



Upper Respiratory Infections And the Civil Aviation Crew Member

Widespread, perennially recurring infections may cause health and safety hazards unless flight crews are familiar with how to deal with them.

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by

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Upper respiratory infections (URIs) are defined as those bacterial and viral afflictions that cause excessive secretions in the nose, fluid-filled sinuses, a throat that is scratchy and raw, tracheal and bronchial irritation and, along with all this, frequent coughing. A headache may often be present, as may be a fever and feelings of fatigue. The eyes may feel scratchy and tired. The middle ear may become affected with feelings of fullness, possible dizziness and some temporary loss of hearing acuity.

The above infections continuously afflict the population, and two to three times a year given air crew members may experience one or more of this complex of symptoms to a greater or lesser extent.

The Crew Member Has a Unique Problem

Because URIs cover the range from minor, with little consequence, to moderate, with occasionally distracting

symptoms, to major, with acute impairment, flight crew members should have some guidelines and knowledge relative to how to deal with these perennially recurring nuisances and potential health and safety hazards.

The simple directive, "consult your doctor" or "consult your flight surgeon" is appropriate if the doctor knows about aviation (and aviation medicine) and is available, or if the pilot has a flight surgeon who is available. Some doctors may be too busy when called or be inaccessible, precluding immediate advice when a URI strikes. If a physician who is not knowledgeable in aviation medicine, as can well be the case, for example, at some walk-in acute care centers or other general medical offices, a medication might be prescribed for a crew member that is hazardous to the performance of flight duties (more on this later).

It is important that airline management personnel be aware of the URI problems that will inevitably affect air crew members, and have an understanding of the topic in

general, plus the decisions that are necessary.

Current Medical Status Of URIs Is Reviewed

Viral URI. The common “cold” continues to escape modern science’s war on infections, and at present there are no antibiotics or effective vaccines available that will target the cold virus and take it out. Therefore, the body’s defenses must do the job. When one of these viruses proliferates in the body, the immune system reacts and antibodies to the virus are produced. Ultimately, the virus is vanquished. However, virus particles will very likely have been transmitted to other persons through nasal droplets by sneezing, or, so it is currently thought, by touching. The recipient of the particles may or may not become infected, depending upon whether or not the virus can find a “home” in the recipient’s respiratory mucous tissue.

Bacterial URI. Upper respiratory bacterial infections may mimic the symptoms of the common cold, but bacterial URIs more often have an accompanying fever. These infections may be added to a viral upper respiratory infection and produce a more prolonged illness. Bacterial infections may linger in the adenoids and tonsils, if they have not been removed, and certain bacteria may exude a toxin during this time that can injure the heart and kidneys as well as other organs. This type of infection was a common cause of rheumatic fever as well as the glomerular nephritis cases which were very common in the pre-antibiotic era. Fortunately, bacterial URIs can in virtually all cases be eradicated by treatment with one or another antibiotic.

Other Infectious Agents. It seems that with passage of time, more and more infectious agents are found that produce upper respiratory infections. Some of these respond to antibiotics and some do not. In the healthy person, almost of all of these are eliminated fairly quickly by the body’s immune system.

Allergic URI. The variety of particulate materials that populate the atmosphere both indoors and outdoors challenges the upper respiratory tissues during the body’s activated removal process in regard to deposited particles. In some persons, certain of these particles trigger a response that is defined as an “allergic” response. Mucous is secreted to excess, sneezing results, sinuses may fill with fluid and the victim of the allergy may feel irritable and tired, and commonly experiences difficulties in sleeping. Headaches may occur. These are the symptoms that may be suppressed by certain medications, including the anti-

histamines and cortisone-like substances.

Some Specific URIs. The influenza viruses fall into three categories: A, B and C. From year to year, one or another of these categories will predominate in epidemics in various locations (the C category is not common. A is the most common, B the next). The influenza virus has the ability to mutate, and, therefore, a vaccine prepared from the viruses that inflicted a previous year’s epidemic may not be fully effective for a current year’s epidemic. The virus will likely have changed and not be susceptible to the new vaccine. Conversely, the new vaccine may be somewhat effective, but the degree to which it will be effective during developing epidemic cannot be forecast.

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Infectious mononucleosis is a viral affliction that it is common in young individuals and young adults. It causes a sore throat, fever, fatigue and may exist for weeks at a low level of symptoms, including generalized fatigue.

Streptococcal disease causes throat inflammation and tenderness and may persist for weeks or months or even years through repeated infections and flare-ups. Penicillin and erythromycin usually are effective in treatment.

Hemophilus influenza infections are results of the causative bacteria moving in upon an influenza infection, and these bacteria may progress on to pneumonia.

A number of organisms have been identified that cause acute URIs. These include rhino-viruses, corona-viruses (due to the appearance of the virus particle under electronmicroscopy, demonstrating a little “corona”), adenoviruses, ECHO-viruses, parainfluenza viruses, and micoplasma organisms. The micoplasma organisms cause primary typical pneumonia and can be treated with erythromycin and tetracycline.

