



What To Do If You CONTRACT INFLUENZA

Including H1N1 (Swine) Flu or the Common Cold

BY WILLIAM FALON

With daily news reports warning of a swine flu pandemic, members have besieged our health advisors with questions about what they should do to protect themselves against the **H1N1** (swine flu) virus.

The good news is that **Life Extension**[®] members obtain a considerable amount of immune support via the supplements they already use, especially those taking high-dose **vitamin D**.

An important question, however, is what one should do if they develop symptoms of a viral infection? As the days grow colder, the risks of contracting common flu and cold viruses increase. Each year, flu virus infections kill around **36,000** Americans and cause miseries for millions.¹ An outbreak of the swine flu virus is expected this winter.

While certain supplements (and drugs) purport to shorten the duration of a viral infection, most of them fail to provide significant relief. Over the past 28 years, Life Extension[®] personnel have experimented with various *nutrients*, *hormones*, and *drugs* in order to minimize the impact of the common cold and typical flu viruses.

In this article, I will reveal what has worked for me personally to ward off common cold/flu viruses and what has been validated in the scientific literature to be effective.

I will also elaborate on some aggressive **prescription drug** strategies to consider in the event that you contract a severe form of swine flu or other type of influenza. > >

Don't Wait for Full-Blown Illness to Manifest

People often wait until they are very sick before seeking influenza treatment. This delay can preclude rapid eradication of the infectious agent. In some cases, treatment delay can be lethal.

I have found enormous personal benefit by taking aggressive actions upon the onset of the very first cold-flu symptom. I respond to a mild symptom the way some people do after they have suffered days of agonizing flu virus miseries. My strategy is to not let the virus gain a foothold in my cells. Up until now, my approach has apparently succeeded inasmuch as I have not suffered more than a day of significant cold-flu illness since **January 1983**.

I am going to reveal my personal program in the following paragraphs, but the key point I want to emphasize is to immediately address the very first symptom of a cold-flu viral infection like it is the most lethal agent you have ever encountered. I analogize this approach to dropping a nuclear bomb when conventional weapons might be adequate. While some people wait until full-blown viral symptoms manifest, I don't have a choice. Life Extension® is a 24-hour/day operation with no room for down time. I don't have the luxury of calling in sick just because a virus has invaded my body.

If you were to contract swine flu (H1N1) or other influenza types, it is especially critical that you immediately initiate the antiviral *drug therapies* I will discuss later in this letter. Antiviral drugs can be effective, but only when they are initiated within 24-48 hours of the manifestation of symptoms.

Unleashing the Nuclear Bomb

I typically work an intense schedule with frequent exposure to sick people, yet I have gone **27 years** without suffering a serious cold-flu viral infection.

While it would be convenient to credit the supplements I take every day, the fact is that I follow an aggressive protocol as soon as I feel that a viral infection may be taking hold. Scientific studies substantiate the individual components of what I do, but there have been no clinical trials to support the use of this entire protocol. I'll discuss some of the research that supports my rationale later, but here are the *drugs, nutrients, and hormones* I take as soon as the first symptom of common cold or flu manifests:

1. CIMETIDINE in the dose of 800 mg (and higher) each day. This drug is sold over-the-counter in pharmacies to combat heartburn, but its beneficial

side effect is to boost immune function by reducing T-suppressor cells, thereby keeping the immune system in a hyperactive state.² While sold over-the-counter, it would still be wise to read the package insert in case this drug is contraindicated for you. For most people, cimetidine provides a powerful immune system stimulation that is particularly effective against certain viruses.

2. HIGH-ALLICIN GARLIC in the dose of 9,000 mg once or twice a day. This potent form of garlic will cause painful stomach-esophageal burning if you don't eat food right afterward. The intake of 9,000 mg of this kind of garlic will cause you to reek of a strong sulfur odor, but saturating the body with this pungent garlic is the objective. Garlic has shown direct virus-killing effects in a number of published studies.^{3,4}

3. DHEA in the dose of 200-400 mg early in the day. This is much higher than normal,⁵ but DHEA has shown some unique benefits in boosting one's ability to mount a stronger immune response and also protecting against dangerous inflammatory cytokine responses that sometimes occur in response to viral infections.

