



L-Arginine Insights

L-arginine is a chemical building block called "an amino acid." It is obtained from the diet and is necessary for the body to make proteins. L-arginine is found in red meat, poultry, fish, and dairy products. It can also be made in a laboratory and used as medicine.

L-arginine is used for heart and blood vessel conditions including congestive heart failure (CHF), chest pain, high blood pressure, and coronary artery disease. L-arginine is also used for recurrent pain in the legs due to blocked arteries (intermittent claudication), decreased mental capacity in the elderly (senile dementia), erectile dysfunction (ED), and male infertility.

Some people use L-arginine for preventing the common cold, improving kidney function after a kidney transplant, high blood pressure during pregnancy (pre-eclampsia), improving athletic performance, boosting the immune system, and preventing inflammation of the digestive tract in premature infants.

L-arginine is used in combination with a number of over-the-counter and prescription medications for various conditions. For example, L-arginine is used along with ibuprofen for migraine headaches; with conventional chemotherapy drugs for treating breast cancer; with other amino acids for treating weight loss in people with AIDS; and with fish oil and other supplements for reducing infections, improving wound healing, and shortening recovery time after surgery.

Some people apply L-arginine to the skin to speed wound healing and for increasing blood flow to cold hands and feet, especially in people with diabetes. It is also used as a cream for sexual problems in both men and women.

HOW DOES IT WORK?

L-arginine is converted in the body into a chemical called nitric oxide. Nitric oxide causes blood vessels to open wider for improved blood flow. L-arginine also stimulates the release of growth hormone, insulin, and other substances in the body.

Possibly Effective For:

- Chest pain (angina). Taking L-arginine seems to decrease symptoms and improve exercise tolerance and quality of life in people with angina. However, L-arginine does not seem to improve the disease itself.
- Erectile dysfunction (ED). Taking 5 grams of L-arginine by mouth daily seems to improve sexual function in men with ED. Taking lower doses might not be effective. However, there is some early evidence that adding 40 mg of Pycnogenol three times daily might improve the effectiveness of low-dose L-arginine for ED.
- High blood pressure. There is early evidence that taking L-arginine by mouth can reduce blood pressure in healthy people, people with high blood pressure, and people with slightly high blood pressure with or without diabetes.

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- High blood pressure. There is early evidence that taking L-arginine by mouth can reduce blood pressure in healthy people, people with high blood pressure, and people with slightly high blood pressure with or without diabetes.
- Inflammation of the digestive tract in premature infants. Adding L-arginine to formula seems to prevent inflammation of the digestive tract in premature infants.
- Nitrate tolerance. Taking 700 mg of L-arginine four times daily seems to prevent nitrate tolerance in people taking nitroglycerin for chest pain (angina pectoris).
- Leg pain associated with poor blood flow (peripheral arterial disease). Research suggests that taking L-arginine by mouth or intravenously (by IV) for up to 8 weeks increases blood flow in people with peripheral arterial disease. However, long-term use (up to 6 months) does not improve walking speed or distance in people with peripheral arterial disease.
- Improving recovery after surgery. Taking L-arginine with ribonucleic acid (RNA) and eicosapentaenoic acid (EPA) before surgery or afterwards seems to help reduce the recovery time, reduce the number of infections, and improve wound healing after surgery.
- High blood pressure during pregnancy (pre-eclampsia). Although there are inconsistent results about the effects of L-arginine on pre-eclampsia, most research suggests that it can reduce blood pressure in women with this condition.

Possibly Ineffective For:

- Kidney disease. Most early research suggests that taking L-arginine, either by mouth for up to 6 months or intravenously (by IV) for a short time, does not improve kidney function in people with kidney failure or kidney disease. However, taking 1.3 grams of L-arginine by mouth daily seems to improve kidney function and reverse anemia in elderly people with kidney disease-associated anemia.
- Heart attack. Taking L-arginine does not seem to help prevent a heart attack. It also does not seem to be beneficial for treating a heart attack after it has occurred. In fact, there is concern that L-arginine might be harmful for people after a recent heart attack. Do not take L-arginine if you have had a recent heart attack.
- Wound healing. Taking L-arginine does not seem to improve wound healing.

Insufficient Evidence For:

