

# Elderberry Confirmed as Immunity Booster

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✓ Fact Checked

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## STORY AT-A-GLANCE

- › Research found compounds in black elderberry (*Sambucus nigra*) could directly inhibit viral entry into cells and subsequent replication, in part attributed to the anthocyanidin responsible for the vivid purple coloring of the fruit
- › Flu is caused by the influenza virus, triggering fever, cough, sore throat, muscle aches and fatigue lasting five to seven days; you may be infectious up to 24 hours before your first symptom
- › Flu vaccines are produced before the first seasonal outbreak, so manufacturers can only estimate which viruses to include in the vaccine; according to the Centers for Disease Control and Prevention, the flu vaccine has been less than 50% effective more than half the time in the past 14 years
- › Elderberries are high in phytonutrients but must be cooked thoroughly before use as they contain a poisonous cyanide-producing chemical. In addition to elderberry, using quercetin during a viral illness may reduce the length of your illness

**Elderberries have been used for hundreds of years for their health benefits. Many believe the high number of antioxidants in the berries contribute to its ability to fight the flu, support the immune system and relieve colds. Elderberries are the fruit of the Sambucus tree, the most common of which is *Sambucus nigra*.<sup>1</sup>**

The plant, also known as black elderberry, European elderberry and European elder, has documented origins dating as far back as 2000 B.C. in Switzerland, where there is evidence that the ancient Swiss cultivated it. However, since it's also believed to be

native to North America, historians speculate that it's possible its seeds were spread by the retreating Ice Age more than 10,000 years ago.<sup>2</sup>

Recipes using elderberries for medicinal purposes have been recorded dating back to ancient Egypt, where they were used as a skin and burn potion.<sup>3</sup> Historians generally credit Hippocrates as the first physician to use it, who described the elderberry as his "medicine chest."<sup>4</sup>

Herbal products and folk medicines have been used for centuries to combat a range of ailments, sometimes to the embarrassment of modern scientists. A chemical and biomolecular engineering research team from the University of Sydney focused a new study<sup>5</sup> on the phytochemicals and compounds found in elderberries that may positively affect health.

## **Elderberry Extract May Minimize Flu Symptoms**

Although there are several different types of elderberry plants, the most commonly known and studied is the *Sambucus nigra*. Supplements are available as syrup, gummies, lozenges, pills and tea, and were believed to work by supplying antioxidants and supporting the natural immune support response.<sup>6</sup>

In the current study,<sup>7</sup> researchers found compounds in the elderberry could directly inhibit the flu virus's entrance into cells and subsequent replication. Flu-fighting properties had been observed in previous studies, but this group examined the actual mechanism the phytochemicals used to combat the influenza infection.

The researchers used commercially cultivated elderberries, which were used for elderberry juice serum. They applied this to cells before, during and after they had infected them with the influenza virus. As expected, the juice was effective at stopping the virus from infecting the cells.<sup>8</sup>

However, they were surprised to find the juice also effectively inhibited replication after the cells had been infected with the virus. The authors found this significant since

blocking the virus at several stages increases the potential it may inhibit infection. Study author Fariba Dehghani, Ph.D., commented:<sup>9</sup>

*"In addition to that, we identified that the elderberry solution also stimulated the cells to release certain cytokines, which are chemical messengers that the immune system uses for communication between different cell types to coordinate a more efficient response against the invading pathogen."*

The team also discovered the antiviral activity was in part attributed to the anthocyanidin compounds, phytonutrients responsible for the vivid purple coloring in the fruit. The study supported the results of a previous study<sup>10</sup> in which adults suffering from flu-like symptoms who took elderberry syrup had their illnesses clear on average four days sooner than those who took a placebo syrup.

Another study<sup>11</sup> tested the effectiveness of an elderberry product on 312 overseas air travelers. The researchers found there was not a statistically significant difference in the number who acquired a cold, but those taking the syrup had a shorter duration and less severe cold symptoms than the control group.

## Key Facts About the Flu

Influenza, commonly called flu, is a contagious respiratory illness that may cause mild to severe symptoms. Although some of the symptoms are similar, flu is different from a cold caused by a separate set of viruses. According to the Center for Disease Control and Prevention (CDC),<sup>12</sup> flu symptoms may occur rapidly and include:

Fever or feeling feverish and experiencing chills	Muscle or body aches
Headaches	Sore throat
Cough	Runny or stuffy nose

Some may experience vomiting and diarrhea, although this is more common in children than adults. Most think of flu season occurring between October and May when millions across the U.S. contract the virus.<sup>13</sup> However, while this is the most common time, the virus may spread at any time during the year.

Wintertime flu is more common as the virus lives longer indoors during the winter months when the air is less humid than it is outside. During the winter, we also tend to spend more time indoors and have closer contact with others, making it easier for the virus to spread.<sup>14</sup>

The virus spreads through the air after an individual who is infected sneezes, coughs or speaks. Sometimes it may be passed through an object that's been touched or coughed on. An individual may touch the contaminated item and then touch their nose or mouth, at which time the virus enters their system.

