A DIGITAL GUIDEBOOK

# The Lifter’s Supplement Guide

## Vitamins, minerals and supplements for people who train.



What they do. How much to take. When they fit. Foods to pair with them.

19 entries • Goal-based plans • Training-day timing • Pairings • Label checks

## Food, sleep and consistent training come first. Supplements fill gaps.

For education only, not medical advice. Check with a doctor before starting supplements, especially if pregnant, on medication, or with health conditions. Choose third-party tested products (e.g. Informed Sport, NSF).

START HERE

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## The evidence key

A — Strong evidence

B — Good for many

C — Optional / skip

## A simple starter stack

1. Creatine 3–5 g daily
2. Protein powder if you fall short on protein
3. Vitamin D3 in darker months
4. Caffeine before hard sessions (optional)

## Food-photo note

Photos illustrate foods associated with each entry; they do not imply that every pictured food contains the supplement or supplies the stated dose. Plant omega-3 sources provide mainly ALA, not EPA/DHA. Creatine is found in animal foods, not beetroot or spinach. Unfortified seaweed and mushrooms are not reliable vitamin B12 sources.

PICK YOUR GOAL

# Strength & muscle

The short list that actually moves the needle on getting bigger and stronger.

**A · Creatine Monohydrate**
3–5 g per day

**A · Protein Powder (Whey / Plant)**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food

**A · Caffeine**
3–6 mg per kg body weight

**A · Vitamin D3**
1,000–4,000 IU per day

**B · Magnesium**
200–400 mg per day (glycinate or citrate)

**B · Electrolytes (Sodium, Potassium)**
300–600 mg sodium per hour of heavy sweating

**B · Beta-Alanine**
3.2–6.4 g per day

**B · Ashwagandha**
300–600 mg root extract per day (KSM-66 or Sensoril)

**Optional**
Citrulline Malate

**Simple version**
Creatine every day, protein every day, sleep. Everything else is tuning.

PICK YOUR GOAL

# Fat loss

Keep the muscle you have while eating less, and make the deficit bearable.

**A · Creatine Monohydrate**
3–5 g per day

**A · Protein Powder (Whey / Plant)**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food

**A · Caffeine**
3–6 mg per kg body weight

**A · Vitamin D3**
1,000–4,000 IU per day

**B · Magnesium**
200–400 mg per day (glycinate or citrate)

**Simple version**
Protein high, caffeine before sessions, creatine so you don't lose strength.

PICK YOUR GOAL

# Endurance

Last longer: fuel, fluid, oxygen delivery and a higher tolerance for the burn.

**A · Protein Powder (Whey / Plant)**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food

**A · Caffeine**
3–6 mg per kg body weight

**B · Omega-3 (Fish Oil)**
1–3 g combined EPA+DHA per day

**B · Magnesium**
200–400 mg per day (glycinate or citrate)

**B · Electrolytes (Sodium, Potassium)**
300–600 mg sodium per hour of heavy sweating

**B · Beta-Alanine**
3.2–6.4 g per day

**B · Iron**
Only as advised after a blood test

**B · Vitamin B12**
250–1,000 mcg per day if plant-based

**B · Beetroot Juice (Nitrates)**
400–800 mg nitrate (~500 ml juice or a concentrate shot)

**Optional**
Citrulline Malate, Tart Cherry

**Simple version**
Caffeine, salt and beetroot before. Iron only if a blood test says so.

PICK YOUR GOAL

# General health

Cover the shortfalls that training on its own won't fix.

**A · Creatine Monohydrate**
3–5 g per day

**A · Protein Powder (Whey / Plant)**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food

**A · Vitamin D3**
1,000–4,000 IU per day

**B · Omega-3 (Fish Oil)**
1–3 g combined EPA+DHA per day

**B · Magnesium**
200–400 mg per day (glycinate or citrate)

**B · Zinc**
10–25 mg per day

**B · Iron**
Only as advised after a blood test

**B · Vitamin B12**
250–1,000 mcg per day if plant-based

**B · Ashwagandha**
300–600 mg root extract per day (KSM-66 or Sensoril)

**B · Collagen Peptides**
10–15 g per day, with vitamin C

**B · Vitamin K2**
100–200 mcg MK-7 per day

**Optional**
Calcium, Tart Cherry

**Simple version**
Vitamin D, omega-3 and magnesium. The rest depends on what you eat.

TRAINING DAY · 60–30 min out

# Before training

Top up energy and focus. Optional — worth it before hard sessions only.

