge amounts of energy — hard training, heavy games, and constant growth. When you don't eat enough to cover all of it, your body goes into **survival mode**. It starts rationing fuel away from anything that isn't immediately life-saving — like building muscle, releasing growth hormones, and maturing normally.

■ HOW THE TANK RUNS DRY



■ WHERE YOUR FUEL GOES

Approximate proportions, for illustration

TRAINING + MOVEMENT

50%

BASIC BODY FUNCTIONS — breathing, heart

30%

GROWTH, HORMONES & RECOVERY — cut FIRST when underfuelled

20%

In survival mode your body treats growth and hormones as **optional** — the exact things that make you bigger, stronger and faster.

HORMONES — THE REAL DAMAGE



Hormones are your body's chemical messengers — they tell you to grow, build muscle and mature. Underfuelling shuts them down.

● MOST IMPORTANT FOR HOCKEY

TESTOSTERONE DROPS

It builds muscle, drives strength gains and fuels your competitive edge. Underfuelled, your body makes far less — slower muscle growth even when you train hard, longer recovery, and slower physical maturation.

Evidence linking LEA to suppressed testosterone in male athletes is growing, though less extensive than in female athletes.

● AFFECTS HEIGHT & FRAME

GROWTH HORMONE DISRUPTED

Your body releases growth hormone mostly while you sleep. Underfuelling disrupts the system — GH stops working properly even when released. You may never reach your genetic potential for height or frame size.

● LONG-TERM DAMAGE RISK

BONE DENSITY DECLINES

Underfuelling during your peak bone-building years (roughly 14–20) can reduce bone density — raising your risk of stress fractures and long-term skeletal weakness. A serious concern in a contact sport like hockey.

● RECOVERY & SLEEP

THYROID SLOWS DOWN

Your thyroid controls your metabolism — how fast your body runs. Low energy drops thyroid levels, leaving you sluggish, cold and mentally foggy. Recovery takes longer, sleep quality falls, and your mood suffers.

THE THROUGH-LINE

Every one of these systems runs on energy you have to **eat**. Starve the tank and the body protects your heartbeat first — trading away the muscle, height and recovery you're training all summer to build.

WHAT IT COSTS YOU **ON THE ICE**



Underfuelling doesn't stay in the lab. It shows up in your stride, your shot, your head and your health — every single shift.

01 • OUTPUT

SPEED & POWER DROP

Less muscle plus lower testosterone equals slower legs and a weaker shot. Fast-twitch fibres can't fire when underfuelled.

02 • ENGINE

ENDURANCE TANKS

You burn through glycogen faster and can't replenish it. You gas out earlier in every period — and stay gassed.

03 • MIND

DECISION-MAKING SUFFERS

Low blood sugar and poor sleep slow your reaction time and make it harder to read the play as it develops.

04 • HEALTH

INJURIES TAKE LONGER TO HEAL

Without the right nutrients, tissue repair slows. A normal knock can sideline you for weeks instead of days.

05 • MINDSET

MENTAL HEALTH HITS

Chronic underfuelling links to increased anxiety, depression and irritability — the opposite of a winning mindset.

06 • DEVELOPMENT

PUBERTY CAN BE DELAYED

Low energy delays normal maturation. You may fall behind teammates and struggle to compete on size and strength.

