



# Should You Get a Flu Shot?

And other ways to stay  
healthy this fall

# Introduction

It's that time of year...the push for the annual flu shot is on!

On TV, the radio, the internet, every street corner, every pharmacy and grocery store, there are ads for the flu shot. Flu shots given here! Get your flu shot today!



It's not our job to tell you what to do. Our stance is firmly in the "medical freedom" camp – everyone deserves the right to make their own decision, whatever that may be. Want a flu shot? Great. Don't want one? Cool.

Of course, in order to make a decision, facts matter. In our society, currently, only one side of the story is told. Flu vaccines are considered necessary and fundamental to health.

But...are they?

Our goal in this guide is to show what the science actually says. We'll link every study we share, so that you can read them for yourself. Then, you can make the best decision for your family, with all the facts in hand.

## About the Author



Kate Tietje, Lead Herbalist and CMO at Earthley, has more than 10 years of experience working with and independently researching herbs. Kate is well known in the natural living community, with more than 73,000 followers on her blog, Modern Alternative Mama, where she shares her research, advice and DIY tips for herbal remedies.

Kate's greatest passion is inspiring and empowering people to live healthy and productive lives, naturally. She is also the author of *Natural Remedies for Kids*, where she teamed up with Dr. Bob Zajac, a board-certified pediatrician to share the most effective natural, make at home remedies for the most common children's ailments (published in August 2015 by Quarto Press).

When Kate isn't busy making new herbal products at Earthley, hosting local "Make and Take" nights, blogging and researching, she is taking care of her six children on her 10 acre homestead in Ohio

# The Problem with Science

Science is great! We love science! ...when it's done properly.

When it comes to the flu shot, the proper questions to ask include:

- If I get a flu shot, is my risk of getting the flu reduced? By how much?
- If I get a flu shot, what side effects am I facing? How common and severe are they?
- If I don't get a flu shot, what are my chances of getting the flu? How severe is it likely to be?
- How commonly do complications of the flu occur, for people of my health?
- Which option is less risky for me – the flu, or the flu shot?



Unfortunately, when the studies are done, these are not the questions they are asking.

Instead, they assume that the flu shot is fundamental. That it is the best intervention they have, it will be used, and 'not getting it' is not an option – regardless of the actual risks or benefits of receiving it.

To properly study any intervention, we need to understand that there is a possibility that receiving that intervention is not in our best interests. It may be; but it also may not be.

Why aren't they asking these questions? Why aren't they willing to advise some people that flu shots may not be right for them? This is a real concern, and we have trouble trusting "official recommendations" when they aren't based on a proper-risk benefit analysis.

It is our goal here to help everyone answer these questions for themselves, based on the available science. We'll link all of the studies we read, so that everyone can read them and make their own best decision.

# Background on the Flu

## (and the Shot)

Most of us have heard the news reports about the “poor match” between the circulating strains and the shot. Some years it seems to be good, but other years it seems to be bad.

Every year, scientists have to guess which strains will circulate and how similar they will be to the previous season’s strains. But it is just a guess, and scientists can’t perfectly predict how strains will mutate.



Researchers know that, among all the different illnesses that are out there, the influenza virus is one of the most difficult to make a vaccine for. Influenza is not one virus, and people do not become naturally immune to all influenza if they have been sick with it once – so of course, it is very hard to make a vaccine that would do what natural immunity cannot.

Influenza comes in three main ‘types’ – A, B, and C. Each type has sub-types. Influenza A is the most common and the subtypes responsible for illness most often are H1N1 and H3N2. But influenza A has many other subtypes. Influenza B has subtypes that are called “lineages,” such as Victoria and Yamagata. (1)

Up until 2012, flu shots were “trivalent.” That is, they covered three strains of the flu. Usually two types of flu A, and one type of flu B. In 2012, they released a “quadrivalent” vaccine that covers two types of each. (2)

The reason they have to keep making new flu shots every year is because of a process called “antigenic drift.” That is, the flu mutates very easily, and after awhile, someone who has had a particular strain is no longer immune to that strain.

It’s very difficult to come up with a flu shot that works. So, how do they do it – and how well does it actually work?

# Does the Flu Shot Work?

This is the first, and most important question. If the flu shot works, then it is the right choice for at least some people. If it doesn't, then it's not.