**Caffeine**
3–6 mg per kg body weight · 30–60 min before training.

**Electrolytes (Sodium, Potassium)**
300–600 mg sodium per hour of heavy sweating · During long or hot sessions.

**Beta-Alanine**
3.2–6.4 g per day · Daily, split doses.

**Citrulline Malate**
6–8 g · 60 min before training.

**BCAAs**
Not needed with enough protein · —

**Collagen Peptides**
10–15 g per day, with vitamin C · An hour before tendon-heavy work, or any time for skin.

**Beetroot Juice (Nitrates)**
400–800 mg nitrate (~500 ml juice or a concentrate shot) · 2–3 hours before the session.

**Simple version**
Coffee or a caffeine pill 30–45 min out.

TRAINING DAY · Sips as you go

# During training

Only needed when the session is long, hot or very sweaty.

**Electrolytes (Sodium, Potassium)**
300–600 mg sodium per hour of heavy sweating · During long or hot sessions.

**Simple version**
Water for most sessions. Salt past ~60 min.

TRAINING DAY · 0–60 min after

# Right after

Refill and repair. The easiest slot to remember your basics.

**Creatine Monohydrate**
3–5 g per day · Any time, daily. No loading needed.

**Protein Powder (Whey / Plant)**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food · Spread over the day; post-workout is convenient.

**BCAAs**
Not needed with enough protein · —

**Tart Cherry**
30 ml concentrate (or ~500 ml juice) per day · Evening, or the two days after a hard session.

**Simple version**
Protein shake with creatine, then a proper meal.

TRAINING DAY · With meals

# Any time, daily

These work because you take them every day — the clock doesn't matter.

**Creatine Monohydrate**
3–5 g per day · Any time, daily. No loading needed.

**Vitamin D3**
1,000–4,000 IU per day · With a meal containing fat.

**Omega-3 (Fish Oil)**
1–3 g combined EPA+DHA per day · With meals.

**Magnesium**
200–400 mg per day (glycinate or citrate) · Evening.

**Beta-Alanine**
3.2–6.4 g per day · Daily, split doses.

**Zinc**
10–25 mg per day · With food.

**Iron**
Only as advised after a blood test · With vitamin C, away from coffee.

**Vitamin B12**
250–1,000 mcg per day if plant-based · Any time.

**Calcium**
Only top up to reach ~1,000 mg/day total · Separate from iron.

**Ashwagandha**
300–600 mg root extract per day (KSM-66 or Sensoril) · Daily. Evening if sleep is the goal.

**Collagen Peptides**
10–15 g per day, with vitamin C · An hour before tendon-heavy work, or any time for skin.

**Vitamin K2**
100–200 mcg MK-7 per day · With a meal containing fat — same slot as your D3.

**Tart Cherry**
30 ml concentrate (or ~500 ml juice) per day · Evening, or the two days after a hard session.

**Simple version**
Vitamin D in winter, magnesium at night.

01 · Supplement · TIER A

# Creatine Monohydrate



The most researched sports supplement. Refills your muscles' quick-energy (ATP) stores.

- More strength and power
- Faster muscle gain
- Better high-intensity reps

**Dose**
3–5 g per day

**When**
Any time, daily. No loading needed.

**Watch out**
May add 1–2 kg of water weight in muscle. Drink enough water.

**Find it in food / related foods**
Beetroot · Spinach · Beef · Salmon

02 · Supplement · TIER A

# Protein Powder (Whey / Plant)



A convenient way to hit your daily protein target.

- Muscle repair and growth
- Better recovery
- Helps keep you full

**Dose**
20–40 g per serving; aim for 1.6–2.2 g protein per kg body weight daily from all food

**When**
Spread over the day; post-workout is convenient.

**Watch out**
It's food, not magic. Pick third-party tested brands.

**Find it in food / related foods**
Lentils · Chickpeas · Edamame · Green peas · Greek yogurt

03 · Supplement · TIER A

# Caffeine



A proven stimulant that lowers perceived effort.

