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Critique #1

### Echinacea for the Common Cold

1. Echinacea is a flowering plant indigenous to the plains of North America. It is an herbal remedy that is mainly used to treat upper respiratory infections, but also has other benefits. Native American people were using this remedy to treat illness for centuries before European medicine was introduced to North America. It is suggested that Native Americans used Echinacea as a healing modality because of its widespread availability and its effectiveness towards treating diseases (Hudson, 2012). According to botanists there are nine species of the Echinacea plant, however not all of these species can be used medically. The three species used to treat illness are *Echinacea purpurea*, *Echinacea angustifolia*, and *Echinacea pallida*. *Echinacea purpurea*, also known as purple coneflower, is the most common species used to treat upper respiratory infections or common colds (Hudson, 2012). All parts of the Echinacea plant hold valuable attributes (roots, herbs, flower and whole plant), yet the most robust part of the plant is its roots. The dried roots of the plant are converted into various forms for easier ingestion. Some of the most common forms of Echinacea include capsules and tablets ranging from 85mg – 500mg of herbal extract powder or whole root, fresh pressed juices, teas, hydroalcoholic extracts, lozenges, and tinctures (Nontraditional Choices, 2003).

2. Echinacea includes four main components that contribute to the health of upper respiratory infection. These components are alkaloids, glycoproteins, polysaccharides, and caffeic acid derivatives (CADs); these components are all considered to be immune enhancers (Linde, Barrett, Bauer, Melchart, Woelkart, (2006). Studies have shown that the alkaloids also known as fatty acid amides, present in Echinacea have a strong impact on enhancing the process of phagocytosis and also have anti-inflammatory properties (Linde et al., 2006). Phagocytosis is a process in which immune cells literally “eat” anything that is unfamiliar to them in order to protect the cell. It is a way of eliminating debris, pathogens and bacteria that could harm the cell. The impact of alkaloids on immune cells is just one benefit of Echinacea. Glycoproteins, polysaccharides, and CADs have been shown in studies with mice to activate natural killer cells and activate antiviral activity (Linde et al., 2006).
3. Having an open mind towards new practices and being an adamant believer in CAM’s attention towards the whole body and entire wellness of an individual I was slightly appalled at what was being said at [www.sciencebasedmedicine.org](http://www.sciencebasedmedicine.org) and [www.quackwatch.com](http://www.quackwatch.com). These websites had a few valid arguments against Echinacea but most followers seem to be completely closed off of the possibility of Echinacea being effective. The advocates of science-based medicine noted that federal law very poorly regulates Echinacea because it is considered a natural supplement and not a drug. As a result of this, there are many different dosages available to the public. How would an individual know what dosage is needed to treat their symptoms? These sites also mention that because Echinacea is a

plant, it is hard to determine the potency of one plant to the next, also from one part of the plant to another part of the plant. It is stated that this lack of consistency is making it hard to produce valid research confirming a positive influence of Echinacea against the common cold (Hall, 2011). I am trying to not be completely bias toward my findings on these sites, but I'm not sure that I agree. I did appreciate that [www.sciencebasedmedicine.org](http://www.sciencebasedmedicine.org) offered the option to make comments about the articles posted there.

4. On PubMed I conducted a very broad search with the simple search term of "Echinacea". With this search term I received 963 results. After reducing my search to "Echinacea and common cold" I found much fewer results, under 150 articles.
  - a. The first abstract I reviewed came from the article "Safety and Efficacy Profile of Echinacea purpurea to Prevent Common Cold Episodes: A Randomized, Double-Blind, Placebo-Controlled Trial". The abstract discussed how the article would investigate the safety and efficiency of Echinacea in the common cold. A study was conducted in 755 healthy individuals for a period of four months. Individuals were given either Echinacea or placebo. The study confirmed that Echinacea reduced the number of colds, it inhibited confirmed colds and virus infections, and it prevented recurrent colds.
  - b. "Complementary and alternative medicine for prevention and treatment of the common cold". This articles abstract discussed the use of vitamin C, Echinacea purpurea, zinc lozenges and other complimentary practices for

treatment and prevention of the common cold. The conclusion states that vitamin C is recommended and also there is moderate evidence supporting Echinacea and zinc as treatment.