4. LACTOFERRIN in the dose of 1,200 mg a day. This natural constituent of mothers' milk boosts natural killer cell activity and can kill certain viruses.⁶

5. ZINC LOZENGES in the dose of two 24 mg lozenges every two waking hours. Please be aware that this is a very high dose of zinc and is considered toxic if taken over the long term.^{7,8} You should **only** do this for a few days. Zinc has shown a direct effect of inhibiting the ability of cold viruses to latch onto your cells.⁶

6. MELATONIN at bedtime in the high dose of 10-50 mg (ordinarily, melatonin is taken at levels of just 1-3 mg per evening). Melatonin induces a powerful immune response and this high dose can facilitate the deep sleep one often needs to fend off an infection. This dose of melatonin will make you extremely tired, so please only take this before bedtime and do not operate any machinery or vehicles after ingestion.⁹

7. AGED GARLIC EXTRACT in the dose of 3,600 mg a day. There are unique immune-boosting compounds in aged garlic that work differently than those found in high-allylicin garlic.¹⁰

It is important to note that I take the above doses in addition to the supplements I use every day. My

personal program closely resembles the **Top Ten** most important *nutrients, hormones and drugs* Life Extension® recommends to its members plus 5,000 IU of **vitamin D3** each day.¹¹ (Refer to www.lef.org/vitamins-supplements/Top10 for the current Top Ten list.)

Garlic's Unsung Benefits

With all the high-tech advances occurring in medicine, garlic would appear to be a relic of the past. Yet the scientific literature documents that garlic has powerful effects against certain viruses.

For instance, a study tested one capsule daily of an allicin-containing **garlic** supplement from November thru February on a group of 146 volunteers.¹² Half the group received the garlic while the unfortunate other half got a placebo. The garlic group suffered **63% fewer** common cold infections compared to the placebo group. Even more significant, those in the garlic group who did catch a cold suffered symptoms for an average of only **1.52 days** compared to **5.01 days** for the placebo group. This placebo-controlled study corroborates the benefits I have personally derived by taking much higher doses of high-allicin garlic as soon as cold symptoms are present.

The conclusion of the doctors who conducted this garlic study was, "**An allicin-containing supplement can prevent attack by the common cold virus.**" Considering the number of people afflicted with a common cold each year, you would think this would have been the lead news story of the day. Instead, this study remains buried in a scientific journal, while the medical establishment still states "**there is no cure for the common cold.**"

Ribavirin is a prescription drug that has potent antiviral effects.¹³⁻²⁶ Yet a Chinese study showed that at least in the test tube, *garlic* is more effective than *ribavirin* in inhibiting viruses that attack the intestinal track.²⁷ Life Extension® has recommended *ribavirin* to treat various viral infections since year **1983**, but in this particular study, **garlic** was shown to be superior.

A number of published studies indicate that both high-allicin garlic and aged garlic support healthy immune function while exerting antiviral effects.²⁸⁻³⁴ Low-cost garlic may be nature's most powerful weapon against certain viruses.

Cimetidine's Life-Saving Side Effect

A little-known side effect of the heartburn drug *cimetidine* is that it inhibits the production of **T-suppressor cells**.² In doing so, it boosts immune function by preventing the immune system from turning itself down.



What You Need to Know

How to Combat H1N1 Swine Flu

- During the winter months, the risk of contracting a cold or flu increases.
- With the threat of a swine flu pandemic, people are more concerned than ever about how to protect themselves and their families.
- Many nutrients and drugs can help prevent viral infections and hasten their resolution when they do occur.
- Nutraceuticals that may protect against flu include vitamin D, garlic (both aged and non-aged forms), dehydroepiandrosterone (DHEA), lactoferrin, zinc lozenges, and melatonin.
- Pharmaceuticals that can help combat flu include cimetidine, Tamiflu®, Relenza®, ribavirin, and amantadine.
- Individuals who suspect they may have the flu should take action as soon as possible to fight the viral infection. Antiviral medications are typically only effective if initiated within the first 24-48 hours of the onset of symptoms.



