



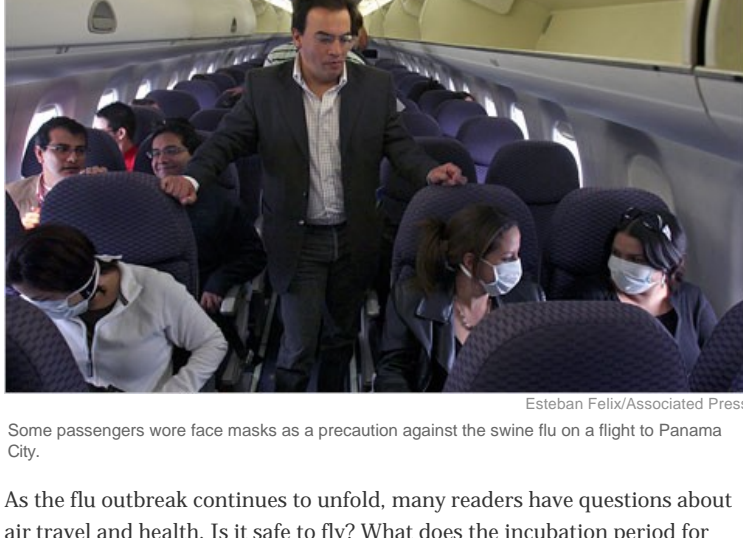
Consults

Experts on the Front Lines of Medicine

May 2, 2009, 6:00 AM

Flu Risk, Flying and Healthy Travel

By MARK GENDREAU, M.D.



Esteban Felix/Associated Press

Some passengers wore face masks as a precaution against the swine flu on a flight to Panama City.

As the flu outbreak continues to unfold, many readers have questions about air travel and health. Is it safe to fly? What does the incubation period for this flu mean in terms of travel? Will a former flu shot protect me while flying?

Dr. Mark Gendreau, senior staff physician and vice chair of emergency medicine at Lahey Clinic in Burlington, Mass., and assistant professor of emergency medicine at the Tufts School of Medicine in Boston, answers readers' questions about safe air travel in a time of flu.

See, too, Dr. Gendreau's earlier Q&A on safe air travel during a flu outbreak, "[Is It Safe to Fly During the Swine Flu Outbreak?](#)" as well as "[Readers' Questions: The Swine Flu Outbreak](#)" and "[More Readers' Questions About Swine Flu](#)." If you have additional questions or comments, please post them in the Comments box below.



Kazuhiro Nogi/AFP/Getty Images

Quarantine officers at Narita International Airport in Japan.

Q *Is it still safe to travel by air?*
A Yes, traveling by air remains safe. I would have no hesitation in flying or having one of my family members fly.

Air circulation patterns aboard standard commercial aircraft are side-to-side — a so-called laminar pattern — with air entering the cabin from the overhead, circulating across the aircraft in a circumferential manner and exiting the cabin near the floor. Studies published in 2004 confirmed that little to no front-to-back, or longitudinal, airflow takes place. This air circulation pattern compartmentalizes the airflow into sections within the cabin, thereby limiting the spread of airborne particles throughout the passenger cabin.

It is important to continue to practice good hand hygiene, so bring an alcohol-based hand sanitizer that has at least a 50 percent alcohol content.

Many individuals with health problems have been writing in asking if they are at increased risk. I recommend that people with weakened immune systems, including anyone who has recently had a prolonged hospitalization or is taking immunosuppressive medications — avoid nonessential air travel for the time being.

Individuals with stable preexisting medical conditions should do fine, but keep in mind that the changes in cabin pressure during routine commercial flight can exacerbate these conditions, and common sense dictates checking in with your doctor before making travel arrangements.

Q *Are my children at any greater risk of getting swine flu while traveling?*

A In general, younger children are more vulnerable to infections, but children seem to be faring well in this particular outbreak. Healthy children older than 2 years of age should have no greater risk than adults while traveling. However, good hand hygiene is very important. Newborns and infants may be at greater risk, so the prudent measure would be to postpone nonessential travel for them.

Q *I travel by air frequently for business, and I got the flu shot this season. Will that give me any protection against the swine flu?*

A It will not prevent you from getting the flu — but a growing body of scientific evidence suggests it may reduce your chances of getting gravely ill or dying. Keep in mind that annual flu vaccines specifically provide protection against the viral strains predicted to cause the flu during that year.

Receiving the vaccine causes your body's immune system to make neutralizing proteins called antibodies that are specifically targeted against that particular influenza strain — or closely related strains. This is why annual vaccination is necessary, because the influenza strains constantly change.

