



IMMUNE ENHANCEMENT DURING THE COLD AND FLU SEASON

By: D. Graeme Shaw, MD

According to the Centers for Disease Control and Prevention (CDC), the flu is a serious contagious disease. The CDC states that on average, more than 36,000 people die each year in the U.S. from seasonal flu complications. But the good news is that there is much you can do to prevent the flu in the first place.

As a physician, I'm often presented with patients looking for relief of their cold and flu symptoms, as well as ways to enhance their immune system for prevention. Since this seems to be such a popular topic as we approach winter, and with all the news coverage of influenza and flu epidemics predicted for this year, I think it is important to review some of the body's natural immune functions that protect us from viral attacks.

Can Energy Influence the Immune System?

Let's begin by looking at the Eastern medicine point of view. It involves the concept of three primary organ energies that support our immunity and immune system:

1. The lung energy controls cellular immunity – the white cells that identify and protect us against infections. For instance, in Eastern medicine philosophies, low lung energy can make us vulnerable to respiratory infections (i.e. sore throats, bronchitis).
2. The kidney energy is believed to be an important controller of our humoral immune system, or the production of immunoglobulins that fight infections. These immunoglobulins are very important in fighting viral infections and bacterial infections like pneumonia.
3. The liver energy, in Eastern medicine, has many functions including one of the

most important - immune resistance. It also has other controlling functions regarding enzymes, detoxification and antioxidant activity.

These important energetic organ functions can make the cells stronger in suppressing the invasion of disease-producing microorganisms called pathogens, pathogenic toxins and their byproducts like inflammatory molecules (cytokines, etc.). All three of these energies tend to decrease in the winter, making us more susceptible to respiratory and viral infections.

Effect of Environmental Factors

Eastern philosophies also believe that other environmental factors can affect these energies. Wind can suppress the lung energy. Fear, anxiety and insecurity can depress the kidney energy. The liver energy can be affected by many things, including emotions of anger and frustration. Liver energy function can also be suppressed by preexisting toxicity from environmental contaminants, and food allergies.

Organ energies are enhanced by rest, relaxation, healthy diet and exercise.

So what are some of the various things that can be done to enhance our immune function? As mentioned in previous articles, all organ energies are enhanced by rest, relaxation, healthy diet and exercise. Even simple breathing exercises can be particularly helpful to support healthy lung energy.

Choose Fresh, Healthy Food

Diet is always important. The fresher the food, the better! Try to avoid

or at least limit your consumption of sugar, white flour and processed foods, all of which can suppress our immune function. Foods to which we are allergic can also suppress our liver and adrenal energies, making us more vulnerable to infections. It's unfortunate that the American diet heavily favors dairy and wheat, as these foods can impede the liver's ability to fight off infections. So healthy dietary choices play an important role.

Foods to which we are allergic can also suppress our liver and adrenal energies, making us more vulnerable to infections.

The liver is a fascinating organ that does so many functions for the body. To help these functions, the liver depends upon anti-oxidants like Vitamin C, A, E, B6, B12. Dietary supplementation can be very beneficial to those who may be deficient. For instance, in the testing I've done in my practice, it appears that most of my patients are low in Vitamin D. This vitamin is an important immune cofactor.

Even though Vitamin D is found in foods like fish, liver, cheese, egg yolks, milk and cereal, it can often be missing in many people's processed diet and thus can cause deficiencies. Other common nutrient deficiencies include antioxidant vitamins and major minerals like magnesium, zinc and selenium, all of which are important for healthy immune function.

Glutathione Plays Key Role

Another helpful nutrient is glutathione, which is a tripeptide (three amino acids connected together). It's an invaluable aid to not only detoxification,

but also to support healthy viral suppression. Research suggests that viruses are only able to penetrate cell membranes and replicate by incorporating nucleic acid in cells that are low in glutathione. Thus sufficient glutathione may prevent replication of viruses.^{1,2,3}

Where does this valuable ingredient come from in our diet? It's mainly made from foods with high-sulfur content and amino acids. These could be onions and garlic, healthy meats or the cruciferous vegetables such as broccoli, Brussels sprouts, cabbage, turnips and cauliflower.

If you find this kind of diet challenging, there are various supplements that are precursors for glutathione, including whey protein, N-Acetyl Cysteine, MSM, SAME and Epson salts (often used in baths).

Research suggests that sufficient glutathione may prevent replication of viruses.

Probably my favorite is whey protein, which is the best-absorbed oral precursor for glutathione. Glutathione itself is available in health food stores, but it has limited absorption and must be broken down into individual amino acids to be absorbed. The advent of [liposomal glutathione](#) (glutathione attached to a liposome that is absorbed intact) appears to have countered this absorption defect.

Here are some healthy ways I have found to maintain an enhanced immune system during the vulnerable months of winter:

- Get adequate sleep and find ways to reduce stress.
- Drink plenty of fluids. (I choose water over beverages with sugar)

- Use physical exercises as well as breathing exercises to tune up my kidney, liver and lung energies.
- Choose a well-balanced diet that includes fruits, vegetables and healthy meats. For foods that support detoxification, include onions, garlic and cruciferous vegetables. Avoid refined sugar and white flour whenever possible, as well as excessive amounts of dairy and wheat. Identify and avoid any food allergies.