Many flu vaccines are effective at a rate of 65 – 95% in lab testing. That is, a high percentage of people produce antibodies to the strains of flu found in the vaccine. (3)



But...that's in a lab. What we need to know is, how do they do out in the real world?

The CDC says that, in a year where the strains in the vaccine are well-matched to the circulating strains, the vaccine works about 40 – 60% of the time. (4)

In years where it is not well-matched, efficacy can be a lot lower. A paper from the World Health Organization (WHO) states: "...influenza VE against laboratory-confirmed influenza virus infection is rarely higher than 60% and may sometimes be 30% or less, with protection that may wane from one season to the next or within a season." (5)

Why is protection sometimes so low?

There are actually a lot reasons, beyond just "poor match." It has to do with an individual's susceptibility to the flu, general health status, exposure, age, and more. The flu is so variable, and so are people, so it is very hard to say who could benefit from a flu shot and who wouldn't.

But, there's more.

One study showed that the more often someone is vaccinated, the lower the protection that future shots offer. In some cases, the protection was actually negative – that is, the flu shot \*increased\* the risk of getting the flu! (6) Another study along concluded something similar – that people who received the flu shot were more likely to get sick. (7)

Another study found that some who were vaccinated against flu had a greater risk of non-flu respiratory infection. (8) A more recent and robust study confirmed this. (9)

The flu shot's efficacy is highly questionable. It may provide some benefits to high-risk groups in years where there is a good match. But we can't draw any firm conclusions without looking at potential risks of the flu shot.

# Does the Flu Shot Have Side Effects?

The way that many people present it, the flu shot basically doesn't have any risks. Maybe a sore arm or a mild fever. But is that really true?

For many people, the flu shot will not cause any serious side effects. The most common side effects are pain, swelling, redness, and tenderness at the injection site. Over 50% of people will experience one or more of these.



According to the package insert, the most common systemic reactions were irritability, abnormal crying, tiredness, loss of appetite, muscle pain, vomiting, and fever (14 – 54% of people experienced one or more of these). Children were more likely to experience adverse reactions than adults. (31)

While most side effects are fairly mild and limited, serious reactions \*can\* and do occur in some people. They are rare, but the risk is not zero.

What serious side effects can occur?

Guillain-Barre has been associated with flu shots, albeit rarely. (10, 11) Narcolepsy has also been linked to flu shots; about 1 in 18,000 doses. (12) Flu shots may be associated with autoimmunity in high-risk groups. (13)

In one study, about 6% of all reported reactions were deemed “serious” although most were not permanent. (14) Another study found that allergic reactions have increased recently. (15)

# Does the Flu Shot Have Side Effects?

After the vaccine was on the market, several reactions were reported. These reactions were not proven to have been caused by the flu shot. They include abscess and cellulitis at the injection site; facial paralysis; asthma; dizziness; abdominal pain; Stevens-Johnson syndrome; and more. There were no follow-up tests to determine whether or not there was a causal relationship between these (sometimes serious) reactions and the flu shot.

It should also be noted that safety in children under 4, and pregnant and nursing women has not been established through clinical trials. (31)

These serious side effects are rare, but we don't have good data on how frequently they occur or who is at greater risk.

# What are the Risks of the Flu?

The next piece of the puzzle is how much risk we actually face from the flu itself.

For many people, the flu is mild. A few days to a week of fever, aches, and respiratory symptoms. For certain high risk groups, especially infants, the elderly, and the immune compromised, flu (and other illnesses) can be much more serious. (16)



Ear infection is one of the most common complications of the flu. It is typically caused by streptococcus pneumoniae, a bacteria which is usually asymptomatic and commonly found in the respiratory tract. Flu seems to increase the likelihood that it will move to the middle ear and, coupled with general inflammation from the flu, may cause an ear infection. (19)

In a study that looked at flu burden in children, over 1000 children were followed for 2 years. Approximately 17% were diagnosed with flu each season. 40% developed ear infections; 3.5% developed sinus infections; 2.4% developed pneumonia. One child (under age 3) was hospitalized. No deaths and no lasting effects occurred. (20)

In an average year, about 0.3% of people who get the flu will have to be hospitalized with it. Most are elderly or in a high-risk group. (17) The vast majority will recover without complications.

One study says, that of those hospitalized, about 50% will develop pneumonia – most of whom have underlying health issues or are elderly. About 1% of those who have both the flu and pneumonia will die. (18)

Of those in the high-risk group who are hospitalized, 0.4 – 13% will develop myocarditis (inflammation of the heart). Most recover fully within 3 weeks. (17)

Serious outcomes and complications are exceedingly rare, especially for healthy children and adults under 65.



