At first glance, fresh garlic may not seem healthy. And we’re going to discover how America’s leading garlic researchers determined once and for all that fresh garlic supplements are the most effective, most beneficial, and the absolute best kind of garlic supplement you can buy.

In this Ask the Doctor we’re going to talk about fresh garlic and how it keeps us healthy. Unfortunately, garlic’s characteristic odor is also quite enduring. While 21st Century Americans may appreciate garlic’s health benefits, we aren’t as appreciative of having garlic breath everyday.

Enter the garlic supplement! Hailed as the convenient and socially acceptable way to get your garlic and keep your friends, garlic supplements have been available for more than 20 years. However, there’s more than one way to make a garlic supplement and which method is the best has been an ongoing controversy. Both the makers of fresh garlic supplements and the makers of aged garlic extracts claim their garlic supplement is the most effective.

But now, after years of use and years of claims and counter-claims, research has finally and definitively provided the answer to which garlic supplement is the best, and the answer is definitively fresh garlic.

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0. What is it about garlic that is so good for our health?

A. At first glance, fresh garlic may not seem to be much of a food. It’s eaten in very small amounts - one tiny clove is generally enough to satisfy even the most avid garlic lover. The amount of classic nutrients in one serving of fresh garlic compared to single servings of other vegetables is very low. For example, one serving of fresh garlic contains only one milligram (1 mg) of vitamin C, compared to broccoli’s 82 mg and a baked potato’s 26 mg. Even the water content of fresh garlic (60%) compared to other vegetables is very high, making it a much-loved food for the past 90 centuries.

One reason that garlic has been so enduring is its medicinal use. From ancient Egypt, to medieval Europe, to colonial America garlic has been used to treat both illness and injury. And now, modern-day research has validated that use. So far, over 2,200 credible studies have supported garlic’s ability to stand the test of time, unfortunately, garlic’s characteristic odor is also quite enduring. While 21st Century Americans may appreciate garlic’s health benefits, we aren’t as appreciative of having garlic breath everyday.

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Garlic researchers from universities in the United States, Canada, Great Britain, and several other countries have conducted studies on fresh garlic. The beneficial effects of garlic are partially because garlic helps to thin the blood, reduce heart attacks and strokes, inhibit atherosclerosis or hardening of the arteries, and reduce triglycerides levels in the blood. Fresh garlic extracts contain the “good” cholesterol, raise blood levels of HDL, lower blood pressure, prevent weight gain, improve blood flow to the lungs and open breathing passages, and reduce the liver damage caused by cirrhosis. Fresh garlic extracts contain a potent compound—allicin—also known as allyl methyl sulfide (AMS), which is the reason garlic is so good for us. Interestingly, fresh garlic does not contain any SMC. It only appears after the aging process.

Most of the research on SMC has been in cancer, heart, immune, and stress effects. Positive results from SMC in these studies are seen in very high amounts (you need to take 10 to 20 grams of AGEs a day), after five months of continuous use, or intravenously. Many AGE studies have been variable in their results. While other compounds in garlic have some positive health effects, they need to be taken in very high levels, that are nowhere near normal levels of garlic consumption.

And, the validity of AGE research has been questioned by the majority of garlic researchers due to sponsor-associated bias. There have been no independent replications of any AGE findings.

Q. How is aged garlic extract made?
A. Enteric-coated tablets are used in these trials to ensure maximum absorption. Enteric-coated tablets are used in these trials to ensure maximum absorption.

Q. What does allicin potential mean?
A. Because allicin can’t be measured in an intact clove of fresh garlic or an enteric coated fresh garlic extract supplement, makers of garlic supplements often provide the potential amount of allicin that can be obtained from their product. The best allicin potential comes from fresh garlic extract enteric-coated supplements.

Q. Is there a recommended daily dosage for allicin?
A. Experts recommend 4000 mg of fresh garlic each day. To get that dose, all you need is one enteric-coated tablet of fresh garlic extract with a guaranteed yield of a minimum of 5,000 mcg of allicin and a minimum of 11,000 mcg of alliin. This dosage equates to roughly one to four cloves of fresh garlic.

The beneficial effects of garlic are partially because garlic helps to thin the blood. Because of this, garlic should be used very carefully if you are taking medications that prevent blood clots, such as Coumadin® (warfarin).

