

Nutrition for Healing

A Patient Guide to Supporting Recovery After Injury or Procedures

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Your body's ability to repair tissue, fight infection, and rebuild strength after an injury, surgery, or procedure depends heavily on the fuel and building blocks you give it. The suggestions below are drawn from clinical and nutrition research on wound and tissue healing. They are general guidance — talk with your physician or a registered dietitian before starting any new supplement, especially if you have kidney disease, liver disease, are on blood thinners, or are pregnant.

1. Protein — The Foundation of Repair

Protein supplies the amino acids your body uses to rebuild tissue, synthesize collagen, and support immune function. Needs rise substantially above baseline after injury or surgery.

- Healthy adults at baseline typically need about 0.8 g of protein per kg of body weight per day — this is not enough during active healing.
- During recovery from surgery or significant injury, most nutrition guidelines (including ESPEN and ERAS protocols) recommend roughly 1.2–2.0 g/kg/day, and wound-care guidelines commonly target 1.25–1.5 g/kg/day for patients with open wounds or pressure injuries.
- Example: a 70 kg (154 lb) person recovering from surgery might aim for roughly 85–140 g of protein per day, spread across meals rather than eaten all at once.
- Good sources: eggs, poultry, fish, lean meat, dairy or Greek yogurt, legumes, and, when intake is difficult, a whey or plant-based protein supplement.

2. Branched-Chain Amino Acids (BCAAs)

BCAAs — leucine, isoleucine, and valine — are essential amino acids that appear to help limit the loss of muscle mass that commonly occurs during immobilization or the metabolic stress of surgery, and leucine in particular helps stimulate muscle protein synthesis.

- A randomized study in older adults recovering from hip fracture surgery found that BCAA supplementation was associated with better postoperative recovery of serum albumin, a marker of nutritional status.
- In patients recovering from tonsillectomy, BCAA supplementation helped preserve muscle mass and body composition during the recovery period, when eating is often reduced.
- Typical over-the-counter BCAA products are dosed in the range of 5–10 g per serving; there is no single agreed post-surgical dose, so this is a reasonable discussion point with your care team rather than a fixed prescription.

3. Vitamin C

Vitamin C is a required cofactor for the enzymes that build and cross-link collagen, the structural protein that gives healing tissue its strength. It is also an antioxidant that supports immune cell function during the inflammatory phase of healing.

- A systematic review of controlled trials found that patients receiving vitamin C supplementation were substantially more likely to have a faster recovery process than those on placebo.
- Randomized trials in patients with pressure ulcers and surgical wounds have shown improved healing with supplemental vitamin C, particularly when baseline vitamin C status is marginal — which is common after major surgery or trauma due to increased metabolic demand.
- Documented case reports show that even mild, subclinical vitamin C deficiency — more common in surgical patients than generally recognized — can measurably slow wound healing, and correcting it improves outcomes.
- Studies of therapeutic supplementation for wound healing have used doses in the range of roughly 500–1,000 mg per day (some trials used higher, medically supervised doses), well above the standard RDA of about 65–90 mg/day for healthy adults — discuss an appropriate dose with your physician.

4. A Daily Multivitamin/Mineral — and Key Micronutrients

Injury and surgery increase the body's turnover of several vitamins and minerals at exactly the time appetite and food intake often drop. A basic daily multivitamin/mineral supplement is a reasonable, low-risk way to cover gaps, and a few nutrients have specific evidence behind them:

- Zinc — a cofactor for enzymes involved in cell proliferation and collagen synthesis; deficiency is well documented to impair wound healing, and supplementation has been shown to speed re-epithelialization in zinc-depleted patients. Typical supplemental doses used in studies range from about 15–40 mg/day for a limited period; very high doses or prolonged use can impair copper absorption, so this is best time-limited and physician-guided.
- Vitamin D — supports immune regulation and bone/muscle health during recovery; low vitamin D status is common and is associated with poorer musculoskeletal recovery, particularly after fracture or orthopedic surgery.
- Vitamin A — supports epithelial cell turnover and the early inflammatory phase of healing; needed in modest amounts, and important to avoid excessive doses since vitamin A is fat-soluble and can accumulate.
- A daily multivitamin/mineral supplement is a practical way to help ensure adequate micronutrient intake when appetite is reduced, though a whole-food, protein-adequate diet remains the foundation — supplements are meant to fill gaps, not replace meals.

5. Other Evidence-Based Nutrition Supports

Omega-3 Fatty Acids

Omega-3s (EPA/DHA, found in fish oil) help modulate the inflammatory response. Meta-analyses in surgical populations have found that omega-3 supplementation can reduce postoperative inflammation, support immune function, and shorten hospital stay in some surgical settings.