- More endurance and strength
- Sharper focus
- Less fatigue

**Dose**
3–6 mg per kg body weight

**When**
30–60 min before training.

**Watch out**
Avoid within 6–8 h of bedtime. Max ~400 mg/day for most adults.

**Find it in food / related foods**
Coffee · Green tea · Cacao · Dark chocolate

04 · Vitamin · TIER A

# Vitamin D3



A hormone-like vitamin most people lack, especially in winter.

- Bone strength
- Muscle function
- Immune support

**Dose**
1,000–4,000 IU per day

**When**
With a meal containing fat.

**Watch out**
Get a blood test if supplementing high doses long term.

**Find it in food / related foods**
Sun-exposed mushrooms · Egg yolks · Salmon

05 · Supplement · TIER B

# Omega-3 (Fish Oil)



Healthy fats (EPA & DHA) often low in Western diets.

• Joint comfort

• Heart health

• May reduce soreness

**Dose**
1–3 g combined EPA+DHA per day

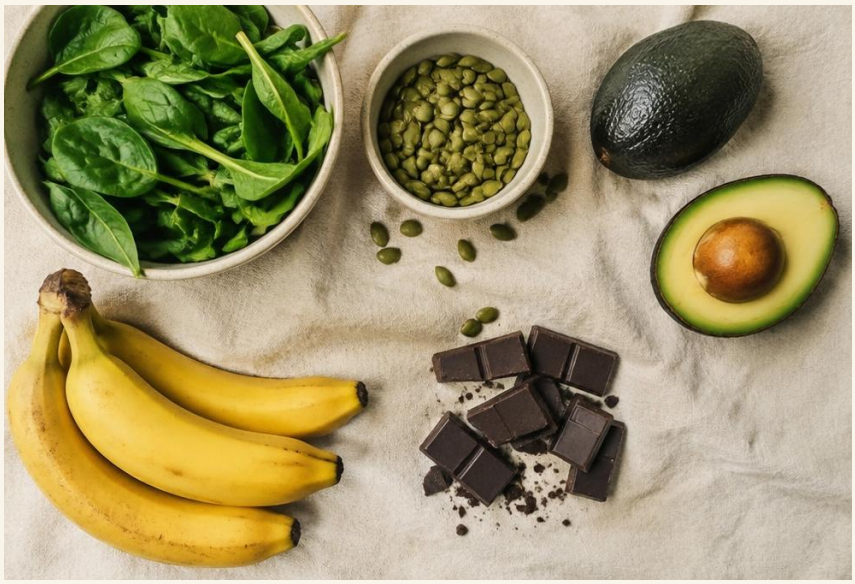
**When**
With meals.

**Watch out**
Talk to your doctor if on blood thinners.

**Find it in food / related foods**
Walnuts · Chia seeds · Flaxseed · Brussels sprouts

06 · Mineral · TIER B

# Magnesium



Involved in 300+ body processes; lost through sweat.

- Muscle function and cramps
- Better sleep
- Energy production

**Dose**
200–400 mg per day (glycinate or citrate)

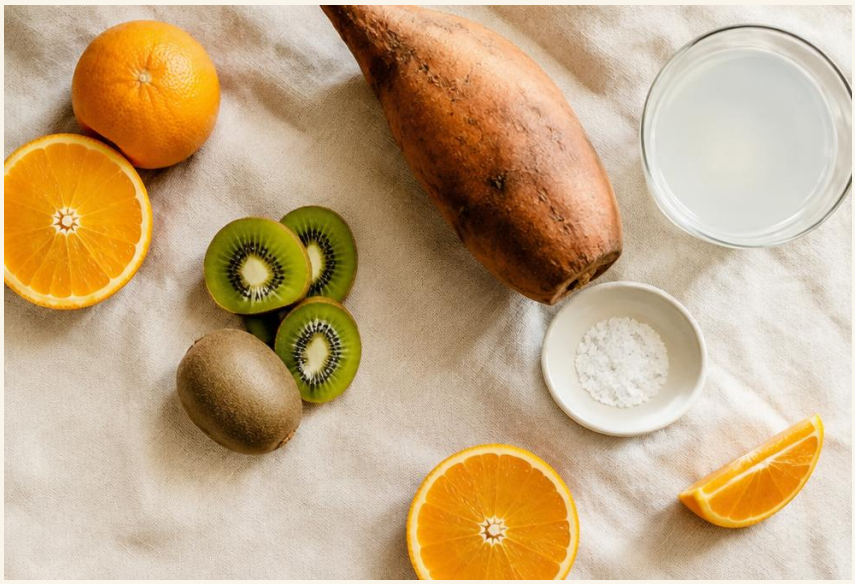
**When**
Evening.