# A Brief History of Pandemic Flu

Many people point to the 1918 – 1919 Spanish flu as a “what if” scenario. Approximately one-third of the world’s population was infected, and about 50 million died (675,000 in the US).



But why was this pandemic so severe? And could it happen again?

There were a number of factors at play. First, there were no antibiotics or other treatments for complications that happened. Many people died of bacterial pneumonia because there was no way to treat it.

Second, aspirin was a new drug, and safe doses were not yet understood. Many people took a lot, and some now believe that aspirin toxicity, not the flu itself, killed many. (21)

Poor sanitation, poor nutrition, and other location-based undiscovered factors have also been implicated.

We don’t know exactly why that flu was so deadly, but a lot has changed about the world in the last 100 years. Better nutrition, sanitation, and intervention for complications have come about. Plus, we know about safe doses of aspirin – as well as alternatives to these conventional remedies!

While pandemic flu could circulate again – and did, in the 1950s, 1970s, and 2009 – nothing has ever been as severe or deadly.

# Identifying and Avoiding Propaganda

We have looked at a lot of scientific studies now. There are many more out there that we haven't covered (search "flu pubmed" to find them).



“Propaganda” is information that is purposely misleading and attempts to bias others towards a specific way of thinking. When making a health decision, it is important to ignore the propaganda and find the facts.

How to recognize propaganda:

## Vague Statements

Propaganda purposely tries not to engage peoples' critical thinking skills. It will make vague, broad, and sweeping statements. “Get your flu shot!” or “Everyone needs a flu shot!” are examples. They do not provide any information, invite any questions, and behave as though everyone is and should be on the same page.

## What-If

Propaganda uses fear tactics. “But what if you got sick and it was complicated and you died? Wouldn't your family feel horrible? Why would you do that to them?” It focuses on worst-case scenarios and unlikely outcomes instead of presenting the risks and benefits in a balanced fashion.

## “Just Trust Me”

Those spreading propaganda don't have to prove their point or have evidence to back them up. They will say “just trust me” or “everyone knows...” Those who are spreading truth will link to their evidence and encourage you to ask questions!

## Unbalanced Info

Propaganda only has one side: their view. They do not acknowledge that there are other viewpoints out there that may be valid. If presented with another view, they will try to shut it down, attack the people sharing it, or say there simply isn't another side and it's all just made up.

If you are faced with propaganda, don't believe it! Insist on asking questions and getting real answers.

# Are There Other Options?

Despite what the mainstream says, the flu shot is not the only available way to protect your health. There are many herbs and even healthy foods that can protect you, too!



Elderberry is a popular herb for fall and winter health, and for good reason. It is rich in vitamins and minerals as well as anti-inflammatory compounds. It may be beneficial against pain, seasonal allergies, and as a general immune support. Elderberry also fights flu symptoms, (22, 23) and it reduces the duration of cold symptoms. (24)

Every vitamin and mineral is important to overall health, because our bodies use them to basically do everything! But a couple stand out as especially important for immunity.

Vitamin C is one of those all-important vitamins, because it protects the immune system. (25) It may also reduce the risk of pneumonia or other infections. (26) There's a lot more research to be done about vitamin C's benefits, but what we know so far is very encouraging!

Vitamin D is another important vitamin. It's not really a vitamin, though, it's a pre-hormone. It helps our bodies make a lot of our hormones (chemical messengers) to tell our cells what to do. It is important to overall health (27, 28) and it may reduce the risk of flu. (29, 30)

A healthy diet that is rich in fruits and vegetables, light exercise, and outdoor time and important to staying healthy in the fall! And since life isn't perfect, if you need a little extra help, check the next page!

# The Fall Immune Support Trial Pack

In a perfect world, we'd all have time to eat the best diets, filled with fruits and veggies, whole grains, and pasture-raised animal products. But that's not always easy, for a variety of reasons.

We can help. :)

From Sept. 20 – 23 only, we'll be offering our Fall Immune Support Trial Pack.

The pack combines three of our top-selling fall/winter supplements – Elderberry Elixir, Immune-Aid Vitamin C Powder, and Vitamin D Cream. We're also adding in a PDF called "How to Use Herbal Vitamins for Immune Support." It's our goal to support you in having the healthiest winter yet!