- c. "Echinacea for treating the common cold: a randomized trial" The purpose of this case study was to determine possible benefits of the use of Echinacea for treatment of the common cold. People age 12-80 were given either Echinacea pills (blinded), Echinacea pills (open-label), no pills, or placebo pills (blinded). The results of this abstract showed a very small decrease of the duration of the common cold in those that took the Echinacea. Nonetheless, the conclusion declares that there is not enough substantial evidence to support Echinacea in changing the course of the common cold.
- d. "Echinacea for prevention of the common cold: an illustrative overview of how information from different systematic reviews is summarized on the internet." This abstract was very interesting, and made me want to read the article. The objective of this study was to identify how three reviews of Echinacea could lead to completely different conclusion on its effectiveness when treating the common cold. These reviews of Echinacea were found on twelve different websites that portrayed contrasting conclusions of Echinacea. The study demonstrated the lack of consistency when consumers are searching for evidence of the effectiveness of Echinacea.

- e. "Immunologic in vivo and in vitro studies on Echinacea extracts" This abstract showed sound research of the scientific benefits of Echinacea on the body. A study conducted on mice demonstrated increased activity of phagocytosis with the introduction of Echinacea.
  - f. "Echinacea extracts modulate the pattern of chemokine and cytokine secretion in rhinovirus-infected and uninfected epithelial cells." This abstract states that Echinacea purpurea is one of the most commonly used herbal treatments in Europe and North America. Human bronchial cells were exposed to Rhinovirus and Echinacea extract. The results showed that Echinacea produced various molecules that inhibited the growth of the virus. Thus, providing support of the benefits of Echinacea.
5. The information found on <http://www.medicalnewstoday.com> reported similar general information to what I found on other online databases. The history of the herb and its uses matched the information I had already discovered. This site gave the pros and cons of Echinacea and also informed the reader of possible scams when looking to buy the product. This sight gave a neutral opinion toward Echinacea. The website presented some validating references but because it is a .com site it probably wouldn't hold up as a reference when searching for sound research.
- <http://www.botanical.com> is another website I examined to research Echinacea. This site did not display substantial information on the history, description and use of the plant. It was strictly used as a way of purchasing Echinacea supplements, seeds, and other herbal products as well as gardening accessories

and books on the practice of herbal healing. The products appeared to be moderately priced and inexpensive, however I do not know the going rate for many of these products. It would be beneficial to search around for other prices on this product before buying.

<http://www.mayoclinic.org/> The mayo clinic reported very basic findings on Echinacea. This site simply stated that studies have show Echinacea to reduce cold symptoms by half a day, while other studies have shown no benefits. I didn't like that the discussion on Echinacea ended with "consult your doctor before using". This site may be collaborated by doctors, but it appears to have a "quick fix" mentality.

6. Personally I am not hesitant to use Echinacea; it is something I have previously used and saw no ill-mannered side effect. However, for someone less open minded there are some arguments of why Echinacea might not be for him or her. If someone grew up in a family that has always used conventional based medicine Echinacea is not a conventional based treatment. Most primary care physicians are not going to prescribe Echinacea for the common cold. This could be a perfectly good reason for someone not to try it. Another reason to not use Echinacea could be that federal law doesn't regulate it because it is retailed as "food" or a "dietary supplement". Some individuals may be unwilling to believe that something marketed like this could actually cure cold symptoms. A third reason is the lack of accessibility to positive research showing its success. It is much easier to find articles discussing how Echinacea has no effect on the common cold if you don't have the resources to find the articles discussing its

strengths. It is also hard to find consistency in research showing Echinacea's positive effects. Another reason against Echinacea is that there are a lot of faulty and mislabeled supplements on the market. As a result of the lack of regulation on Echinacea some companies could be trying to scam the consumer in order to benefit themselves. A final reason people may be hesitant on using Echinacea is if the person is affected with a lot of allergies. They might not want to experience an allergic reaction to Echinacea.

7. I would use Echinacea for many reasons. One being, I like that it is an all-natural remedy and not a man made medication; as long as research is done to find reputable companies making and selling the Echinacea supplement. Another reason to use Echinacea is for people who may not like taking pills. Echinacea can be ingested through teas and lozenges, never having to worry about swallowing a pill. I have found supportive research showing that Echinacea produces molecules that help protect cells against invasive organisms. Personally, this is a good enough reason for me to use Echinacea. If a person was raised in a more complementary style of healing as opposed to conventional medicine they may be more inclined to use Echinacea instead of over the counter cold medicine. In the past, I have been prescribed antibiotics for a harsh cold. These antibiotics have sometimes created a worse sickness than the one I started out with. This could be that antibiotics destroy all bacteria in the body, even the good bacteria. Echinacea only kills molecules that are foreign to the body, leaving good bacteria to help fight off infection. I have a very open mind to

CAM practices and with an education in the ITP department I hope learn the correct way to use them.

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