The good news is that annual influenza vaccination also appears to rev up special immune cells in your body that play a pivotal role in your body's immunity. This activity may reduce the ability of unrelated influenza viruses like swine flu to replicate.

Q *What's the incubation period for flu? Is the person contagious during that time?*

A The incubation period of an infection refers to the time when an individual initially becomes infected to the time they start showing symptoms like fevers, chills or fatigue. In general, the incubation period for flu is two days, with a range of one to four days. In the case of flu, individuals can become infectious one to two days before developing the typical symptoms of fever, chills, headache and malaise — yet they are still able to pass it along to others.

This symptom-free period is why airport screening is futile in the case of flu, since a good proportion of those screened can be contagious yet appear well. Although this sounds scary, the fact that we have not seen a huge spike in the number of cases despite the fact that we have seen the passing of perhaps five incubation periods in the past 10 days suggests that this flu strain may not be very efficiently transmitted between people.

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9 Comments

1. May 2, 2009 6:45 am [Link](#)
In my previous comments (May 30, 2009), I noted that the viral enzyme called sialidase or neuraminidase located on the surface of every type of the influenza virus is an important drug target for treatment using FDA approved oseltamivir (Tamiflu) and zanamivir (Relenza). The cellular structures the viral neuraminidase acts on are called sialoglycoproteins or sialoglycolipids. These complex molecules are present in different cell types and are found in all human populations. The degradation of these sialoglycoproteins with the release of sialic acid is the weakest link in the process of releasing influenza particle progenies to infect new cells. Tamiflu and zanamivir are effective because they attack the process of viral spread at this vulnerable step.

So what to do when virtually all humans are potentially at risk? Absent the development of effective vaccines for new and variant influenza viruses, where do we go from here? What is the strongest predictor of lowered risk of infection by any novel influenza virus? As in many areas of health the predictors are: (1) age, (2) income, (3) literacy skills, (4) employment, (5) educational level, and (6) ethnicity. My guest is that the strongest predictor is literacy. This solution is a special case that is instructive of general principles enunciated in JAMA 1999; 281: 552-557 and operationally formulated in a questionnaire (<http://www.pfizerhealthliteracy.com/physicians-providers/policy-quiz.html>).

It is precisely within this framework that I believe the need to facilitate translation of basic scientific knowledge into applications. For example, the influenza virus has a lipid envelop within which integral viral proteins (hemagglutinin, matrix protein and neuraminidase) are embedded. The viral particles are easily dissolved, i.e., zapped by detergent in water or suitable organic solvents. While soap, running water and scrubbing are legendary, the active principle has to do with the detergent (anionic and ionic) that literally dissolve the virus. This must not be construed as medical advice to apply these materials. However, some of the active detergents are found in toothpaste, shampoos and shaving creams. The contribution is derived from years of experience in learning how to take integral membrane proteins apart using detergents and studying the effects of neuraminidase on human red blood cells.

— James Dzandu, Ph.D.

2. May 2, 2009 12:05 pm [Link](#)
As a precaution, during a past year's outbreak of the seasonal flu, and where there was a shortage of vaccine, I was perscribed tamiflu. Is there an expiration? In other words, should I request a new perscription?
— Mick

3. May 2, 2009 1:32 pm [Link](#)
Correction: My previous comment was posted on April 30, 2009 and not on May 30, 2009. An Error such as this is similar to a specific mutation in the genes (viral RNA) for the three viral surface proteins. Mutations in the genetic material (RNA) which code for the hemagglutinin component of the influenza virus make it feasible for the same individual previously infected to be re-infected with the same viral type. Mutations in the neuraminidase gene (viral RNA) have not been shown to affect infectivity per se, but may affect viral replicative cycles which in turn influence clinical outcomes. In summary, it is less likely than not that influenza virus mutational events will nullify the pharmacological effects (efficacy) of current neuraminidase inhibitors.
— James Dzandu, Ph.D.

4. May 2, 2009 7:51 pm [Link](#)
Does it help to wear a face mask?
— Masked One

5. May 3, 2009 12:38 am [Link](#)
This discussion is really quite curious considering the fact that an average of 36,000 US residents a year die from normal garden variety flu right here in the good old USA. So far this represents far more deaths by huge margins than any of the recent predictive computer models worked up for this flu outbreak. Yes it makes sense to be cautious. Cleaning hands with 50% alcohol pads and wearing surgical grade face masks makes sense ALL THE TIME when traveling in flying hermetically sealed aluminum tubes that recirculate every breath exhaled by travelers. So, why is this flu drawing so much attention? The press is having a field day throwing gas on the fires of fear. Why fear? Fear sells advertising and in this climate of economic stress fear sells particularly well.
— John

