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### Nutrition

## Serrapeptase: Benefits, Dosage, Dangers, and Side Effects



By [Gavin Van De Walle, MS, RD](#) on May 19, 2023

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Serrapeptase is a proteolytic enzyme, meaning it breaks down proteins into smaller components called amino acids. Along with its anti-inflammatory properties, it may offer a host of other health benefits. However, it's not recommended for people who already take blood-thinning medications.

Serrapeptase is an enzyme isolated from bacteria found in silkworms.

It has been used for years in Japan and Europe for reducing inflammation and pain due to surgery, trauma, and other inflammatory conditions.

Today, serrapeptase is widely available as a dietary supplement and has many purported health benefits.

This article reviews the benefits, dosage, and potential dangers and side effects of serrapeptase.

## What Is Serrapeptase?

Serrapeptase — also known as serratiopeptidase — is a proteolytic enzyme, meaning it breaks down proteins into smaller components called [amino acids](#).

It's produced by bacteria in the digestive tract of silkworms and allows the emerging moth to digest and dissolve its cocoon.

The use of proteolytic enzymes like trypsin, chymotrypsin, and bromelain came into practice in the United States during the 1950s after it was observed that they had anti-inflammatory effects.

The [same observation](#)[Trusted Source](#) was made with serrapeptase in Japan during the late 1960s when researchers initially isolated the enzyme from the silkworm.

In fact, researchers in Europe and Japan proposed that serrapeptase was the most effective proteolytic enzyme for [reducing inflammation](#).

Since then, it has been found to have several possible uses and promising health benefits.

### Summary

Serrapeptase is an enzyme that comes from silkworms. Along with its anti-inflammatory properties, it may offer a host of other health benefits.

## May Reduce Inflammation

Serrapeptase is most commonly used for [reducing inflammation](#) — your body's response to injury.

In dentistry, the enzyme has been used following minor surgical procedures — such as tooth removal — to reduce pain, lockjaw

(spasming of the jaw muscles), and facial swelling.

Serrapeptase is thought to decrease inflammatory cells at the affected site.

One [review of five studies](#)[Trusted Source](#) aimed to identify and confirm the [anti-inflammatory](#) effects of serrapeptase compared to other drugs after the surgical removal of wisdom teeth.

Researchers concluded that serrapeptase was more effective at improving lockjaw than ibuprofen and corticosteroids, powerful drugs that tame inflammation.

What's more, though corticosteroids were found to outperform serrapeptase in reducing facial swelling the day after surgery, differences between the two later on were insignificant.

Still, due to a lack of eligible studies, no analysis could be performed for pain.

In the same study, researchers also concluded that serrapeptase has a better safety profile than the other drugs used in the analysis — suggesting that it could serve as an alternative in cases of intolerance or adverse side effects to other medications.

### Summary

Serrapeptase has been shown to reduce some of the symptoms associated with inflammation following the surgical removal of wisdom teeth.

## May Curb Pain

Serrapeptase has been shown to reduce pain — a common symptom of inflammation — by inhibiting pain-inducing compounds.

One [study](#)[Trusted Source](#) looked at the effects of serrapeptase in nearly 200 people with inflammatory ear, nose, and throat conditions.

Researchers found that the participants who supplemented with serrapeptase had significant reductions in pain severity and mucus production compared to those who took a placebo.

Similarly, [another study](#)[Trusted Source](#) observed that serrapeptase significantly reduced pain intensity compared to a placebo in 24 people following the [removal of wisdom teeth](#).

In [another study](#)[Trusted Source](#), it was also found to reduce swelling and pain in people following dental surgery — but was less effective than a corticosteroid.

Ultimately, more research is needed to confirm the potential pain-reducing effects of serrapeptase and to determine what other conditions it may be useful in treating before it can be recommended.

### Summary

Serrapeptase may offer pain relief for people with certain inflammatory ear, nose, and throat conditions. It may also be beneficial for minor postoperative dental surgeries.

## May Prevent Infections

Serrapeptase may decrease your risk of bacterial infections.

In a so-called biofilm, bacteria can join together to form a protective barrier around their group.

This biofilm acts as a shield against antibiotics, allowing bacteria to grow rapidly and cause infection.

Serrapeptase inhibits the formation of biofilms, thereby increasing the effectiveness of antibiotics.

[ResearchTrusted Source](#) has suggested that serrapeptase improves the efficacy of antibiotics in treating *Staphylococcus aureus* (*S. aureus*), a leading cause of healthcare-associated infections.

In fact, [test-tube and animal studies](#) have shown that antibiotics were more effective when combined with serrapeptase in treating *S. aureus* than antibiotic treatment alone.

What's more, the combination of serrapeptase and [antibiotics](#) was also effective in treating infections that had become resistant to the effects of antibiotics.

Several other [studiesTrusted Source](#) and reviews have suggested that serrapeptase in combination with antibiotics may be a good strategy to reduce or stop the progression of infection — especially from antibiotic-resistant bacteria.

### Summary

Serrapeptase may be effective at reducing your risk of infection by destroying or inhibiting the formation of bacterial biofilms. It's proven to improve the effectiveness of antibiotics used for treating *S. aureus* in test-tube and animal research.