Cimetidine has shown other immune-modulating effects such as increasing natural killer cell activity and boosting levels of natural immune stimulants *interleukin-2* and *gamma interferon*.³⁵⁻³⁸ Human studies demonstrate cimetidine's efficacy against herpes and viral warts.^{35,39-42}

Since cimetidine is safe for most people,⁴³ taking 800-1,000 mg at night (or 200 mg three times a day and then 400 mg at night) seems like an effective way to temporarily turn up the immune system. Cimetidine in 200 mg tablets can be purchased over the counter at pharmacies. The directions in the over-the-counter package insert say that up to 800 mg a day is safe, but some published studies where cimetidine is administered as an antiviral agent have used up to 1000 mg a day.⁴⁴

Mother's Milk

It is well known that infants obtain protection against certain infections from components contained in mother's milk. One such component is *lactoferrin*, which has well-documented immune-potentiating effects.⁴⁵⁻⁴⁷

Lactoferrin may stimulate macrophages, which in turn may help to induce cell-mediated immunity.⁴⁸

Although many of the studies are on animals, lactoferrin is naturally present in many mucous membrane secretions in the human, suggesting an innate human antimicrobial function.^{6,49}

A study showed that lactoferrin inhibits viral infection by interfering with the ability of certain viruses to bind to cell receptor sites.⁴⁶

Immune-Boosting Hormones

Dehydroepiandrosterone (DHEA) and its metabolites have demonstrated powerful immune-enhancing and antiviral effects.⁵⁰⁻⁵⁴ The administration of 50 mg a day of DHEA to elderly men resulted in the following immune enhancements compared to placebo:⁵⁵

- Increase of **35%** in the number of monocyte immune cells
- Increase of **29%** in the number of B immune cells
- Increase of **62%** in B-cell activity
- Increase of **40%** in T-cell activity
- Increase of **50%** in interleukin-2
- Increase of **22% to 37%** in natural killer cell number
- Increase of **45%** in natural killer cell activity.

One reason that influenza can be so lethal to aging people is that their immune systems are weakened. A deficiency in DHEA appears to be partially responsible for the age-related decline in immune function.⁵⁶ One study showed that a metabolite of DHEA augmented activation of T-helper cells and protected mice from a lethal influenza virus infection.⁵⁴

Melatonin has broad spectrum immune-enhancing effects and has been specifically shown to decrease viral load and prevent death in mice infected with certain viruses. The conclusion of one melatonin study was:

"The immunomodulatory, antioxidant, and neuroprotective effects of melatonin suggest that this indole must be considered as an additional therapeutic alternative to fight viral diseases."⁵⁷

Another study examined the immune function benefits of melatonin and found that melatonin activated interleukin-2 and gamma interferon, the body's natural hormone-like agents that facilitate T-helper cell production.⁵⁸

Taking high-dose **DHEA** in the morning (200-400 mg) and high-dose **melatonin** (10-50 mg) before bedtime would appear to be logical approaches to follow when battling a viral infection.

Preventing Cold Viruses From Lodging in Your Body

A number of published studies show that if zinc lozenges are taken within 24 hours of the onset of common cold symptoms, the severity and duration of cold miseries are significantly diminished.⁵⁹⁻⁶²

Rhinoviruses are the medical term to define viruses that typically cause the common cold. Rhinoviruses attach to cell receptor sites in sinus and throat tissues, become lodged in nose-throat cells, and then replicate out of control.⁶³ By binding to the same cell receptor sites as do cold viruses, zinc inhibits the ability of rhinoviruses to take hold in the body.

A meta-analysis of all the published literature on zinc lozenges was conducted in 2004 and the conclusion of the report was:

“Clinical trial data support the value of zinc in reducing the duration and severity of symptoms of the common cold when administered within 24 hours of the onset of common cold symptoms. Additional clinical and laboratory evaluations are warranted to further define the role of ionic zinc for the prevention and treatment of the common cold and to elucidate the biochemical mechanisms through which zinc exerts its symptom-relieving effects.”⁵⁹

The key here is to suck on two 24-mg zinc lozenges at the very first symptom of a cold and continue doing this every two waking hours. Once rhinoviruses bind to their receptor sites in the nasal tissues and begin replicating, zinc lozenges lose their efficacy. Considering how inexpensive zinc lozenges are, it makes sense to keep them in the medicine cabinet so that they are immediately available if cold symptoms manifest.

One caveat to remember is that chronic use of zinc in doses over 300 mg a day may suppress immune function.⁶⁴ If one were to suck on two zinc lozenges every two hours over the course of a day, the amount of total zinc intake can easily exceed 300 mg/day. This does not appear to be a problem in the short term, but if you start taking zinc lozenges and your cold miseries do not subside, you would be better off ceasing it after a few days. Remember that less than 100 mg a day of zinc can improve immune function, whereas long-term use above 300 mg a day concerns some doctors.

