

“Take it till your breath stinks”

Garlic for prevention and treatment of respiratory infection

by Paul Bergner

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As the covid-19 pandemic is approaching a peak in North America, we are seeing a flurry of warnings from health agencies warning against the use of alternative or natural remedies. We agree that with an infection that has the potential to become lethal individuals should not take a romantic view of natural remedies or seek magic bullets or miracle cures for the viral infection. On the other hand, those issuing the warnings, whatever their licenses or degrees, are unfamiliar with the scientific field of medical herbalism, or of the scientific basis for some of the remedies that they criticize. We have no trials on natural remedies for covid-19 infection, and indeed we have no trials of *anything*, it is too new. But we do know that some natural remedies, herbal and nutritional, can increase host resistance, and some have been found specifically to reduce the frequency, severity, or duration of respiratory infections. Garlic reduces the frequency of infections with common cold or influenza pathogens. It may well also reduce the frequency of covid-19 infections, if the same mechanisms of resistance are involved. We know that covid-19 cause cause infections without symptoms at all, can cause mild or moderate disease, or may require hospitalization, or intensive care. We look forward to what medical science can come up with for the critically ill patients in the hospital, But meanwhile, we can try our best to use natural remedies to increase host resistance to prevent the progression of a covid-19 infection to a critical end-stage.

Pre-clinical science

Basic and pre-clinical studies shows that garlic can activate and enhance many aspects of the immune system. This includes activation of immune cells, increasing antibody production, and activation of natural killer cells, a component of the body's inherent anti-viral machinery. (Arreola et al). Garlic has also been widely studied in animals, for its effect on immunity and inflammation, showing results similar to the in-vitro research. In one illustrative trial, researchers used a standard method to infect mice with influenza by infusing the virus into their noses. After pretreating a group of mice with garlic, they were then unable to infect them at all with this method. (Eşanu and Prahoveanu)

Human trials

In a human trial, 146 participants received either a garlic supplement or a placebo, once daily. After 12 weeks, there were 24 occurrences of the common cold in the garlic intervention group compared with 65 in the placebo group, a increase of 270%. Subjects in the garlic group had 111 days of total illness, 4.6 days per episode, while those in the placebo group experienced 366 days sick, a 330% increase, with 5.6 days per episode. The garlic powerfully prevented infection with the common cold, an appeared to be a successful treatment as well, with one day shorter duration for those taking garlic. (Josling)

In a Russian trial in children aged 7 to 16 years, a garlic product (Allicor, enteric-coated slow-release garlic tablets) was compared to placebo. Subjects were screened for any respiratory infection, including influenza or the common cold. Forty-two children received garlic and were compared to 4 who received placebo. The Allicor reduced the frequency of respiratory illness by 170%. (Adrianova et al.)

Another randomized controlled trial compared an aged garlic extract to placebo for treatment rather than prevention of respiratory infection including both influenza and the common cold. Participants took about 2.5 grams of the garlic extract per day. In findings similar to those in animal trials and other research in humans, subject receiving garlic had increased proliferation of NK cells, part of the body's primary defense against viral infection. After 90 days, there was no significant difference in the incidence of colds or influenza between the groups. However, the group consuming

garlic had significantly reduced symptom scores (21% fewer). The garlic group also had 76% fewer days with decreased activity (53 in the garlic group, vs 126 in the placebo group), also also 61% fewer days lost per episode of illness. (Nantz et al.)

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Garlic appears to act in part through enhancing immunity and host resistance to infection. It's breakdown product may also have direct antimicrobial effects in the lungs and respiratory tract. When garlic is ingested, and then digested, most of its its odorous breakdown products are cleared within a few hours. Of the four main compounds responsible for “garlic breath” the major constituent that persists in the serum is allyl methyl sulfide (AMS). This not only is AMS infused in the serum for 24 hours or more after an oral garlic serving, but it is excreted through the lungs, the pores of the skin, and the urine. And it has also been found to have antimicrobial properties. In one trial of experimental pneumonia in pigs, AMS was first found to inhibit a common pneumonia-causing bacterium for pigs in the lab dish. Then pigs were given garlic in their feed. Later when infected with the same microbe experimentally, only 27% of the garlic-fed pigs showed pneumonia lesions in the lungs, compared to 47% of the pigs who did not receive garlic.(Becker et al.) Another aromatic compound from garlic excreted through the lung is diallyl disulfide (DAD). DAD was found in the lab dish to inhibit the growth of three different classes of bacteria, and also yeasts. (Uzun et al.) In another trial, DAD also inhibited the processes that lead to biofilm formation among microorganisms (Hongman et al.) DAD also activates neutrophils, one of the key immune cells in acute infections (Schepetkin et al.)

The garlic odor on your breath, even if perhaps socially offensive, may in fact be delivering antimicrobial, anti-biofilm, and immune stimulating components of garlic directly to the lungs, and disinfecting the airway from the inside out. “Take it till your breath stinks” might be a useful motto for the covid-19 pandemic.

Paul Bergner is director of the North American Institute of Medical Herbalism and editor of the *Medical Herbalism* journal. He has practiced nutrition and medical herbalism since 1973. He has trained more than 400 student residents through an academic year in teaching clinics for clinical nutrition and medical herbalism since 1996. He has taught both medical herbalism and clinical nutrition at both the undergraduate and graduate levels of the university, and has developed and delivered more than 500 hours of Continuing Education for herbalists, nutritionists, acupuncturists, nurses, and naturopathic physicians. He is author of the *Healing Power of Garlic*, the *Healing Power of Echinacea, Goldenseal and the Immune Herbs*, *The Healing Power of Minerals and Trace Elements*, and four other books on herbalism, nutrition, ethnobotany, Chinese medicine, and naturopathic medicine.

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