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## HUFFPOST HEALTHY LIVING

### What Vitamins Should You Take Before Surgery?

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No matter what part of the body is undergoing surgery, the process for healing is the same. Surgically "traumatized tissue" (skin, muscle, bones, cartilage, tendons, etc.) does not just magically heal; rather, the body has to rebuild and repair tissue on the cellular level. This involves energy and nutritional building blocks to support the healing process.

The body may be asked to heal minor cuts/wounds and dental extractions to major bone and/or reconstructive procedures. Of course, the more involved the surgery then the more demands are placed on the body. Healing starts at the moment of injury and involves a series of orchestrated biomechanical reactions.

#### The Basic Science Of Healing

Basically, healing efforts surround the rebuilding of collagen, a specialized chain of amino acids, that is the main component in many tissues -- such as skin, tendon, muscle, ligaments, cartilage, blood vessels, bone, intervertebral disk, teeth and more. Collagen is "stronger than steel wire," and improperly-formed collagen is associated with healing disturbances.

Healing occurs in three distinct overlapping phases, with the bulk of healing occurring within the first few weeks following surgery.

*Inflammatory phase (up to 5 days):* The body's first response to injury involves forming a localized blood clot to stop bleeding. Infection fighting cells (neutrophils) and debris cleaning cells (macrophages) are recruited to the traumatized area.

*Proliferative phase (2 days - 3 weeks):* The body starts building tissue with specialized collagen-forming cells called fibroblasts. This new tissue is called granulation tissue and special growth factors to stimulate skin formation (epithelialization).

*Remodeling phase (3 weeks - years):* The body transforms and replaces the collagen that was placed during the proliferative phase into a stronger collagen to support structure and function over the long term.

#### What Vitamins, Minerals and Amino Acids Support Healing?\*

It is beneficial to be as healthy as possible and nutritionally maximized prior to surgery to support optimal healing. While several vitamins, minerals and amino acids are used during healing, there are specific ones that are known to specifically to support the normal response to healing, and to support the normal immune system response to infection.

**Vitamin C:** Necessary to build and rebuild collagen throughout the body. Vitamin C is also a powerful antioxidant that supports the immune response.

**Vitamin A:** Supports immune system functioning and aids collagen strength. Also required for bone development.

**Zinc:** An essential trace mineral used in enzymatic reactions involved in tissue and wound healing, regeneration and repair.

**Vitamin K:** Aids the natural blood clotting response and is important for bone health.

**B-Vitamins:** Cellular metabolism, tissue repair and immune support.

**Vitamin D & Calcium:** Important for bone health.

**Magnesium:** Mineral involved in approximately 300 biochemical reactions.

**Amino Acids (L-Arginine, L-Glutamine):** Two key amino acids for wound repair and immune function.

#### What Dietary Supplements Should You Avoid BEFORE Surgery?

Vitamin E and surgery do not mix because Vitamin E is associated with increased bleeding, and this can lead to collection of blood (called a hematoma) that could result in serious complications. Most surgeons will instruct you to avoid preparations with Vitamin E before surgery, however, so it is important to check your dietary supplements/multivitamin carefully. However, after the surgery, your health care professional may indicate that Vitamin E may be appropriate.

Most people are confused when they are instructed to avoid Vitamin E prior to surgery because Vitamin E is often associated with of healing scars. Topical Vitamin E preparations, however, are used for scars postoperatively.

Herbal supplements, in general, are to be avoided prior to surgery because they can cause bleeding or other operative complications. A few commonly taken herbal supplements to avoid are: Ginko Biloba, Garlic, Ginseng, Ginger, Dong Quai, Ephedra, Feverfew, St. John's Wort and/or Omega 3 fatty acids.

A general rule is to stop taking these potentially unsafe preparations at least two weeks prior. Nonetheless, it is important to discuss all preoperative dietary supplements with a health care professional prior to any surgery or procedure.

### **What Surgeries & Procedures Benefit From Nutritional Support?**

Again, no matter what part of the body is undergoing surgery, the process for healing is the same and requires nutritional building blocks to support the healing process. The nutritional demands for small surgeries are different than major reconstructive cases. Certain surgery, such as bariatric surgery, has very specific nutritional needs and needs to be managed properly by a specialist. Simple cosmetic procedures and injections result in tissue trauma and basic nutritional building blocks are still required for healing.

Emphasis on surgical nutrition starts before surgery, and should continue until mostly healed -- a process that could take several weeks and determined by a health care professional.

In summary, healing is complex but the concept for surgical nutritional support is simple -- provide the building blocks for healing to optimize the healing efforts.

-- Dr. Blitz

*\*Commerically available [specialized supplement programs](#) exist that combine all these building block ingredients into one formulation for ease of use, provide specific amounts of each appropriate supplement to support healing and delineate which vitamins should be taken pre-op and post-op.*

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