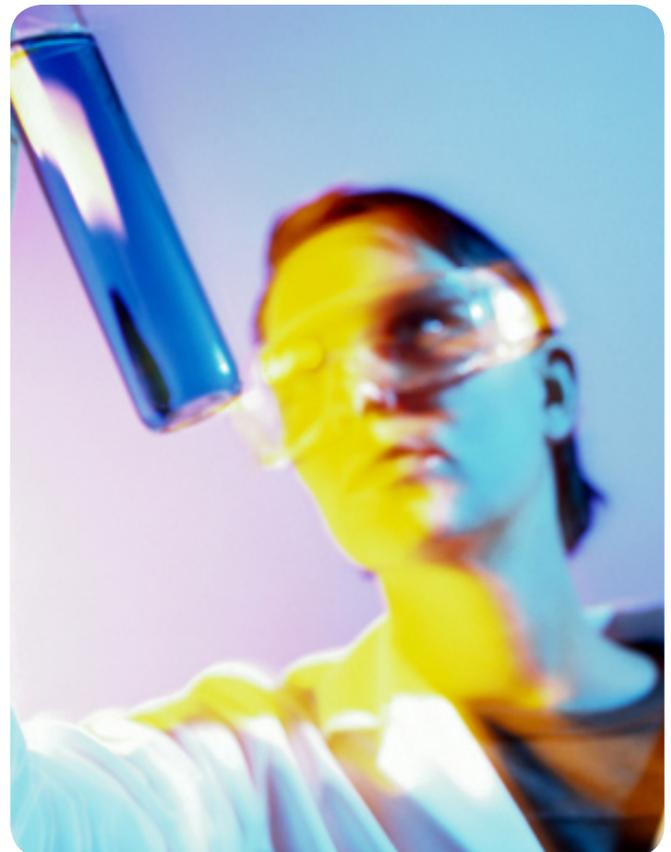
Dealing With Lethal Influenza Infections

Be it the swine flu or a typical influenza virus, one should not take any flu virus infection lightly.

Way back in 2003, Life Extension® advised its members to take the prescription antiviral drug **Tamiflu®** if flu symptoms developed. A complete description of Tamiflu® can be found in the *Influenza* chapter of the *Disease Prevention and Treatment* (Life Extension Media, 2003) book or it can be accessed online at www.lef.org/flu.

Tamiflu® may be especially effective when initiated within 24-48 hours of contracting influenza or swine flu virus. Government health agencies stocked up on Tamiflu® a few years ago and rationed it when the *avian flu* raised concern. There is no longer a shortage and it should be available in most pharmacies as long as you have a prescription. Another antiviral drug called **Relenza®** may also be considered if you contract severe flu symptoms.

Ribavirin is a broad-spectrum antiviral drug. Life Extension® discovered its unique benefits in 1983 by giving it to cats that contracted feline leukemia, a viral disease. Ribavirin proved highly effective in curing feline leukemia in our limited use of it, yet no studies have been published to validate our serendipitous finding. Since 1983, Life Extension® scientists have personally taken ribavirin when flu symptoms occur, and it has proven highly effective on an anecdotal basis.



Tamiflu® is safer than ribavirin, and ribavirin should only be considered in cases of severe viral infection that do not respond to conventional therapies.

The Life Extension Foundation® waged a multi-decade war against the FDA to get ribavirin approved in the United States. The FDA finally capitulated and approved ribavirin as an adjuvant treatment for hepatitis C.

A concern with using ribavirin is that it has been shown to cause anemia in some people.⁶⁵ This always puzzled us at Life Extension®, since we were not hearing of our members encountering an anemia problem in response to ribavirin. A recent study may have solved the mystery as to why our members did not suffer ribavirin-induced anemia. It turns out that ribavirin induces anemia at least partially by causing excess free radical damage to red blood cells.⁶⁶ Since Life Extension® members typically take loads of antioxidants, they were unwittingly protecting themselves against ribavirin/free radical-induced anemia.

Whether ribavirin has efficacy against swine flu is unknown at this time, though ribavirin's mechanism of action against common influenza viruses indicates it might produce additive benefits to either *Tamiflu*® or *Relenza*®. If you are severely stricken with influenza that is not responsive to any other treatment, ask your doctor to consider prescribing 400 mg of ribavirin to be taken three times a day until viral symptoms subside.