## May Dissolve Blood Clots

Serrapeptase may be beneficial in treating atherosclerosis, a condition where plaque builds up [inside your arteries](#).

It's thought to act by breaking down dead or damaged tissue and fibrin — a tough protein formed in blood clots.

This could enable serrapeptase to dissolve plaque in your arteries or [dissolve blood clotsTrusted Source](#) that may lead to stroke or heart attack.

However, much of the information on its ability to dissolve blood clots is based on personal stories rather than facts.

Therefore, more research is necessary to determine what role — if any — serrapeptase plays in treating blood clots.

### Summary

Serrapeptase has been suggested to dissolve blood clots that could lead to a heart attack or stroke, but more research is needed.

## May Be Useful for Chronic Respiratory Diseases

Serrapeptase may increase the clearance of mucus and reduce inflammation in the lungs in people with chronic respiratory diseases (CRD).

CRDs are diseases of the airways and other structures of the lungs.

Common ones include chronic obstructive pulmonary disease (COPD), asthma, and pulmonary hypertension — a type of [high blood pressure](#) that affects the vessels in your lungs.

While CRDs are incurable, various treatments can help dilate the air passages or increase mucus clearance, improving quality of life.

In [one 4-week studyTrusted Source](#), 29 people with chronic bronchitis were randomly assigned to receive 30 mg of serrapeptase or a placebo daily.

Bronchitis is one type of COPD that leads to coughing and difficulty breathing due to the overproduction of mucus.

People who were given serrapeptase had less mucus production compared to the placebo group and were better able to clear the

mucus from their lungs.

However, further studies are needed to support these findings.

### Summary

Serrapeptase may be useful for people with chronic respiratory diseases by increasing mucus clearance and reducing inflammation of the airways.

## Dosing and Supplements

When taken orally, serrapeptase is easily destroyed and deactivated by your stomach acid before it has a chance to reach [your intestines](#) to be absorbed.

For this reason, dietary supplements containing serrapeptase should be enteric-coated, which prevents them from being dissolved in the stomach and allows for release in the intestine.

The doses typically used in studies range from [10 mg to 60 mg](#) per day.

The enzymatic activity of serrapeptase is measured in units, with [10 mg equalling 20,000 units](#) of enzyme activity.

You should take it on an empty stomach or at least 30 mins before eating or two hours after finishing a meal.

### Summary

Serrapeptase must be enteric-coated for it to be absorbed. Otherwise, the enzyme will become deactivated in the acidic environment of your stomach.

## Potential Dangers and Side Effects

There are few [published studies](#) specifically on the potential adverse reactions to serrapeptase.

However, studies have reported several side effects in people taking the enzyme, including:

- skin reactions
- muscle and joint pain
- poor appetite
- [nausea](#)
- stomach pain
- cough
- blood clotting disturbances

Serrapeptase [should not be taken](#) along with blood thinners — such as Warfarin and aspirin — other dietary supplements like [garlic](#), [fish oil](#), and turmeric, which may increase your risk of bleeding or bruising.

### Summary

Several side effects have been observed in people taking serrapeptase. It's not recommended to take the enzyme with medications or supplements that thin your blood.

## Should You Supplement With Serrapeptase?

The potential uses and benefits of supplementing with serrapeptase are limited, and research evaluating the efficacy of serrapeptase is currently restricted to a few small studies.

There's also a lack of data on the tolerability and long-term safety of this [proteolytic enzyme](#).

As such, further extensive clinical studies are needed to prove the value of serrapeptase as a dietary supplement.

If you do choose to experiment with serrapeptase, make sure to speak with your healthcare provider first to determine whether it's right for you.

### Summary

The current data on serrapeptase lacks in terms of efficacy, tolerability, and long-term safety.

## The Bottom Line

Serrapeptase is an enzyme that's been used in Japan and Europe for decades for pain and inflammation.

It may also decrease your risk of infections, prevent blood clots, and aid certain chronic respiratory diseases.

While promising, more research is needed to confirm the efficacy and long-term safety of serrapeptase.

### How we reviewed this article:

Healthline has strict sourcing guidelines and relies on peer-reviewed studies, academic research institutions, and medical associations. We avoid using tertiary references. You can learn more about how we ensure our content is accurate and current by reading our [editorial policy](#).

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## Was this article helpful?

[Yes](#)[No](#)

## Side Effects of Acetaminophen (Tylenol)



Medically reviewed by [Zara Risoldi Cochrane, Pharm.D., M.S., FASCP](#) — By [University of Illinois](#) — Updated on March 31, 2017

Acetaminophen can have side effects. Although they don't occur in most people, some effects can be serious. This is especially true if you take more than the recommended amount.

Have you ever taken Tylenol to treat mild pain or reduce a fever? If so, then you've taken acetaminophen. It's the generic name for the drug Tylenol. This drug is also sold under many other brand names and is an ingredient in many over-the-counter drugs. It's quite possible that you've taken it and not even known.

Read on to learn about this drug as well as its side effects, including tips on what to do if you experience side effects and how to avoid