6. May 3, 2009 10:22 am [Link](#)
I'm going to start using hand sanitizer as of my first trip on the subway today. As I'm not in any particular risk group, I'd probably be facing no worse than a week with the flu, but that's reason enough.
— Amy

7. May 4, 2009 9:02 am [Link](#)
" In the case of flu, individuals can become infectious one to two days before developing the typical symptoms of fever, chills, headache and malaise — yet they are still able to pass it along to others."
What does this mean?
— allan Rydberg

8. May 4, 2009 5:19 pm [Link](#)
What your aticle doesn't address is the various lines a traveler must stand in to complete their travel. For instance: security, customs and baggage pickup. I just returned from Vancouver BC and I easily spent over an hour waiting in line. The upshot: I also returned with flu like symptoms. It's not the airline circulation to worry about, but the waiting in line to get to and from the plane that will expose you.
— Twinpeaks

9. May 4, 2009 11:59 pm [Link](#)
Dzandu rebuts John's curiosity:
John noted and I quote "This discussion is really quite curious considering the fact that an average of 36,000 US residents a year die from normal garden variety flu right here in the good old USA. So far this represents far more deaths by huge margins than any of the recent predictive computer models worked up for this flu outbreak"
From a purely biological point of view, humans are designed to last 100 plus or minus 20 years. Any death that occurs below the lower limit of 80 years is an accident and therefore needless. The 1918 influenza flu has been reported to cause between 20 and 50 million deaths: mostly needless deaths. About 500,000 in the US alone died as a consequence of H1N1. Using innovative techniques the 1918 influenza virus has been resurrected and shown to be the H1N1 type: an exact replica of the current strain of influenza virus. Assuming that immunity due to exposure to H1N1 lasts for 80 years, it is easy to estimate the proportion of current US population that may have been exposed to H1N1 and therefore immune or at most at a nadir. Life expectancy has been so shortened in developing countries such that only marginal proportions of the population would still be alive since 1918. Therefore the majority of the populations in developing countries in Africa, Latin America, Asia and the Middle East would be most vulnerable to H1N1. It is a question of what may be gained versus what may be lost. In this case, I think we need to err if we must on the side of safety. H1N1 has killed 20 to 50 million before. Given similar circumstance, H1N1 is more likely than not to needlessly kill comparable numbers of humans. Do the math. The needless death of one person is one death too many. However 36,000 compared to 20-50 million potentially is a non-starter
— James Dzandu, Ph.D.

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"Recipes for Health" chef Martha Rose Shulman offers 12 foods she always keeps on hand.

April 27 (44 comments) **Readers' Questions: The Swine Flu**
Science reporter Pam Belluck answers readers' questions about swine flu.

Comments of the Moment

" I live in Mexico City and have at least two flights scheduled to/from the U.S. in the next two weeks... I'm planning to wear a face mask at the airports and on the flights, and carry hand sanitizer."

— Joy, la guerra
[Is It Safe to Fly During the Swine Flu Outbreak?](#)

" The real reason that it is safe to fly during an outbreak of the swine-flu epidemic is that pigs don't fly."

— Jack van Dijk
[Is It Safe to Fly During the Swine Flu Outbreak?](#)

" I don't get it. Why is pride and saving face most important? Why are we so quick to put up barriers to the world?"

— Wesley
[Questioning Pride](#)

" Americans are such suckers if they believe that a job is the only way to have pride."

— brm2000
[Questioning Pride](#)

Health News From The New York Times

Officials Note Youth of Serious Flu Cases

BY DONALD G. MICHEL, JR.
The median age of those hospitalized in the United States with the illness is 15, raising concern, the C.D.C.'s acting director said.

Cooking Up Millions of Viruses for a New Vaccine

BY DENISE GRADY
A lab in New York turns flu viruses into "seed stock" — a form of the virus that will grow rapidly in eggs that may ultimately permit the immunization of millions of people.

Fitness: Do Sports Creams Rub the Pain Away?

BY SARAH TOLAND
BY BARBARA HEY
Can you really rub away the pain using over-the-counter sports creams, or is it all in your head?

Skin Deep: Uneven Pigmentation: What Can Be Done?

BY BARBARA HEY
No matter the trigger, restoring a uniform hue to skin is no quick-and-easy task. But that doesn't keep cosmetics companies from trying.

New Effort Reopens a Medical Minefield

BY BARRY MEIER
The Obama administration's initiative to compare the effectiveness of medical treatments is drawing criticism from medical products companies, some doctors and others.

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