Vitamin D Boosts Immune Function and Suppresses Inflammation

Flu viruses (including swine flu) can induce a massive inflammatory response that can kill the victim in rare cases. In many cases, it is not the virus that kills, but the body's *hyper-reaction* to the virus—in the form of uncontrolled over-production of *pro-inflammatory cytokines*. Vitamin D downregulates the expression of pro-inflammatory cytokines such as *tumor necrosis factor-alpha*.⁶⁷

By downregulating excess *pro-inflammatory cytokine* production, **vitamin D** could save the lives of those stricken with acute flu viruses. Some other cytokine-suppressing agents include *fish oil*,⁶⁸⁻⁸⁵ *green tea*,⁸⁵⁻⁹¹ *borage oil*,⁹²⁻⁹⁴ *curcumin*,⁹⁵⁻¹⁰⁷ and *flavonoids*.¹⁰⁸⁻¹¹⁷

Severe swine flu infection sometimes causes dangerous *Staphylococcus* bacterial infections to occur in the lungs.¹¹⁸ In addition to the proper antibiotics, **vitamin D** may also help combat concomitant staph infections. Here's how:



Curcumin.

Antimicrobial peptides are components of the immune system that protect against bacterial, fungal, and viral infections. Secreted by immune cells throughout the body, **antimicrobial peptides** damage the *outer lipid membrane* of infectious agents (including influenza viruses), rendering them vulnerable to eradication.

Vitamin D upregulates the expression of these **antimicrobial peptides** in immune cells,¹¹⁹ providing a definitive *biological mechanism* to explain why vitamin D confers such dramatic protection against common winter illnesses. Those who contract concomitant bacterial infections with swine flu should also be prescribed antibiotic drugs.

Symptoms of Swine Flu

According to the Centers for Disease Control (CDC), symptoms of swine flu infections, like seasonal flu infections, can include:¹²⁰

- fever, which is usually high, but unlike seasonal flu, is sometimes absent
- cough
- runny nose or stuffy nose
- sore throat
- body aches
- headache
- chills
- fatigue or tiredness, which can be extreme
- diarrhea and vomiting, but more commonly seen than with seasonal flu

For most people, swine flu symptoms will abate within a few days and not cause a serious problem. A tiny minority of victims, however, develop life-threatening pulmonary infections that require ICU hospital care. (Pregnant women are at increased risk of complications from flu; pregnant women with suspected or confirmed H1N1 influenza infection warrant close observation, according to the World Health Organization.)

Here are the **warning signs** that should signal to anyone with swine flu to seek medical care urgently.¹²⁰

In children:

- Fast breathing or trouble breathing
- Bluish skin color
- Not drinking enough fluids
- Not waking up or not interacting
- Being so irritable that the child does not want to be held
- Flu-like symptoms improve but then return with fever and worse cough
- Fever with a rash

In adults:

- Difficulty breathing or shortness of breath
- Pain or pressure in the chest or abdomen
- Sudden dizziness
- Confusion
- Severe or persistent vomiting

Quadruple Antiviral Drug Therapy

If one develops common influenza or the swine flu, it would make sense to immediately initiate *Tamiflu*[®] (oseltamivir) antiviral drug therapy in the normal dose of 75 mg twice a day (for five continuous days). In treating severe swine flu infections, ask your doctor to consider prescribing as high as double the recommended dose of *Tamiflu*[®], which would be 150 mg twice a day, and to do this for five continuous days.

Life Extension[®] members were informed about *Tamiflu*[®] in June 2003. Now that the media has made H1N1 (swine) flu headline news stories, *Tamiflu*[®] has become a household word. In reaction to the avian flu scare in 2005, there was a shortage of *Tamiflu*[®]. We reminded members back then that another antiviral drug called *Relenza*[®] (zanamivir) is available and may have certain advantages over *Tamiflu*[®].

Relenza[®] functions by the same antiviral mechanism as *Tamiflu*[®]. The advantage of *Relenza*[®] is that it is administered as an inhalant and delivered directly into the lungs. Since the H1N1 (swine) virus inflicts its lethal effects primarily in the lungs, *Relenza*[®] might

be more effective than *Tamiflu*[®] in combating H1N1-induced pneumonia.

The problem with using only *Relenza*[®] is that swine flu rapidly can progress to a systemic illness. While *Relenza*[®] does exert some systemic effects, it might be best suited to eradicate swine flu viral replication in the lungs. Thus, one would still want the additional systemic antiviral benefits of *Tamiflu*[®].