- **AIDS-related wasting.** Taking L-arginine by mouth, along with hydroxymethylbutyrate (HMB) and glutamine, for 8 weeks seems to increase body weight and improve immune function in people with HIV/AIDS. However, taking L-arginine by mouth, along with omega-3 fatty acids and a balanced nutritional supplement, for 6 months does not improve body weight or fat mass, energy intake, or immune function in people who are HIV-positive.
- **Altitude sickness.** Early research suggests that L-arginine does not reduce altitude sickness.
- **Anal fissures.** There is inconsistent evidence about that effects of L-arginine for treating anal fissures. Applying a topical gel containing L-arginine for at least 12 weeks might heal anal fissures in people who do not respond to traditional care. However, applying L-arginine to the skin does not seem to be better than surgery for anal fissures.
- **Breast cancer.** Early research shows that taking L-arginine before chemotherapy does not improve the response rate in people with breast cancer.
- **Heart failure.** Taking L-arginine by mouth, together with conventional treatment, seems to improve kidney function in people with heart failure. However, it might not improve the ability to exercise, quality of life, or blood circulation. L-arginine should not be used in place of conventional treatment.
- **Coronary artery bypass graft (CABG) surgery.** There is mixed evidence about the effects of L-arginine in protecting the heart during CABG. Some research suggests that giving L-arginine intravenously (by IV) may be helpful in people undergoing CABG. Other research shows that it does not help.
- **Clogged blood vessels (coronary artery disease).** Early research suggests that taking L-arginine intravenously (by IV) before exercising can improve blood vessel function in people with coronary artery disease. However, it does not improve blood flow to the heart.
- **Critical illness (trauma).** Research shows that taking L-arginine by mouth with glutamine, nucleotides, and omega-3 fatty acids reduces the recovery time, the need for help with breathing, and risk of infections in people who are critically ill. However, it does not reduce the risk of death.
- **Memory loss (dementia).** Early research suggests that L-arginine might improve memory loss related to aging.
- **Cavities.** Early research suggests that using a sugarless mint containing an arginine complex (CaviStat) for one year reduces the number of cavities in molars of children compared with sugarless mints that do not contain arginine.
- **Sensitive teeth.** Early research suggests that using a toothpaste containing arginine, calcium, and fluoride reduces tooth sensitivity when used twice daily.

- Diabetes. Taking L-arginine by mouth seems to improve blood sugar control in people with existing diabetes. However, it is unclear if arginine helps prevent people with pre-diabetes from developing diabetes.
- Diabetic foot ulcers. Early research shows that applying L-arginine to the feet daily can improve circulation in people with diabetes, which might be helpful in preventing diabetic foot ulcers. However, if there is already an ulcer on the foot, injecting L-arginine under the skin near the ulcer does not seem to shorten healing time or lower the chance of needing an amputation in the future.
- Nerve damage due to diabetes. Early research suggests that taking L-arginine daily for 3 months does not improve nerve damage related to diabetes.
- Muscle problems in the esophagus. Early research suggests that taking L-arginine by mouth or as an infusion can reduce the number and intensity of chest pain attacks in people with chest pain that is not related to the heart.
- Exercise performance. There is inconsistent evidence about the effects of L-arginine on exercise performance. Some evidence shows that taking 6 grams of L-arginine in a drink increases exercise time until becoming tired. Also taking arginine with grape seed extract appears to improve working ability in men and decreases their tiredness. However, taking arginine 6 grams once does not affect strength during exercise.
- Head and neck cancer. Supplementing a feeding tube with L-arginine does not seem to improve immune function, reduce tumor size, or improve healing with head and neck cancer.
- Heart transplant. Early research suggests that taking L-arginine by mouth for 6 weeks increases walking distance and improves breathing in people with a heart transplant.
- Infertility. There is inconsistent evidence about the effectiveness of L-arginine for infertility. Some early research suggests that taking 16 grams of L-arginine daily increases egg counts collected in women undergoing IVF. However, it does not seem to improve pregnancy rates. Other research suggests that taking L-arginine does not improve semen quality in men with unexplained infertility.
- Bladder inflammation. Taking L-arginine by mouth seems to reduce pain and some symptoms of bladder inflammation, although improvements may take 3 months to occur. However, L-arginine does not seem to reduce the need to urinate at night or improve the frequency of urination.
- Poor growth of fetus during pregnancy. Early research suggests that taking L-arginine during pregnancy can increase the birth weight of babies who show poor growth while still in their mother's womb. However, L-arginine does not seem to increase birth weight or reduce the risk of the baby dying if the baby has extremely poor growth while in the womb.
- Mitochondrial encephalomyopathies (a group of disorders that lead to muscle and nervous system problems). There is some interest in using L-arginine to improve

symptoms associated with MELAS (myoclonic epilepsy with lactic acidosis and stroke-like episodes) syndrome. Early research suggests that administering L-arginine intravenously (by IV) within one hour of stroke-like symptoms improves headaches, nausea, vomiting, blindness, and the appearance of bright spots in people with this condition.