Arginine and Glutamine

These conditionally essential amino acids are frequently studied together with vitamin C and zinc in "immunonutrition" formulas used before and after major surgery. Arginine has been shown to increase collagen deposition and protein accumulation at the wound site, while glutamine supports immune cell proliferation during periods of physiologic stress. Combination formulas (arginine + glutamine + vitamin C + zinc) have shown benefit in some surgical and pressure-ulcer populations.

Collagen Peptides

Hydrolyzed collagen supplements provide amino acids (glycine, proline, hydroxyproline) that are direct building blocks of new collagen. A randomized trial in burn patients found that hydrolyzed collagen supplementation improved wound healing and nutritional status markers.

Calories and Hydration

Healing is metabolically expensive. Under-eating — even with adequate protein — slows repair because the body will burn protein for energy instead of using it for tissue building. A commonly used estimate is roughly 30–35 kcal/kg/day during active healing, adjusted for individual needs. Adequate fluid intake supports circulation and nutrient delivery to healing tissue and helps prevent constipation from reduced activity and pain medications.

6. Creatine Monohydrate

Creatine is one of the best-studied and safest sports-nutrition supplements available, and it has direct relevance during recovery, not just for athletes.

- Muscle preservation: creatine helps limit the loss of muscle mass and strength that occurs during immobilization, casting, or reduced activity after injury or surgery — a period when disuse atrophy can happen quickly.
- Cognition: a growing body of clinical trials shows creatine supplementation modestly improves memory, attention, and processing speed, particularly under conditions of metabolic stress (sleep deprivation, aging, illness) — relevant given that recovery itself is often accompanied by poor sleep and reduced activity.
- Typical studied dose: 3–5 g/day of creatine monohydrate; well-tolerated with a long safety record. Discuss with your physician if you have kidney disease.

7. Lion's Mane Mushroom (*Hericium erinaceus*)

Lion's Mane is popular as a cognitive-support supplement. The evidence here is genuinely preliminary — several small randomized trials, mixed results — and considerably weaker than the evidence for creatine or vitamin C above. That said, its safety profile is favorable, which is why it's included as a lower-confidence, low-risk option rather than a core recommendation.

- Some small randomized trials in older adults with mild cognitive complaints have shown improvement in standardized cognitive test scores (e.g., MMSE) over 8–12 weeks of daily use.
- Bottom line: reasonable for a patient to try given the low risk, but this should be framed as an optional, low-confidence option — not an evidence-backed recovery essential in the way protein, vitamin C, or creatine are.

8. General Diet Pattern for Cognitive Health

Beyond specific supplements, the overall dietary pattern with the best-supported (though still moderate-quality) evidence for cognitive health is a Mediterranean- or MIND-style diet — emphasizing vegetables, fruit, fish, olive oil, nuts, and legumes, with limited red meat and processed food. Most supporting studies are in older adults or those with mild cognitive concerns rather than the general population, but the pattern is low-risk and overlaps substantially with the healing-focused nutrition above, so it's a reasonable general recommendation for anyone asking.

- Omega-3s (already discussed above for post-surgical inflammation) also have the most consistent supplement-level evidence for cognitive support, particularly attention and processing speed.
- B vitamins (B12, folate, B6) show benefit in some reviews, primarily in populations with mild cognitive impairment or measured deficiency — worth checking levels rather than supplementing blindly.

9. If Your Treatment Involves a Blood Draw (PRP / BMAC)

Rebuilding blood cells draws on the same nutritional reserves — iron, protein, B12 — as tissue healing. A treatment that removes blood is asking your body to do two rebuilding jobs on one budget, not just one.

- Women and anyone having more than one treatment are most likely to benefit from iron support; a one-time ferritin check beforehand is the most precise way to decide.
- If supplementing empirically: a standard OTC iron supplement daily for about 2–3 weeks after treatment is a reasonable, low-risk default, in line with blood-donor recovery protocols.

Practical Tips

- Spread protein across 3–5 meals/snacks per day rather than one large serving; the body uses protein more efficiently this way.

- If appetite is poor, prioritize protein and calories first, then fill in with fruits and vegetables as tolerated.
- Avoid alcohol and minimize added sugar during active healing — both can impair immune function and tissue repair.
- If you smoke or vape, healing is one more strong reason to quit or cut back — nicotine constricts blood vessels and reduces oxygen delivery to healing tissue.
- Bring your supplement list to every appointment so your care team can check for interactions with medications (especially blood thinners) and other conditions.

This handout is for general education and does not replace individualized medical or nutritional advice. Please discuss any new supplement with your physician, especially if you have kidney or liver disease, are on anticoagulant medication, or are pregnant or breastfeeding.

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