Energy Drinks, Pre-Workout, and Your Athletes: The Evidence-Based Conversation

A complete, evidence-based breakdown of energy drinks and pre-workout supplements for adolescent and young adult athletes — what's safe, what's dangerous, how to talk about it, and what your team policy should say.

ACCESS
Free resource

AUDIENCE
coach / parent

READ TIME
8 min

AUDIENCE
Coach + Parent

WHY THIS MATTERS

Your athletes are already having the conversation.

Energy Drinks, Pre-Workout, and Your Athletes: The Evidence-Based Conversation

QUICK START

Start here

A complete, evidence-based breakdown of energy drinks and pre-workout supplements for adolescent and young adult athletes — what's safe, what's dangerous, how…

WHY TEAMS PUSH BACK

The can is rarely the real solution to low energy

- Most athletes are tired because food, sleep, or hydration is off.
- Pre-workout habits often hide an under-fueled school day.

SAFER ALTERNATIVE

Fix the afternoon gap before reaching for a stimulant

- A banana, crackers, yogurt, or sandwich solves more than a can does.
- Water and a real snack are lower risk and easier to coach.

HYDRATION AND SLEEP

The collateral damage often lands after practice

- Athletes may sleep worse, recover worse, and show up flat again the next day.
- Drinks marketed as hydration are not the same as a hydration plan.

Cardiac Risk: This Is Not a Small Number

The cardiac risk associated with energy drinks in adolescents is documented in the peer-reviewed literature.

The cardiac risk associated with energy drinks in adolescents is documented in the peer-reviewed literature. The American Academy of Pediatrics published a clinical report documenting adverse events including seizures, stroke, renal failure, and sudden cardiac death in children and adolescents following energy drink…

The mechanism is multifactorial: high caffeine doses increase heart rate and blood pressure; taurine and other compounds affect ion channels in cardiac cells; in athletes with undiagnosed structural heart abnormalities (hypertrophic cardiomyopathy being the most concerning), stimulant loads can be the trigger for…

Caffeine: The Active Ingredient Behind All of It

Let's start with caffeine because it's doing the vast majority of the work in almost every energy drink, pre-workout, and "focus" supplement on the market.

> **MONSTER ENERGY (16 OZ)**
>
> **160 mg**

> **RED BULL (8.4 OZ)**
>
> **80 mg**

> **CELSIUS (12 OZ)**
>
> **200 mg — exceeding our athlete's daily safe limit in one can**

> **ALANI NU (12 OZ)**
>
> **200 mg**

> **A TYPICAL "PRE-WORKOUT" SCOOP**
>
> **150–400 mg depending on brand**

Energy Drink vs. Sports Drink vs. Water: Comparison Chart

> **FEATURE**
>
> **Energy Drink (typical)**
>
> Sports Drink
>
> - Water

> **PRIMARY FUNCTION**
>
> **Stimulant/alertness**
>
> Fuel + hydration
>
> - Hydration

CAFFEINE

80–300 mg

0 mg

- 0 mg

SUGAR

0–54g

14–34g

- 0g

ELECTROLYTES

Minimal

Yes (Na, K)

- No

Coach Action Item

This week, run a 5-minute team education block:

- **Show one real energy drink label**
- **Highlight caffeine dose and total stimulants**
- **Give athletes one safer pre-training alternative (carb snack + hydration)**
- **Share your written team policy with athletes and parents**

Unpacking the Energy Drink Label

Caffeine is the star, but most energy drinks bundle in several other ingredients.

SUGAR

Most traditional energy drinks contain 26–54 grams of sugar per serving. This provides real, short-term energy — but…

B VITAMINS (B6, B12, NIACIN)

Every energy drink is loaded with them. The marketing implies they're energy-producing. The reality is that B vitamins…

TAURINE

An amino acid that's often listed prominently. It plays roles in cardiac function and antioxidant activity. At the…

GUARANA

A plant extract that contains caffeine — typically more caffeine per gram than coffee beans. When a product lists…

PROPRIETARY BLENDS

When you see this on a label, it means the manufacturer is not required to disclose individual ingredient doses — only…

Pre-Workout Supplements: The Riskier Territory

Energy drinks are regulated as beverages under FDA oversight.

BETA-ALANINE

The ingredient that causes the "tingle" sensation (paresthesia). It's a precursor to carnosine, which buffers acid in…

CITRULLINE

An amino acid that increases blood arginine levels, which supports nitric oxide production and vasodilation. There's…

DMAA (1,3-DIMETHYLAMYLAMINE)

This is where the conversation gets serious. DMAA is a synthetic stimulant that the FDA has explicitly warned is not a…

DMHA, ERIA JARENSIS, SYNEPHRINE

A family of stimulants that operate similarly to DMAA. Treat them the same way.

QUICK REFERENCE

Key targets to keep in view

Use these as planning anchors when you turn the manual into weekly actions.

MAIN ISSUE

unknown dose and poor timing

Treat this as a decision anchor, not a trivia stat.

BEST SUBSTITUTE

snack plus water plus sleep

Treat this as a decision anchor, not a trivia stat.

COACH JOB

set the team norm early

Treat this as a decision anchor, not a trivia stat.

COACH TAKEAWAYS

Common miss

These are the cues worth repeating before the week gets busy.

Default team stance: No casual energy drink routine.

Food and water first.

Fix first: Lunch quality.

Pre-practice snack and sleep.

Escalate: Frequent use.

Use on an empty stomach or with restriction.

WHAT TO DO NEXT

Use it this week

Set the team rule early: solve tired practices with food, fluids, and sleep before stimulants.

BOTTOM LINE

Most athletes need a better snack plan, not a stronger can.

RELATED TOOL

Supplement checker

Keep the recovery stack evidence-based.

Source topics: energy drinks athletes • caffeine adolescents • pre-workout supplements • DMAA dangerous • teen caffeine safety • EFSA caffeine guidelines