**Watch out**
Oxide form can upset the stomach.

**Find it in food / related foods**
Spinach · Avocado · Banana · Pumpkin seeds · Dark chocolate

07 · Mineral · TIER B

# Electrolytes (Sodium, Potassium)



Salts that keep fluid balance and nerves working.

- Prevents cramps
- Better endurance in heat
- Faster rehydration

**Dose**
300–600 mg sodium per hour of heavy sweating

**When**
During long or hot sessions.

**Watch out**
Only needed for sweaty sessions over ~60 min.

**Find it in food / related foods**
Banana · Orange · Kiwi · Sweet potato · Coconut water

08 · Supplement · TIER B

# Beta-Alanine



Builds carnosine, which buffers acid in muscles.

• More reps in the 1–4 min range

• Delays the burn

**Dose**
3.2–6.4 g per day

**When**
Daily, split doses.

**Watch out**
Harmless tingling skin is common.

**Find it in food / related foods**
Beef · Salmon · Chicken · Edamame (small amounts)

09 · Mineral · TIER B

# Zinc



Supports immunity and hormones; lost through sweat.

- Immune health
- Healthy testosterone levels
- Wound healing

**Dose**
10–25 mg per day

**When**
With food.

**Watch out**
Long-term high doses can lower copper.

**Find it in food / related foods**
Pumpkin seeds · Cashews · Chickpeas · Oats · Mushrooms

10 · Mineral · TIER B

# Iron



Carries oxygen in blood. Common shortfall in women and endurance athletes.

• Endurance

• Less fatigue

**Dose**
Only as advised after a blood test

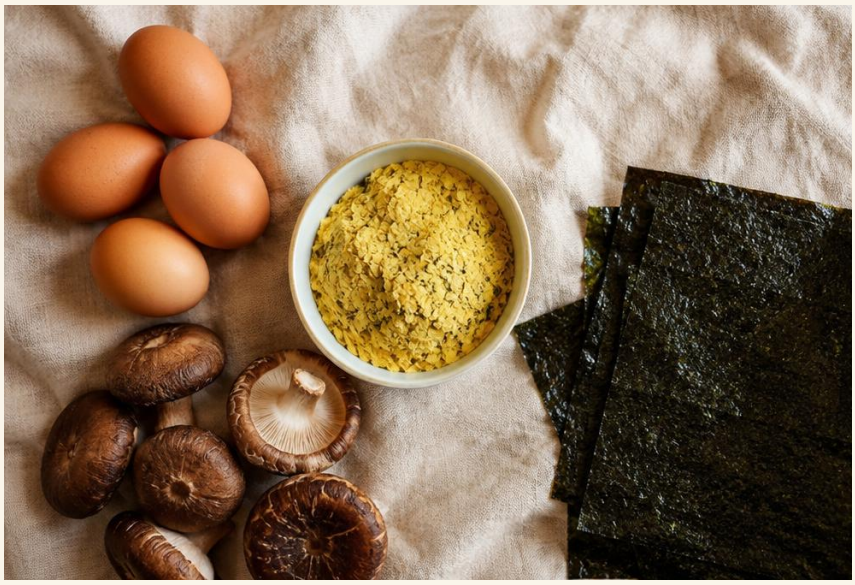
**When**
With vitamin C, away from coffee.

**Watch out**
Don't supplement without testing — too much is harmful.

**Find it in food / related foods**
Lentils · Kale · Broccoli · + Red pepper & strawberries (vitamin C helps absorption)

11 · Vitamin · TIER B

# Vitamin B12



Needed for energy and red blood cells. Key for vegans.

• Energy metabolism

• Nerve health

**Dose**
250–1,000 mcg per day if plant-based

**When**
Any time.

**Watch out**
Very safe; excess is excreted.

**Find it in food / related foods**
Nutritional yeast (fortified) · Nori seaweed · Shiitake · Eggs

12 · Mineral · TIER C

# Calcium



Bone mineral; best from food (dairy, greens).