Relenza[®] and *Tamiflu*[®] interfere with viral infections by blocking the active site of the influenza viral enzyme called *neuraminidase*. Drugs that inhibit *neuraminidase* cause influenza viruses to aggregate at the body's cell surface and reduce the number of viruses released from infected cells. Since *Relenza*[®] and *Tamiflu*[®] are both *neuraminidase inhibitors*, doctors often believe that a person should only take one of these drugs (i.e., *Relenza*[®] or *Tamiflu*[®]) when treating swine or other influenza viral infections.

Those seriously infected with swine flu may ask their doctors to consider 75 mg twice a day of oral *Tamiflu*[®], along with the inhaled dose of 5 mg of *Relenza*[®] twice a day. *Relenza*[®] and *Tamiflu*[®] have both been used at higher doses without apparent toxicity.

As with most currently available antiviral drugs, treatment with *Relenza*[®] or *Tamiflu*[®] should start in the first 48 hours after the onset of symptoms. (Refer to the attached addendum before initiating *Relenza*[®] therapy.)

The drug *ribavirin* inhibits viruses via mechanisms that are different than those of *Tamiflu*[®] and *Relenza*[®].



One of these mechanisms is to disrupt viral RNA synthesis, causing viruses to self-destruct. Ribavirin is available as a 200 mg oral capsule and in inhalant form. If one contracts a severe case of swine flu, it would appear logical to ingest 800-1,200 mg a day of ribavirin in oral capsule form, in addition to Tamiflu® and/or Relenza®.

If you are in a hospital setting, it might be appropriate to find a lung specialist (pulmonologist) who will *consider* prescribing and then administering ribavirin in an aerosolized liquid spray via a nebulizer. By inhaling ribavirin, it may be possible to adequately inhibit viral replication in the lungs. You may need to find a cooperative pediatrician to arrange this because *aerosolized ribavirin* is only approved to treat infants and small children with severe forms of pneumonia. Your doctor will have to calculate a higher dose of aerosolized ribavirin based on your weight and clinical condition.

I use the term “consider” when asking a doctor to prescribe aerosolized ribavirin since there are no studies in which inhaled Relenza® and aerosolized inhaled ribavirin have been used together. There is always a possibility of adverse interactions between these two inhaled drugs. On the flip side, if you are stricken with a severe case of swine flu, your doctor should be more willing to consider unproven therapies that have a logical basis of efficacy.

Amantadine is a drug approved by the FDA to treat influenza A. This drug functions by inhibiting the activity of the *M2 protein* in a way that precludes the influenza virus from replicating once it is inside a cell. As with other antiviral drugs, treatment should be initiated within 48 hours. When amantadine is administered later in the course of a viral infection, it is virtually useless as the body is already overwhelmed with viral particles.

Amantadine was extensively given to chickens over the past decades to treat avian flu. Chickens have since developed a resistance to this drug. That does not mean, however, that amantadine might not be effective in a human who contracted the swine or other forms of influenza. Since amantadine works via mechanisms that are different than Tamiflu®/Relenza® and ribavirin, it might be logical to add 100 mg a twice a day of *amantadine* in addition to *ribavirin* and *Relenza®* and *Tamiflu®*. (If you are over age 65, the recommended dose of amantadine is 100 mg a day or less.)

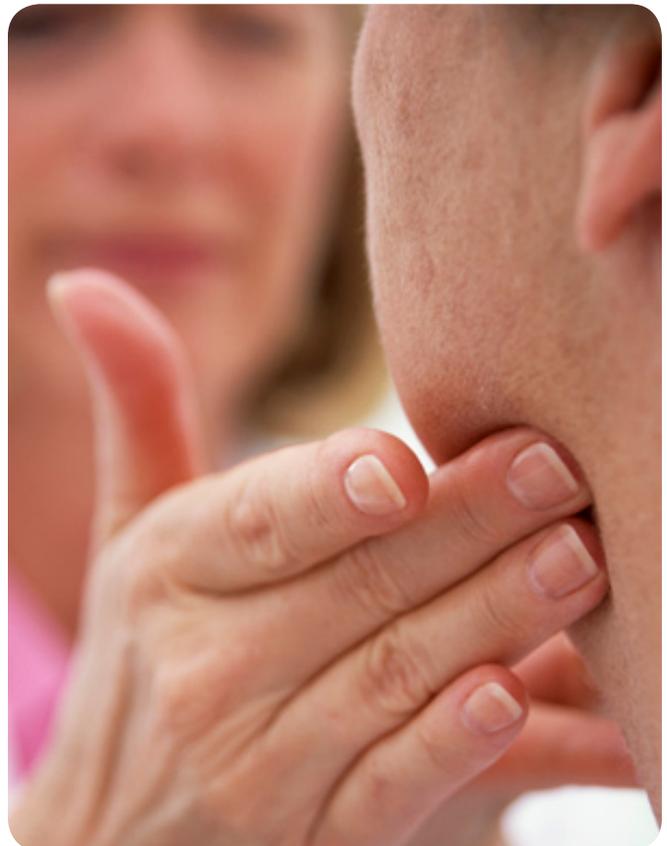
One concern with amantadine is that influenza viruses often develop rapid resistance to amantadine. In a swine influenza pandemic, amantadine might rapidly become ineffective. That does not mean, however, that those who contracted the first human transmitted cases of swine flu might not benefit from amantadine.