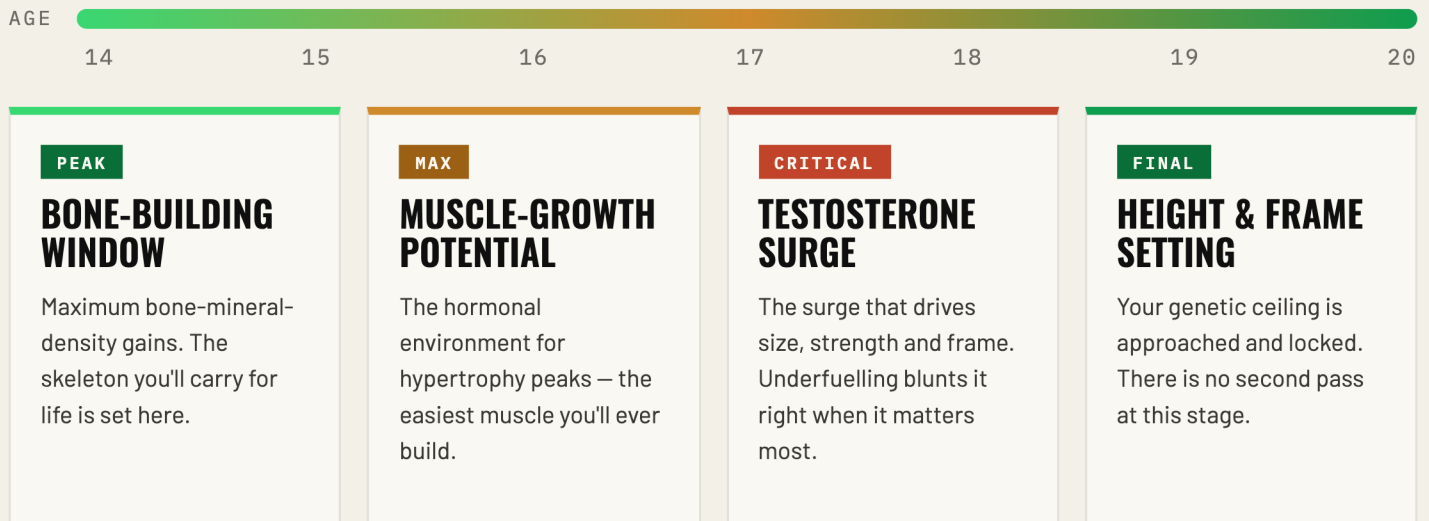
THE PATTERN

Slower, weaker, more fragile, foggier. None of these are about effort — you can train as hard as you want, but an empty tank caps every output on this list. **Fuel is the multiplier.**



THE MATURATION WINDOW — WHY TIMING MATTERS

Ages 14–20 are your one shot at peak development. Some of what you build — or lose — here is permanent.



⚠ TIME-LIMITED — SOME DAMAGE IS PERMANENT

Miss this window by underfuelling and some effects are difficult or impossible to reverse. **Bone density not built in adolescence is hard to recover.** Growth-hormone pulses suppressed during key years cannot be recaptured. This is a one-time opportunity — don't waste it.

BUILD IT NOW OR LOSE IT FOR GOOD.

FUEL LIKE A PRO

The fix is simple and entirely in your control. Six habits that keep the tank full and the hormones working.



1 EAT BEFORE AND AFTER EVERY SESSION

A meal or snack within 1-2 hours refills glycogen and starts repair. Another session within 8 hours? Eat as soon as you can.

2 NEVER SKIP BREAKFAST ON GAME DAYS

Even if nerves kill your appetite — carbs and protein before a game protect your energy stores and decision-making.

3 PROTEIN EVERY 3-4 HOURS

Testosterone and GH need protein to work. Aim for 20-40g per meal — chicken, eggs, dairy, fish or a shake.

4 CARBS ARE NOT THE ENEMY

They're your primary fuel for high-intensity hockey. Pasta, rice, oats and bread keep the glycogen tank topped up.

5 MORE FOOD DOES NOT MEAN MORE FAT

At your training load and growth stage, eating enough builds muscle — not fat. Under-eating is the bigger risk.

6 TALK TO YOUR NUTRITIONIST

Losing weight unintentionally, constantly tired, not recovering between games? Those are warning signs — speak up.



THE BOTTOM LINE

EAT TO COMPETE. FUEL TO WIN.

Talent and training only pay out if the tank is full. Fuel every session, protect the window, and you'll arrive bigger, stronger and harder to knock off the puck — exactly the player every team wants.

JOHN BRYAN & CANDACE NAKAGAWA

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Reference: Relative Energy Deficiency in Sport (REDs) — IOC Consensus Statement 2023 (Mountjoy et al., Br J Sports Med 2023); supporting evidence from REDs endocrine review (Endocrine Reviews 2024) and male-athlete LEA literature.