It is not necessary for the laymen to know about each of these various organisms but it is useful for general knowledge that an ever-increasing number of causative agents for URIs is being discovered through medical research. Within this number there are agents that are susceptible to specific antibiotic treatment. Only through consulting a physician can the likely causative agent be identified when a persistent URI occurs and appropriate treatment achieved.

The Crew Member Has to Make Decisions

Because URIs can range from essentially inconsequential and brief annoyances to severe and incapacitating

illnesses, the individual crew member must decide what steps to take as a URI develops. For example, under U.S. Federal Aviation Regulation (FAR) Part 61.53, all civilian crew members have the obligation to ground themselves should illness occur that would interfere with performing their duties safely. The regulation wording was crafted by lawyers with the assistance of U.S. Federal Aviation Administration (FAA) physicians more than three decades ago, and reads as follows: "No person may act as pilot in command, or in any other capacity as a required crew pilot flight crew member while he has a known medical deficiency, or increase of a known medical deficiency, that would make him unable to meet the requirements for his current medical certificate." Only the pilot knows the subjective symptoms of his or her developing illness, and, therefore, the decision concerning what action to initiate rests with the pilot in this case. It is often impractical for reasons of circumstance, physician availability, time of onset and other reasons, for all pilots to always consult a physician with every beginning URI. A degree of informed opinion is therefore necessary.

If the subjective sensations and symptoms accompanying the developing URI are severe enough to impair judgment in the crew member's view, he should not fly an aircraft. If the condition does not begin to resolve itself within two or three days, consultation with a physician should be accomplished. The crewmember should be alert to the possibility that the URI initiated by one type of infectious organism may be followed by another organism, which could prolong the infectious process. There are extreme cases on rare occasions where a URI progresses to pneumonia (e.g. "walking pneumonia") or to an infection somewhere else in the body. This can include meningitis. These are very serious complications that can proceed to death.

Medications Require Proper Application

For the victim of an upper respiratory infection, there are two broad categories of medication. The first category consists of those medicines that relieve symptoms; the second contains those that strike at the causative agent. Within the first category are medicines that can be bought by crew members "over-the-counter," without a prescription. Other medicines in this category are only available in the United States, for example, through a physician's prescription by virtue of the regulations of the U.S. Food and Drug Administration (FDA). Many prescription-only medications can be purchased in various other countries over-the-counter. Crew members should avoid using what

would be prescription medications in their respective countries, but which are available from an over-the-counter or other source in another country.

Over-the-counter Medications Require Careful Consideration

The mildest over-the-counter preparation for URIs and coughs consists of the familiar cough drops or throat lozenges. A slightly stronger category consists of various non-narcotic cough syrups. In some areas, a cough syrup can be purchased over-the-counter that contains small amounts of one or another opiate or opiate-like substance. Whenever these are taken by a crew member, he or she should not engage in flight duties for 12 hours or more. This is due to the potential adverse effects on alertness, judgment and coordination by these substances. In addition, should one of the drug screening tests that are currently being accomplished on air crew members in some countries be performed on an individual who has taken one of these medications, a positive test for opiates is sure to result (with potentially serious consequences).

There are anti-secretion drugs which may be derived from "ephedrine" or one of the antihistamines. Combinations of the two are also available. For the most part, anti-

histamines should be avoided. Some of these have greater drowsiness-inducing effects than others, and the crew member can consult an aviation medicine examiner for guidance.

Over-the-counter inhalers are available for relief from excessive secretions. These have a drying effect and help clear the nose and sinuses. These inhalers may also be useful in opening the eustachian tube should this become blocked during descent. The use of the inhaler may enable shrinkage of the throat membranes that encircle the eustachian tube opening and aid in ventilating the middle ear as the atmospheric pressure increases.

For bacterial URIs and those caused by other infectious agents that respond to antibiotics, the crew member must consult a physician. These medicines can only be used with safety when prescribed and given by a physician.

Smoking Makes It Worse

No crew member should smoke (or otherwise use tobacco). The damage caused by the tobacco products of combustion to the delicate membranes and tissues of the respiratory system is so extensive that when the inevitable URI is experienced, the additional tobacco product

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injury to various parts of the respiratory system may be irreversible. The emphysema and cancerous changes found so commonly among smokers are messages to crew members to not smoke, or, if currently smoking, to stop. There are airlines whose hiring policies exclude smokers, and this trend will undoubtedly increase as the medical disabilities directly related to smoking, along with the associated costs in excess company sick leave due to smoking, become more widely recognized.

Today's crew member should give attention to the potential adverse effects of upper respiratory infections, and have in mind a possible plan of action should one of these inevitably occur. Management personnel should appreciate the potential adverse effects of URIs and provide meaningful support and understanding where and when they are appropriate.

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