Obtaining Physician Cooperation

My fear is that as the current swine flu pandemic progresses, people will needlessly die because of physician ignorance. I know that persuading your physician to prescribe quadruple antiviral drug therapy, in the event severe influenza manifests, will be a challenge.

Amantadine is considered worthless by most doctors because they have seen it fail most of the time. As I stated earlier, antiviral drug therapy should be initiated within **48 hours** of the symptoms manifesting. Doctors are used to seeing patients only after they have suffered with flu symptoms for many days after the onset of symptoms. When doctors prescribe amantadine to these advanced influenza patients, it usually fails, just like Tamiflu® will fail if it is not quickly prescribed. Few doctors have any experience with either oral or inhaled ribavirin and will therefore be reluctant to prescribe it.

My objective is to not allow any member of the **Life Extension Foundation®** to succumb to influenza because of physician inflexibility. If you are a Life Extension® member and contract severe influenza, please call us so that one of our doctors can attempt to persuade your physician to implement the aggressive treatments described in this article.



Keeping You Informed

The *US Centers for Disease Control & Prevention* indicate that anywhere from 5% to 20% of the U.S. population contracts influenza each year, an average of about 36,000 people per year in the United States die from influenza, and more than 200,000 will be admitted to the hospital as a result of influenza.¹²¹

I have written this article based on numerous inquiries made by Foundation members. There are additional strategies that may be considered to combat common cold-flu infections, but I wanted to convey what I do personally when confronted with a virus.

The fact that the recommendations made at the beginning of this article have worked for me does not mean they will work for you. There is a scientific rationale, however, to using cimetidine, garlic, and other readily available and inexpensive agents when confronted with a viral illness. The FDA, of course, does not approve any of these approaches.

If one contracts an influenza virus, the immediate initiation of aggressive antiviral (and anti-cytokine) therapies is paramount. Whether or not you actually contract swine flu, it makes sense to initiate aggressive actions if you contract flu-like symptoms. Early treatment of common cold or typical flu viruses can result in rapid eradication of the virus from your body.

As a Life Extension® member, please be assured that we are committed to providing you and your doctor with scientifically backed information to most logically combat influenza viruses.

Caution: If you are taking any medications or have serious health problems, you must first consult with your own health care professional before following this strategy. Those with certain hormone-sensitive cancers, for example, may not want to take DHEA. This article is for informational purposes only and not intended as a substitute for advice from your physician or other health care professional. There are side effects to all of the drugs discussed in this letter, making it crucial that you have a knowledgeable health professional overseeing your treatment. ●

ANTIVIRAL DRUG ADDENDUM

The FDA approved Relenza® (zanamivir)¹²³ is an antiviral drug for persons aged seven years and older for the treatment of uncomplicated influenza virus. This product is approved to treat type A and B influenza, the two types most responsible for flu epidemics. Clinical studies show that for the drug to be effective, patients needed to start treatment within two days of

the onset of symptoms. The drug seemed to be less effective in patients whose symptoms weren't severe or didn't include a fever. Relenza® is a powder (5 mg) that is inhaled twice a day for five days from a breath-activated plastic device called a Diskhaler®. Patients should get instruction from a healthcare practitioner in the proper use of the Diskhaler®, including a demonstration when possible. Relenza® has not been shown to be effective, and may carry risk, in patients with severe asthma or a lung condition called chronic obstructive pulmonary disease. Some patients with mild or moderate asthma experienced bronchospasm (marked by shortness of breath) after using Relenza®. When treating influenza, a seven-day course of Relenza® may be considered.