- Migraine headache. Taking L-arginine by mouth along with the painkiller ibuprofen seems to be effective for treating migraine headache. This combination sometimes starts to work within 30 minutes. However, it is hard to know how much of the pain relief is due to L-arginine, since ibuprofen can relieve migraine pain on its own.
- Obesity. Early research suggests that taking a specific arginine 3 grams three times daily may decrease waist size and weight in women.
- Ovarian disease (polycystic ovarian syndrome). Early research suggests that taking N-acetyl-cysteine and L-arginine daily for 6 months can improve menstrual function and reduces insulin resistance in people with polycystic ovarian syndrome.
- Pressure ulcers. Taking L-arginine by mouth along with the painkiller ibuprofen seems to be effective for treating migraine headache. This combination sometimes starts to work within 30 minutes. However, it is hard to know how much of the pain relief is due to L-arginine, since ibuprofen can relieve migraine pain on its own.
- Restricted blood flow (restenosis). Some research suggests that giving L-arginine during stent implantation followed by L-arginine supplementation by mouth for 2 weeks after stent implantation does not reduce the risk of restricted blood flow. However, other evidence suggests that administering L-arginine at the site of stent implantation may reduce artery wall thickening.
- Kidney transplant. There is conflicting evidence about the effects of L-arginine for people with kidney transplants. It is unclear if it helps.
- Respiratory infections. Early research suggests that taking L-arginine by mouth for 60 days prevents the recurrence of respiratory infections in children.
- Sickle-cell disease. Early research suggests that taking L-arginine for 5 days might be useful for people with sickle cell disease who have high blood pressure in the lungs.
- Stress. Some early research suggests that taking a combination of L-lysine and L-arginine for up to 10 days reduces stress and anxiety in healthy people and those prone to stress.
- Prevention of the common cold.
- Female sexual problems.

SIDE EFFECTS & SAFETY

L-arginine is POSSIBLY SAFE for most people when taken appropriately by mouth, administered as a shot, or applied to the skin, short-term. It can cause some side effects such as abdominal pain, bloating, diarrhea, gout, blood abnormalities, allergies, airway inflammation, worsening of asthma, and low blood pressure.

Special Precautions & Warnings:

Pregnancy and breast-feeding: L-arginine is POSSIBLY SAFE when taken by mouth appropriately for a short-term during pregnancy. Not enough is known about using L-arginine long-term in pregnancy or during breast-feeding. Stay on the safe side and avoid use.

Children: L-arginine is POSSIBLY SAFE when used by mouth in premature infants in appropriate doses. However, L-arginine is POSSIBLY UNSAFE when used in high doses. Doses that are too high can cause serious side effects including death in children.

Allergies or asthma: L-arginine can cause an allergic response or make swelling in the airways worse. If you are prone to allergies or asthma and decide to take L-arginine, use it with caution.

Cirrhosis: L-arginine should be used with caution in people with cirrhosis.

Guanidinoacetate methyltransferase deficiency: People with this inherited condition are unable to convert arginine and other similar chemicals into creatine. To prevent complications associated with this condition, these people should not take arginine.

Herpes: There is a concern that L-arginine might make herpes worse. There is some evidence that L-arginine is needed for the herpes virus to multiply.

Low blood pressure: L-arginine might lower blood pressure. This could be a problem if you already have low blood pressure.

Recent heart attack: There is a concern that L-arginine might increase the risk of death after a heart attack, especially in older people. If you have had a heart attack recently, don't take L-arginine.

Kidney disease: L-arginine has caused high potassium levels when used by people with kidney disease. In some cases, this has resulted in a potentially life-threatening irregular heartbeat.

Surgery: L-arginine might affect blood pressure. There is a concern that it might interfere with blood pressure control during and after surgery. Stop taking L-arginine at least 2 weeks before a scheduled surgery.

Moderate Interaction

BE CAUTIOUS WITH THIS COMBINATION!

- Medications for high blood pressure (Antihypertensive drugs) interacts with L-ARGININE. L-arginine seems to decrease blood pressure. Taking L-arginine along with medications for high blood pressure might cause your blood pressure to go too low. Some medications for high blood pressure include captopril (Capoten), enalapril (Vasotec), losartan (Cozaar), valsartan (Diovan), diltiazem (Cardizem), Amlodipine (Norvasc), hydrochlorothiazide (HydroDiuril), furosemide (Lasix), and many others.
- Medications that increase blood flow to the heart (Nitrates) interacts with L-ARGININE
L-Arginine increases blood flow. Taking L-arginine with medications that increase blood flow to the heart might increase the chance of dizziness and lightheadedness.
Some of these medications that increase blood flow to the heart include nitroglycerin (Nitro-Bid, Nitro-Dur, Nitrostat), and isosorbide (Imdur, Isordil, Sorbitrate).
- Sildenafil (Viagra) interacts with L-ARGININE
Sildenafil (Viagra) can lower blood pressure. L-arginine can also lower blood pressure. Taking sildenafil and L-arginine together might cause the blood pressure to go too low. Blood pressure that is too low can cause dizziness and other side effects.

BY MOUTH

- For congestive heart failure: doses range from 6-20 grams per day, as three divided doses.
- For chest pain associated with coronary artery disease (angina pectoris): 3-6 grams three times per day for up to one month.
- For preventing the loss of the effectiveness of nitroglycerin in relieving pain in people with chest pain due to coronary artery disease (angina pectoris): 700 mg four times daily.
- For organic erectile dysfunction (ED): 5 grams per day. Taking lower doses might not be effective.
- For preventing inflammation of the digestive tract in premature infants: 261 mg/kg added to oral feedings daily for the first 28 days of life.