- Bone density
- Muscle contraction

**Dose**
Only top up to reach ~1,000 mg/day total

**When**
Separate from iron.

**Watch out**
Food first; supplement only if diet is low.

**Find it in food / related foods**
Kale · Bok choy · Almonds · Dried figs · Milk

13 · Supplement · TIER C

# Citrulline Malate



Popular pre-workout ingredient for blood flow.

- Possible extra reps
- "Pump"

**Dose**
6–8 g

**When**
60 min before training.

**Watch out**
Mixed research — nice-to-have.

**Find it in food / related foods**
Watermelon · Cucumber · Pumpkin

14 · Supplement · TIER C

# BCAAs



Three amino acids also found in all protein.

• Little benefit if protein intake is adequate

**Dose**
Not needed with enough protein

**When**
—

**Watch out**
Save your money; buy protein instead.

**Find it in food / related foods**
Lentils · Chickpeas · Soybeans · Eggs

15 · Supplement · TIER B

# Ashwagandha



An adaptogen root that lowers cortisol. Mostly a stress-and-sleep aid that happens to help training.

- Calmer, easier sleep
- Small strength and recovery gains
- May blunt overreaching in hard blocks

**Dose**
300–600 mg root extract per day (KSM-66 or Sensoril)

**When**
Daily. Evening if sleep is the goal.

**Watch out**
Skip if pregnant, or with thyroid or autoimmune conditions. Stop after 8–12 weeks and check how you feel without it.

**Find it in food / related foods**
Not in food — root powder or capsules · Warm milk (traditional)

16 · Supplement · TIER B

# Collagen Peptides



Hydrolysed collagen: the amino acids your tendons, ligaments and skin are built from.

• Joint and tendon comfort

• Skin elasticity

• Not a muscle protein — it's an incomplete one

**Dose**
10–15 g per day, with vitamin C

**When**
An hour before tendon-heavy work, or any time for skin.

**Watch out**
Don't count it toward your protein target — it lacks tryptophan.

**Find it in food / related foods**
Bone broth · Chicken skin · Fish skin · Eggshell membrane

17 · Supplement · TIER B

# Beetroot Juice (Nitrates)



Dietary nitrates widen blood vessels and make oxygen use cheaper. The best-supported endurance shot.

- Longer time to exhaustion
- Cheaper oxygen use
- Small blood-pressure drop

**Dose**
400–800 mg nitrate (~500 ml juice or a concentrate shot)

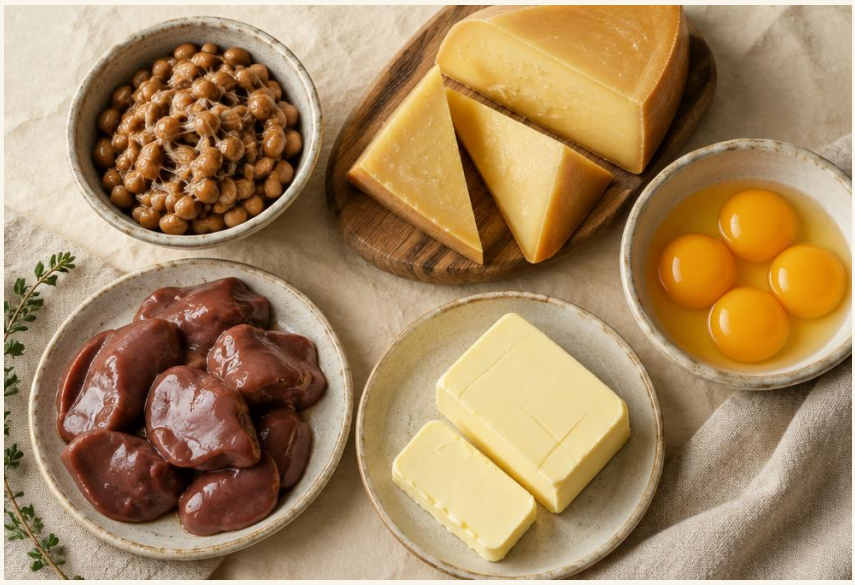
**When**
2–3 hours before the session.

**Watch out**
Harmless pink urine. Antiseptic mouthwash kills the bacteria that do the work — skip it that morning.

**Find it in food / related foods**
Beetroot · Rocket (arugula) · Spinach · Celery · Iceberg lettuce

18 · Vitamin · TIER B

# Vitamin K2



The vitamin that points calcium into bone and away from arteries. Usually low in Western diets.

