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# Supplements: Fact vs Fiction

WHAT THE RESEARCH ACTUALLY SAYS ABOUT THE 20 MOST  
POPULAR SUPPLEMENTS

An evidence-based breakdown. No affiliate links. No sponsorships.  
Just the published data on what works, what does not, and what might harm you.

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# The Supplement Problem

The supplement industry is worth over 150 billion USD globally. Most of it is marketing dressed up as science. Some supplements genuinely help. Others are expensive urine. A few can actually cause harm. This guide separates fact from fiction using published clinical evidence, not influencer testimonials.

## Tier 1: Strong Evidence of Benefit

### Vitamin D3

The evidence is overwhelming. Vitamin D deficiency is linked to immune dysfunction, bone loss, depression, fatigue, and increased cancer risk. Over 90% of people in the UK are below optimal levels during winter months. Supplementation with 1000-4000 IU daily (depending on your blood levels) is supported by extensive research.

*Get your levels tested first. Aim for 75-125 nmol/L. Take with a fat-containing meal for absorption. Pair with K2 if supplementing above 2000 IU.*

### Omega-3 (EPA/DHA)

The most researched supplement in history. Omega-3 fatty acids reduce inflammation, support brain function, and lower cardiovascular risk. The evidence is strongest for EPA-dominant formulations at doses of 2-4g daily. Most people are severely deficient.

*Quality matters enormously. Look for third-party tested products (IFOS certification). Triglyceride form absorbs better than ethyl ester. Test your Omega-3 Index.*

### Magnesium

Involved in over 300 enzymatic reactions. Deficiency contributes to muscle cramps, poor sleep, anxiety, migraines, and insulin resistance. Soil depletion means food sources are less reliable than they were decades ago. Glycinate form is best for sleep and anxiety. Citrate for constipation. Threonate for cognitive function.

*The standard blood test (serum magnesium) only reflects 1% of your body stores. You can be deficient with "normal" serum levels. Red blood cell magnesium is more accurate.*

### Creatine

Not just for bodybuilders. Creatine monohydrate has robust evidence for muscle strength, cognitive function under stress, and neuroprotection. Safe in long-term studies. 3-5g daily. No loading phase needed.

*Ignore "advanced" forms like creatine HCL or buffered creatine. Monohydrate is the most studied and most effective. It is also the cheapest.*

## Tier 2: Good Evidence for Specific Conditions

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## Probiotics

The evidence is condition-specific, not universal. Strong evidence for antibiotic-associated diarrhoea (*Saccharomyces boulardii*), IBS (*Bifidobacterium infantis* 35624), and vaginal health (specific *Lactobacillus* strains). Weak evidence for general "gut health" claims.

*Strain matters more than brand. Generic "10 billion CFU" products are not the same as clinically studied strains. Match the strain to your condition.*

## Iron

Essential if you are genuinely deficient (ferritin below 30). Do not supplement without testing. Excess iron is inflammatory and potentially toxic. Take with vitamin C to enhance absorption. Avoid taking with tea, coffee, or calcium.

*Bisglycinate form causes less gastrointestinal upset than ferrous sulphate. Take every other day for better absorption (counterintuitive but supported by research).*

## B12

Critical for vegetarians, vegans, older adults, and anyone on metformin or proton pump inhibitors. Methylcobalamin is the active form. Sublingual absorption bypasses potential gut issues.

*B12 deficiency can mimic dementia, depression, and neuropathy. If you are over 60, on acid-suppressing medication, or plant-based, test regularly.*

## Zinc

Important for immune function, wound healing, testosterone production, and thyroid health. Deficiency is common in vegetarians and those with gut issues. 15-30mg daily with food.

*Long-term zinc supplementation (above 40mg) can deplete copper. If supplementing zinc regularly, add 1-2mg copper or take a zinc-copper combo.*

## Curcumin (Turmeric Extract)

Anti-inflammatory properties are well-documented in studies using bioavailable formulations (with piperine or as a phytosome complex). Standard turmeric powder has near-zero absorption. Useful for joint pain, metabolic inflammation, and recovery.

*Plain turmeric from the spice rack does almost nothing medicinally. You need a standardised, bioavailability-enhanced extract. Look for Meriva or Longvida formulations.*

## Ashwagandha

Adaptogen with genuine evidence for reducing cortisol, improving stress resilience, and supporting thyroid function. KSM-66 is the most studied extract. 300-600mg daily.

*Avoid if you have an autoimmune thyroid condition (Hashimoto or Graves) without professional guidance. It stimulates thyroid hormone production.*

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## Tier 3: Overhyped or Insufficient Evidence

### Collagen Peptides

The marketing is aggressive but the evidence is modest. Some studies show mild improvements in skin hydration and joint comfort, but the effect sizes are small. Your body breaks collagen into amino acids during digestion and does not reassemble it as collagen.

*If you want to support collagen production, vitamin C, zinc, and glycine (from bone broth) are cheaper and better supported.*

### Apple Cider Vinegar

Small studies suggest modest blood sugar benefits when taken before meals. But the effect is tiny compared to exercise or dietary changes. No evidence for weight loss, detoxification, or cancer prevention.

*If you enjoy it, fine. But it is not a health intervention. Protect your tooth enamel by diluting it and using a straw.*

### Greens Powders

Expensive way to get a fraction of what whole vegetables provide. Most formulations use proprietary blends that hide actual doses. No clinical evidence that they replace real food.

*If your diet is poor, a greens powder is not the solution. If your diet is good, you do not need one. Eat actual vegetables.*

### Biotin for Hair

Unless you have a genuine biotin deficiency (rare), supplementation does not improve hair growth. The evidence is weak and mostly funded by supplement companies. Hair loss is almost always hormonal, inflammatory, or nutritional in origin.

*Instead of biotin, investigate ferritin, zinc, vitamin D, thyroid function, and hormones. These are the real drivers of hair health.*

### Multivitamins

The largest and most rigorous studies consistently show no benefit for all-cause mortality, cardiovascular disease, or cancer prevention in well-nourished adults. They provide subtherapeutic doses of nutrients and create a false sense of security.

*Targeted supplementation based on blood testing is vastly superior to a generic multivitamin. Test, do not guess.*

## Tier 4: Potentially Harmful

### High-Dose Vitamin E

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Meta-analyses suggest that supplemental vitamin E above 400 IU daily may increase all-cause mortality. It can also increase bleeding risk, especially alongside blood thinners.

### **High-Dose Vitamin A (Retinol)**

Toxic in excess. Can cause liver damage, bone loss, and birth defects. Beta-carotene from food is safe, but preformed vitamin A supplements should be used cautiously.

### **Kava**

Effective for anxiety but associated with severe liver toxicity in multiple case reports. Banned in several countries. The risk-benefit ratio does not justify casual use.

### **Unregulated Herbal Blends**

Many herbal supplements contain undisclosed ingredients, heavy metals, or prescription drug analogues. "Natural" does not mean safe. Buy from reputable, third-party tested brands only.

## **The Bottom Line**

Test before you supplement. Match the supplement to a documented deficiency or specific clinical need. Choose quality over quantity. And remember: supplements are meant to supplement a good diet, not replace one.

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Need personalised guidance? Book a confidential consultation.

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