Our products are 100% clean. Most of our ingredients are certified organic. We never use artificial flavors, colors, added sugars, parabens, fragrances, or any fillers or fragrances. We're also free of most allergens, including soy, dairy, nuts, corn, gluten, and peanuts.

This trial pack will be 61% off the retail price for a very limited time only! It's our way of saying, we think \*everyone\* deserves clean products and a healthy winter.



## Elderberry Elixir

Elderberry is an alterative, meaning that it purifies the blood and supports the immune system. We've paired it with other synergistic herbs (mullein in both versions; orange peel and calendula in Kids; and clove, ginger, and astragalus root in Original) to provide powerful immune support and more. The other herbs help with lung function, kidney health, gut health, and more!

Use daily for best results. Kids take 2 – 5 drops and adults, 10 – 20.

# The Fall Immune Support Trial Pack



## Immune-Aid Vitamin C Powder

Our vitamin C powder is simple. It contains organic camu-camu, organic orange peel, organic acerola berry, and organic green stevia. That's it! These berries are rich, natural sources of vitamin C, bioflavonoids, and antioxidants, plus trace amounts of other vitamins and minerals.

Use  $\frac{1}{4}$  -  $\frac{1}{2}$  tsp. per day to get the nutrition you need. Add to a smoothie, applesauce, or yogurt for best results. 375 mg of vitamin C per teaspoon. Safe for all ages 6 months+.

## Vitamin D Cream

We identified the natural oils that had the highest naturally-occurring vitamin D – plus, vitamins A, E, and K2. These oils are cod liver oil, avocado oil, emu oil, and mango butter. We combined them in this simple cream. It's easy to apply topically and absorbed up to 8x better than oral supplements. (Plus, no fishy burps after!)



Use a pea-sized amount up to a quarter-sized amount per day, rubbed into a 'fat rich' area like stomach or thighs.

Approximately 170 IU of vitamin D and 1700 IU of vitamin A per teaspoon. Safe for all ages.

## How to Use Herbal Vitamins for Immune Support

Our simple, 10-page guide will walk you through the benefits of several different vitamins, where to find them, healthy (and easy!) meal and snack ideas, and how to protect your family's health using natural herbs.

If you want to grab it, be sure to visit:

<https://www.earthley.com/fall-immune-support-trial-pack/> between Sept. 20 and 23! (We'll also email you to let you know when it's available.)

# Resources

- 1 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6160951/>
- 2 -- <https://www.ncbi.nlm.nih.gov/pubmed/25386965>
- 3 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6027411/>
- 4 -- <https://www.cdc.gov/flu/vaccines-work/vaccineeffect.htm>
- 5 -- <https://apps.who.int/iris/bitstream/handle/10665/255203/9789241512121-eng.pdf>
- 6 -- <https://pdfs.semanticscholar.org/8bc2/8f3fcc28cde84519019d6af98289f6c70465.pdf>
- 7 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5853256/>
- 8 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3404712/>
- 9 -- <https://www.sciencedirect.com/science/article/pii/S0264410X18303153?via%3Dihub>
- 10 -- <https://www.ncbi.nlm.nih.gov/pubmed/25999283>
- 11 -- <https://www.ncbi.nlm.nih.gov/pubmed/31232571>
- 12 -- <https://www.ncbi.nlm.nih.gov/pubmed/28847694>
- 13 -- <https://www.ncbi.nlm.nih.gov/pubmed/22235050>
- 14 -- <https://www.ncbi.nlm.nih.gov/pubmed/24518843>
- 15 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5479975/>
- 16 -- <https://www.ncbi.nlm.nih.gov/pubmed/18374680>
- 17 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5596521/>
- 18 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5617856/>
- 19 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4249341/>
- 20 -- <https://academic.oup.com/jid/article/190/8/1369/878092>
- 21 -- <https://academic.oup.com/cid/article/49/9/1405/301441>
- 22 -- <https://www.ncbi.nlm.nih.gov/pubmed/15080016>
- 23 -- <https://www.ncbi.nlm.nih.gov/pubmed/22972323>
- 24 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4848651/>
- 25 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3783921/>
- 26 -- <https://www.ncbi.nlm.nih.gov/pubmed/28353648>
- 27 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3356951/>
- 28 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3649720/>
- 29 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6121423/>
- 30 -- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4463890/>
- 31 -- <https://www.fda.gov/media/99172/download>