

## Preparing for the “Flu”

### *Stack the odds in your favor*

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The TV set blares another report on the Swine flu. Pharmacies are stripped of their supply of masks and rubber gloves. Pigs tremble in their pens! Whether this outbreak or the previous Avian Flu outbreak can be considered overhyped remains controversial, but what the majority of infectious disease specialists agree on, is that a worldwide pandemic of the flu is an inevitable event, one that occurs naturally every several decades.

What we call the “Flu” is caused specifically by the “influenza” virus, not to be confused with dozens of other viruses that can cause “cold” symptoms or “stomach flu” symptoms. Influenza is a virus that infects the respiratory tract of millions of people each year. It is highly contagious and is spread from person-to-person through respiratory secretions from coughing or sneezing. These virus-containing secretions contaminate the air, hands, and surfaces of



our environment. Compared with most other viral respiratory infections, such as the common cold, influenza infection usually causes a more severe illness. Symptoms usually include fever, cough, sore throat, runny or stuffy nose, as well as headache, muscle aches, and often extreme fatigue. Nausea, vomiting and diarrhea are less common. For most individuals, recovery takes about a week, although fatigue may last weeks longer.

This is a very variable infection, causing from moderate illness to pneumonia, hospitalization or even death. In North America, at least 30 million people will be affected, and 20,000 of us will die on average each year because of this illness. The 1918 influenza 'A' epidemic killed a half million Americans. The hours lost from school or work was enormous. The 1968 Asian influenza pandemic caused over 50,000 deaths in the United States and cost over 3.5 billion dollars in medical costs and lost workdays.

Preventing of influenza should be an on-going strategy, whether it's Swine, Bird, Monkey or any type of flu that may jump species and affect humankind. What to do?

Newer anti-viral drugs are being developed and stockpiled in case of a pandemic. However, alternative approaches to combating the flu show potential. Raising the body's natural levels of the tri-peptide "glutathione" is one strategy that shows great promise. However, let's begin by looking at some simple things that need to be done first.

### **THE BASICS**

What did your mother tell you? Some of her lessons are hogwash, but most are absolutely right on! Either way, listening to mom will usually keep you out of trouble...

*Wash your hands!* The Influenza virus is actually a very delicate little creature that won't live long outside of the warm, moist environment of a living being. It is quite sensitive to soaps and detergents and is quickly killed off by a good scrubbing. Ask any immunologist or microbiologist and they'll tell you: the most important way to curb infectious disease is to wash your hands.

*Cover your mouth!* Nasal, oral and lung secretions can contain millions of viruses. Sneeze into a room and you spread out a wonderful invisible curtain of viral smog. Perfect if your intention is to open up more parking spots in the lot downstairs. If you are sick, stay at home and have consideration for your

co-workers or classmates. Sneeze or cough into your hand or tissue. Hankies end up carrying the virus around everywhere. And, guess what? Wash your hands!

*Clean up!* Desks, handrails, pens, telephones and light-switches are all what we call vectors; a means of transportation that a virus can adhere to waiting for the next unsuspecting victim. A flu virus can survive for an hour or more on these surfaces if they are not washed off appropriately. Then wash your hands again.

*Don't pick your nose!* On average, people will touch their face between 6 and 12 times each minute. Bringing your hand to your face allows the virus to be introduced to your nose, mouth and eyes, the perfect surfaces for the flu to get into your bloodstream. If you absolutely must scratch your nose ... wash your hands!!!

*Don't go out without a hat!* Okay, mom was wrong here. You don't catch a "cold" from a *draft*; you get a cold from a contaminated doorknob, escalator handle, elevator button or bank machine keypad. This takes us back to Basic Rule #1 – wash your hands. A lot!

But, beyond mother's advice, what is the best way to prevent the flu?

## **VACCINATION**

Although there are schools of thought that suggest you don't take the "Flu shot" this still remains one of the mainstays of prevention. Clearly, some years the flu shot is going to be more effective than in other years. The problem with vaccinations is that new ones have to be developed each year since the influenza virus changes or mutates every year. Researchers must make an educated guess as to which strain will be coming next. Sometimes new strains come along and affect even the very healthy. In some years, there are more drastic changes in the influenza virus. This is what may eventually lead to a world-wide epidemic (pandemic) possibly killing millions.

Although there are potential complications and dangers to receiving a flu vaccination (including catching a milder form of the flu), it is still recommended that groups of high-risk individuals receive it.