In addition to a healthy diet, I take these dietary supplements as needed:

- A good multimineral, multivitamin supplement in an easy to absorb form.
- To bolster glutathione levels, eat plenty of the above mentioned vegetables, plus whey protein, NAC or the liposomal glutathione.
- Antioxidants like Vitamin C, A, E and selenium, as well as Vitamin D, B6 and B12
- [Herbal supplements that support healthy immune function](#). These often include ingredients that fortify kidney, liver and lung energies.

The CDC confirms that healthy habits can help prevent the flu. Personally, I've found that when I do all the things listed above, it's very rare that I become seriously ill with a viral infection. Some of my patients who follow this regimen haven't had viral infections for years. So don't wait until you're sick to start implementing these immune-supportive habits. *



D. Graeme Shaw, M.D.

If you have any questions regarding the use of herbal dietary supplements to support your health, contact Get Well Natural at contact@getwellnatural.com or call 1-888-522-HERB (4372) or 408-260-9714, or visit the GWN website at www.getwellnatural.com or the offices at 4010 Moorpark Avenue, Suite 119, San Jose, Calif. 95117

**Statements in this article have not been evaluated by the U.S. Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.*

© 2009 Get Well Natural, LLC

Footnotes

1. Glutathione inhibits replication and expression of viral proteins in cultured cells infected with Sendai virus. Garaci E, Palamara AT, Di Francesco P, Favalli C, Ciriolo MR, Rotilio G., Department of Experimental Medicine and Biochemical Sciences, University of Rome, Tor Vergata, Italy. PMID: 1332709.

Abstract: inhibited the production of Sendai virus in African green monkey kidney (AGMK) cells. This result could be accounted for by a direct action of GSH on viral replication. The inhibitory action was associated to an increase of the GSH intracellular level, while the host cell metabolism was unaffected. The antiviral effect was related to decrease and inactivation of the hemagglutinin-neuraminidase (HN) virus glycoprotein. PMID: 1332709 [PubMed - indexed for MEDLINE]

2. Glutathione peroxidase protects mice from viral-induced myocarditis, M. A. Becka, R. S. Esworthy, Y. Hoc and F. Chub, a Frank Porter Graham Child Development Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27599-8180, USA, Department of Medical Oncology, City of Hope Medical Center, Duarte, California 91010, USA, c Institute of Chemical Toxicology, Wayne State University, Detroit, Michigan 48201, USA (The FASEB Journal. 1998;12:1143-1149.)

Abstract: Glutathione peroxidase 1 (GPX-1) is a selenium-dependent enzyme with antioxidant properties. Previous investigations determined that mice deficient in selenium developed myocarditis when infected with a benign strain of coxsackievirus B3 (CVB3/0). To determine whether this effect was mediated by GPX-1, mice with a disrupted *Gpx1* gene (*Gpx1*^{-/-}) were infected with CVB3/0. *Gpx1*^{-/-} mice developed myocarditis after CVB3/0 infection, whereas infected wild-type mice (*Gpx1*^{+/+}) were resistant. Sequencing of viruses recovered from *Gpx1*^{-/-}-infected mice demonstrated seven nucleotide changes in the viral genome, of which three occurred at the G residue, the most easily oxidized base. No changes were found in virus isolated from *Gpx1*^{+/+} mice. These results demonstrate that GPX-1 provides protection against viral-induced damage in vivo due to mutations in the viral genome of a benign virus.—Beck, M. A., Esworthy, R. S., Ho, Y.-S., Chu, F.-F. Glutathione peroxidase protects mice from viral-induced myocarditis. *FASEB J.* 12, 1143–1149 (1998)

3. Inhibition of influenza infection by glutathione, Jiyang Cai, Yan Chen, Shaguna Seth, Satoru Furukawa, Richard W. Compans and Dean P. Jones, Dept. of Biochemistry, Emory University School of Medicine, Atlanta, GA; Dept. of Microbiology & Immunology, Emory University School of Medicine, Atlanta, GA, Nutri-Quest, Inc., Chesterfield, MO, USA, 9 January 2003.

Abstract: Infection by RNA virus induces oxidative stress in host cells. Accumulating evidence suggests that cellular redox status plays an important role in regulating viral replication and infectivity. In this study, experiments were performed to determine whether the thiol antioxidant glutathione (GSH) blocked influenza viral infection in cultures of Madin-Darby canine kidney cells or human small airway epithelial cells. Protection against production of active virus particles was observed at a low (0.05–0.1) multiplicity of infection (MOI). GSH inhibited expression of viral matrix protein and inhibited virally induced caspase activation and Fas upregulation. In BALB/c mice, inclusion of GSH in the drinking water decreased viral titer in both lung and trachea homogenates 4 d after intranasal inoculation with a mouse-adapted influenza strain A/X-31. Together, the data suggest that the thiol antioxidant GSH has an anti-influenza activity in vitro and in vivo. Oxidative stress or other conditions that deplete GSH in the epithelium of the oral, nasal, and upper airway may, therefore, enhance susceptibility to influenza infection.