- Bone density
- Calcium routed correctly
- Works alongside vitamin D3

**Dose**
100–200 mcg MK-7 per day

**When**
With a meal containing fat — same slot as your D3.

**Watch out**
Talk to your doctor first if you take warfarin or other blood thinners — K2 works against them.

**Find it in food / related foods**
Natto · Gouda and hard cheeses · Egg yolks · Goose liver · Butter

19 · Supplement · TIER C

# Tart Cherry



Sour cherry juice with natural melatonin and antioxidants. A recovery-and-sleep nicety.

- Less soreness after hard sessions
- Slightly longer sleep
- May blunt inflammation

**Dose**
30 ml concentrate (or ~500 ml juice) per day

**When**
Evening, or the two days after a hard session.

**Watch out**
Adds real sugar — count it. Effect sizes are small.

**Find it in food / related foods**
Tart cherries · Tart cherry juice · Dried sour cherries

PAIRINGS & TIMING

# Take together

**Iron + Vitamin C**
Vitamin C turns plant iron into a form your body can absorb. Have your iron with orange juice, peppers or strawberries.

**Vitamin D3 + Omega-3 (Fish Oil)**
Both need fat to absorb. Take them with the same meal that has some fat in it and remember one thing, not two.

**Vitamin D3 + Calcium**
D3 is what lets your gut actually take up the calcium you eat.

**Vitamin D3 + Vitamin K2**
K2 points the calcium that D3 helps you absorb into bone instead of soft tissue.

**Magnesium + Vitamin D3**
Your body needs magnesium to convert vitamin D into its active form.

**Collagen Peptides + Vitamin C**
Vitamin C is required to build collagen — take the powder with a source of it, an hour before tendon-heavy work.

**Creatine Monohydrate + Protein Powder (Whey / Plant)**
No special chemistry — they just fit in the same shake, and that's the habit that sticks.

PAIRINGS & TIMING

# Space them out

**Iron / Calcium**
Calcium blocks iron uptake. Dairy or a calcium pill at a different meal to your iron — two hours minimum.

**Iron / Coffee**
Coffee and tea cut iron absorption sharply. Have the coffee an hour or two after your iron, not with it.

**Zinc / Calcium**
High-dose calcium competes with zinc for absorption. Put them at opposite ends of the day.

**Iron / Zinc**
At supplemental doses they compete for the same uptake route. Space them a couple of hours.

**Magnesium / Antibiotics**
Magnesium, calcium and iron all bind certain antibiotics and switch them off. Ask your pharmacist about the gap.

**Calcium / Thyroid medication**
Calcium and magnesium can stop levothyroxine working. Take the pill on an empty stomach and the minerals four hours later.

On any prescription? Space iron, calcium and magnesium from antibiotics and thyroid medication, and ask your pharmacist about the gap.

YOUR WALLET

# Don’t waste money on these

**BCAAs**
If you hit your protein target, they add nothing. Every protein source already contains them.

**Fat burners**
Mostly caffeine plus a garnish. Buy the caffeine separately for a fraction of the price.

**Testosterone boosters**
None raise testosterone in healthy men enough to change muscle. Tribulus and D-aspartate have failed in trials.

**Proprietary blends**
One total gram weight with no per-ingredient numbers — you can't tell whether you got a working dose of anything.

**Mass gainers**
Powdered oats and sugar at four times the price of oats and milk.

**Detox teas and cleanses**
Your liver and kidneys already do this. The only reliable outcome is looser stools.

## How to read a label

**1. Look for a test mark**
Informed Sport, Informed Choice or NSF on the tub is the cheapest insurance against banned or missing ingredients.

**2. The form must be named**
"Creatine monohydrate", "magnesium glycinate". A vague name usually means the cheap form.

**3. Dose per serving, not per tub**
The panel should show how much is in one serving, and it should match the studied dose in the entry above.

**4. Ignore the front of the tub**
Words like "anabolic", "advanced" or "pro" mean nothing. Read the supplement facts panel on the back.

**Worth paying for**
creatine monohydrate, a protein powder you'll actually use, vitamin D3 in the darker months, a third-party tested omega-3.