#### **STANDARD TREATMENT**

Common sense prevails here. Eat well, sleep well, keep well hydrated, and do the things you need to do to ensure your body is at its peak to fight off disease.

If you do fall ill with the flu, health practitioners will recommend rest, plenty of fluids, non-prescription medications for fever, aches and pains, and occasionally decongestants or cough suppressants. Antibiotics do not work against viruses, but will sometimes be prescribed if a doctor thinks there is a secondary infection with bacteria such as a sinusitis or ear infection.

Standard treatment does nothing directly to knock back the flu virus. The idea here is to make the symptoms easier to tolerate.

#### **ANTI-VIRAL DRUGS**

Recently, scientists have developed certain classes of drugs that fight viruses directly. Much of this research has been stimulated because of epidemics of deadly viruses like AIDS or hepatitis, but the “flu” has not been ignored. Medications specifically directed at the influenza virus such as Tamiflu and Relenza have been approved and are being actively marketed.

#### **RAISING GLUTATHIONE**

The theory and laboratory evidence behind raising glutathione to combat the influenza virus stimulated several research teams to do human trials. Although some of these trials are a few years old, they are being looked at with new interest given the emergence of more deadly strains.

A group of European scientists at the University of Genoa, Italy, was one of the first to perform a major trial raising glutathione in human influenza infection. The subjects were given either placebo or NAC (N-acetyl-cysteine). NAC is a drug which effectively raises glutathione, although it has some disadvantages because there are often side-effects. They took this for six months overlapping the peak flu season. The participants kept a daily log of their health and symptoms, and some were tested for flu antibodies.

Although NAC did not provide full protection from flu germs, its effect was "striking" according to the study. When examining those taking NAC with laboratory-confirmed flues, it was found that only a quarter of them developed symptoms. In contrast, close to 80 percent of the men and women taking placebos developed clear-cut flu symptoms. This represented a major reduction of the likelihood of having flu symptoms by raising glutathione. In addition, nine out of the ten people in this study who did not need to spend any time in bed were on NAC. Finally, the subjects in which glutathione was elevated had decreased symptoms, decreased severity of symptoms and a shorter course to recovery.

More recently, researchers at Emory University in Atlanta Georgia published an article entitled "Inhibition of Influenza Infection by Glutathione". This team used both tissue cultures and living organisms to test whether raising glutathione would suppress the flu's progression. In live animals, glutathione decreased the viral count in lung and trachea tissues. This study suggests that glutathione has anti-influenza activity both in the lab and in animals.

#### **THE BOTTOM LINE**

It's a fight! As the third man in the ring says, "Protect yourselves at all times!" Be sure you don't overlook simple practices like hand-washing that can be done to prevent the spread of infectious disease. Eat well, sleep well and keep in shape. A strong, healthy body and a robust immune system is what ultimately will spell the difference between the sniffles and much more serious disease. And remember – *raising glutathione* is an important part of the puzzle!

***High-risk groups who should consider flu vaccination***

Ages 65 and older  
Chronic conditions including lung disease, diabetes and cancer  
Residents or employees of nursing homes and chronic care facilities  
Health care workers  
Jobs in contact with high-risk individuals

***'H' what and 'N' who?***

The flu comes in three flavors, influenza "A", influenza "B" or influenza "C". The "A" type is the most frequent single cause of the "flu". Influenza "A" is further classified into subtypes according to two proteins that coat its surface. One of these proteins is referred to as "H" (hemagglutinin), the other as "N" (neuraminidase). There are 16 types of "H" proteins and 9 types of "N" proteins. The most common forms of the flu are the H1N1 and H3N2 viruses. The "Swine Flu" making the headlines is a H1N1 strain. Alphabet chicken soup anyone?

***How does the flu make you sick?***

After a 48 hour incubation period during which the virus is busy making copies of itself inside your cells, a sudden chill and fever may develop. The chills, sweats, aches and pains, fatigue and headache can make some people quite miserable. Fever alone can cause death or major complications in certain individuals through hyperthermia or febrile convulsions ("fever fits"). A runny nose, teary eyes, and sore throat all contribute to the misery. Children are quite prone to nausea and vomiting, making adequate hydration a challenge.

In severe cases, the flu can go onto bronchitis or pneumonia where blood and sputum production can be quite overwhelming. The lungs can fill up with fluid and the patient can die from the lack of adequate oxygen. This is a form of pulmonary disaster called ARDS or "adult respiratory distress syndrome".