Conclusion
No other medicinal plant sold as a dietary supplement on the American market today can come close to the superiority of garlic. That’s because no other study of medicinal plants to date, has even come close to the quality and quantity of fresh garlic research.

For thousands of years, people worldwide have benefited from fresh garlic’s ability to spice up a meal and keep illnesses at bay. And now research has finally settled the seemingly age-old controversy of fresh versus aged garlic extracts. While the aging process may be beneficial for whirky, wine, and certain cheeses, when it comes to garlic—fresh is definitely best!
A. Why would anyone discount allicin as garlic's primary beneficial compound? How can 90% of all garlic research be wrong?

Part of this “allium-bashing” might be related to its chemistry – allicin is a pretty complex compound. But once you understand how allicin operates inside fresh garlic and inside our bodies, it’s pretty easy to understand why it’s so powerful for our health. The table on the previous page can help.

Q. What garlic compounds are in aged garlic extracts (AGE)? Is there any research on AGE?

A. Aged garlic extract contains S-allyl mercaptocysteine (SAMC), a compound that AGE makers claim is the reason garlic is so good for us. Interestingly, fresh garlic does not contain any SAMC. It only appears after the aging process.

Most of the research on SAMC has been in cancer, heart, immune, and stress effects. Positive results from SAMC in these studies are seen in very high amounts (you need to take 10 to 20 grams of AGE a day), after five months of continuous use, or intravenously. Many AGE studies have been variable in their results. While other compounds in garlic have some positive health effects, they need to be taken in very high levels, that are nowhere near normal levels of garlic consumption.

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GARLIC FABLE VS. FACT

**Fresh Garlic Allicin Fable**

Allicin can’t be of much benefit – there is almost no detectable amount of garlic in one garlic clove.

Allicin can’t be detected in blood or urine with HPLC, a common lab testing method.

Allicin is a highly unstable compound and will disappear after a few hours.

Allicin in fresh garlic supplements is destroyed by stomach acid.

Aged garlic extract (AGE) supplements are safer and studies show AGE has more health benefits than compounds from fresh garlic.

**Fresh Garlic Allicin Fact**

Allicin is protected inside fresh garlic clove cells until it is needed. By cutting, crushing, or pressing a garlic clove, the cell walls are broken and allicin is released. Because it’s responsible for garlic’s odor, allicin is pretty easy to detect.

A major hindrance in garlic research has been the inability to measure allicin from fresh garlic in our blood and urine with common lab testing methods. But that does not necessarily mean that allicin is not present. Allicin can be easily detected in the body by measuring an allicin metabolite called allyl methyl sulfide (AMS) in the breath. That’s right – that enduring old garlic breath is actually proof that allicin is completely absorbed and hard at work. Study after study that used allicin found it could kill germs, stop tumor growth, improve cholesterol readings, reduce heart attacks, and prevent strokes. In short, all of the health benefits attributed to garlic are attributable to allicin from fresh garlic.

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Research has shown allicin to have a half-life (a common research measurement of time required for a loss of 50%) ranging from 4 days to almost 30 days.

That’s true. However, most fresh garlic extract supplements are enteric-coated. The tablets pass through the stomach intact without dissolving. This delivers the garlic tablet to the small intestine, where the tablet dissolves and releases its allicin. From the small intestine, allicin’s many compounds are formed and then enter the bloodstream.

At the American Herbal Products Association International Garlic Symposium held in 2000, several noted garlic researchers and experts completely disagreed with these statements. During a roundtable discussion, the consensus determined there have been no studies showing AGE supplements to be safer than supplements made from fresh garlic. Of note, there have been no successful independent replications of the AGE studies.

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For thousands of years, people worldwide have benefited from fresh garlic’s ability to spice up a meal and keep illnesses at bay. And now research has finally settled the seemingly old controversy of fresh versus aged garlic extracts. While the aging process may be beneficial for whokeries, wine, and certain cheeses, when it comes to garlic – fresh is definitely best!
But it’s a collection of chemical compounds, known as the sulfur compounds inside fresh garlic, that makes this rather funny. The sulfur-containing drugs include antibiotics, blood pressure lowering drugs, and diuretics. Even the water content of fresh garlic contains only one milligram (1 mg) of vitamin C, compared to broccoli’s 82 mg and a baked potato’s 26 mg.