Some patients have had bronchospasm (wheezing) or serious breathing problems when they used Relenza®. Many but not all of these patients had previous asthma or chronic obstructive pulmonary disease. Relenza® has not been shown to shorten the duration of influenza in people with these diseases. Because of the risk of side effects and because it has not been shown to help them, Relenza® is not generally recommended for people with chronic respiratory disease. Anyone who develops bronchospasm-worsening respiratory symptoms such as wheezing and shortness of breath should stop taking the drug and call their healthcare provider. Patients with underlying respiratory disease should have a fast-acting inhaled bronchodilator available when taking Relenza®.

Ribavirin is "probably a teratogen," so women even remotely likely to become pregnant should be very careful when using it.

Ribavirin stays in the body up to six months after a course (it builds up in red cells and doesn't leave the body until all of them have been replaced), so women should be aware that its reproductive dangers will last that long as well.

There are warnings about all the drugs mentioned in this article that should be reviewed before any individual considers using them.

If you have any questions on the scientific content of this article, please call a Life Extension® Health Advisor at 1-866-864-3027.



FDA WARNS ABOUT FRAUDULENT H1N1 SUPPLEMENTS

Public fear about the H1N1 swine flu virus has resulted in unscrupulous companies offering products that lack rigorous study to document efficacy against H1N1 infections. Everything described in this article is substantiated in the peer-reviewed scientific literature for probable antiviral efficacy. Nothing described in this article is proprietary to Life Extension®, meaning you can obtain everything suggested in this article in health food stores and/or pharmacies. Here is the FDA's latest consumer warning:

FDA NEWS RELEASE For Immediate Release: Oct. 19, 2009

FDA, FTC ISSUE JOINT WARNING LETTER TO WEB SITE OFFERING FRAUDULENT H1N1 FLU SUPPLEMENTS¹²²

AGENCIES CONTINUE EFFORT TO PROTECT PUBLIC HEALTH FROM ILLEGAL WEB ACTIVITY

On October 15, 2009, the US Food and Drug Administration (FDA) and the Federal Trade Commission (FTC) issued a joint warning letter to a Web site marketing fraudulent supplements that claim to help prevent the spread of the 2009 H1N1 influenza virus.

The warning letter, the first to be issued jointly by the agencies, advises the owners of the site that they must discontinue the fraudulent marketing of their product or face legal action. The letter further advises the owners of the site that they have 48 hours to give the agencies a plan to discontinue their fraudulent marketing.

The FDA and the FTC remind consumers to be cautious of promotions or Internet sites offering products for sale that claim to diagnose, prevent, mitigate, treat or cure the 2009 H1N1 influenza virus. Fraudulent H1N1 influenza products come in many varieties, including dietary supplements, as well as products purporting to be drugs, medical devices or vaccines. Since May 2009, the FDA has warned more than 75 Web sites to stop the sale of more than 135 products with fraudulent H1N1 influenza virus claims.

"Products that are offered for sale with claims to diagnose, prevent, mitigate, treat or cure the 2009 H1N1 influenza virus must be carefully evaluated," said Commissioner of Food and Drugs Margaret A. Hamburg, MD. "Unless these products are proven to be safe and effective for the claims that are made, it is not known whether they will prevent the transmission of the virus or offer effective remedies against infection. Furthermore, they can make matters worse by providing consumers with a false sense of protection."

The FDA and the FTC also warn consumers to take extreme care when buying products over the Internet that claim to diagnose, prevent, treat or cure the H1N1 influenza virus because, in addition to being fraudulent, they could be dangerous.

In collaboration with the FTC, the FDA will continue to work aggressively to identify, investigate and take regulatory action against individuals or businesses that wrongfully promote purported 2009 H1N1 influenza products.

This will include taking joint action, when appropriate, such as the issuance of last Thursday's warning letter. Additional legal action could include an injunction or issuance of an administrative order by the FTC or seizure of products, an injunction or criminal prosecution by the FDA.

"The FDA continues to consider the sale and promotion of fraudulent H1N1 influenza products to be a possible threat to the public health and in violation of the Federal Food Drug and Cosmetic Act," said Michael Chappell, acting associate commissioner for regulatory affairs. "The FDA has an aggressive surveillance program to detect fraudulent H1N1-related products and will take prompt action to stop the marketing of fraudulent H1N1 influenza products and will hold those who are responsible for doing so accountable."

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