Those carrying the virus may be contagious 24 hours before their symptoms first appear and up to seven days after they experience their first symptoms. This means it's possible to pass the flu virus on even before you know you're sick. Symptoms of flu usually last from five to seven days.<sup>15</sup>

While there are more than 100 different viruses known to trigger cold symptoms, there are only four influenza viruses.<sup>16,17</sup> Scientists have named them Types A, B, C and D.

Type A flu viruses may be found in different animals as well as humans, including ducks, chickens, horses, pigs and seals.<sup>18</sup> Type B viruses only affect people. Type C viruses cause mild respiratory symptoms while Type A and B are responsible for seasonal outbreaks. Type D is associated with cattle and so far has not been known to infect humans.<sup>19</sup>

## **The Flu Vaccine Will Always Struggle To Be Effective**

Each year the influenza virus changes slightly, which the CDC describes as drift or shift.<sup>20</sup> In some years, this means flu symptoms may be mild as your body was exposed to a similar virus and has produced antibodies to fight the infection. Approximately every 10 years to 40 years the virus undergoes a major change and more people get severe symptoms and a pandemic may arise.<sup>21</sup>

Vaccines are produced before flu season begins, so scientists must resort to an educated guess as to how the virus may have changed from the year before to adjust their vaccine for the current year.

According to the CDC, three production technologies have been approved by the U.S. Food and Drug Administration (FDA), including egg-based vaccines, cell-based vaccines and recombinant vaccines.<sup>22</sup>

Each is made by manufacturers in the private sector. Over the last 14 seasons, CDC data show the vaccine is less than 50% effective more than half the time.<sup>23</sup> As just one example, the CDC estimated the overall effectiveness for the 2017 flu vaccine was a modest 38%.

## **Steer Clear of Drugs to Treat the Flu**

Should you or your child be infected with the influenza virus, your doctor or pediatrician may recommend Tamiflu.<sup>24</sup> However, it's important to note this antiviral drug shortens flu symptoms by less than 17 hours,<sup>25</sup> does not reduce viral spread,<sup>25</sup> and does not lessen your risk of complications such as pneumonia.<sup>26</sup>

A review of the literature by the Cochrane group also warns that the health risks associated with Tamiflu could far outweigh the benefits.<sup>27</sup> Many pharmaceutical drugs come with side effects, and Tamiflu is not exempt. Risks may include seizures, brain infections, psychosis and other neuropsychiatric problems.

A 2015 study<sup>28</sup> reported how a 22-year-old man experienced auditory hallucinations, memory deterioration, mood swings, suicidal feelings and insomnia after taking the

drug. An ABC News story<sup>29</sup> described how a 6-year-old girl started hallucinating and attempted to jump out a second-story window after taking Tamiflu.

Another study<sup>30</sup> found more than half of all children suffered side effects from Tamiflu. A journalist in the Atlantic noted,<sup>31</sup> "The only people helped by the proven-to-be-ineffective drug are its manufacturers." A 2013 Forbes<sup>32</sup> article spelled out several flaws in the science behind Tamiflu, and how the benefits were overstated.

Despite this overwhelming evidence, the CDC still recommends flu vaccines and antiviral drugs like Tamiflu and continues to claim the drugs may prevent serious complications,<sup>33</sup> although the evidence clearly shows these antivirals do no such thing. The take-home message is to do your homework and not blindly follow public health recommendations.

## More Benefits to Using Elderberry

While researchers found elderberry products could reduce cold and flu symptoms without the side effects associated with the flu shot or antiviral medications, the berries may also have additional benefits. If you choose to pick your own elderberries, they may be used to make juice, wine, extracts, syrups and jams.<sup>34</sup>

When picking, seek out blue, dark purple or black fruit as only these varieties may be eaten.<sup>35</sup> It is crucial that they are completely ripened and you cook them thoroughly before ingesting since the raw berries are poisonous, containing a cyanide-producing chemical.<sup>36</sup> In addition to the flu fighting benefits, elderberries may also:

Promote detoxification <sup>37</sup>	Reduce cardiovascular disease <sup>38</sup>
Promote wound healing <sup>39</sup>	Soften skin and treat acne <sup>40</sup>
Soothe sunburns <sup>41</sup>	Promote the healing of sprains and bruises <sup>42</sup>

# Naturally Support Your Immune System

Your immune system is your first line of defense against infections, so the most effective method of preventing illness is support your immune system. Your diet and other lifestyle factors are foundational to immune function. Nutrition may be the most vital component in maintaining – or gaining – a healthy immune system.

The addition of elderberry and taking quercetin during a viral illness may help reduce the length of your illness. Research from Appalachian State University in North Carolina found quercetin could reduce illness and boost mental performance after extreme physical stress.<sup>43</sup>

Successfully running the gauntlet of flu season may be simply a matter of keeping your immune system boosted by applying a few key health strategies. Aside from school and work, other points at which your immune system might be compromised include during travel, and when you are sleep deprived or stressed out.

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