Influenza is a common illness affecting the general population. Athletes benefit from interdisciplinary health care. Vaccines are the best means of preventing influenza.

Key Points

Influenza

Influenza is a contagious respiratory virus. General signs and symptoms include fever, chills, cough, sore throat, runny or stuffy nose, body aches, headaches, and fatigue. Making an influenza diagnosis is difficult, because the virus mimics many other maladies. Athletes often complain of soreness associated with a rigorous workout or coughing after a long run in brisk weather; however, these signs can also be associated with influenza. Because the virus can be shared rather simply, through airborne droplets that are distributed by sneezing, coughing, or talking, athletes possess elevated risk for transmission. Most healthy adults are able to infect others as much as 24 hours prior to exhibiting symptoms. The transmission process can continue for five to seven days after the initial development of symptoms. Sharing water bottles or towels, passing a baton, catching a football, or even the use of common tennis balls are possible mechanisms for transmission of the resilient virus.

Evaluation

The frequent interaction with ATs with athletes provides awareness of each individual athlete’s baseline health status. When illness is suspected, ATs should look for signs of fatigue, decreased performance capabilities, and/or complaints of body aches or headache. If the athlete has a history of migraine headaches and associated muscle stiffness, exacerbation of a chronic illness could be the cause of the symptoms. Monitoring hydration status may preclude development of severe complications of influenza. Increased pallor, chills, or dry mucous membranes are indicators of dehydration. ATs can also use a clinical refractometer to measure urine specific gravity for a more accurate assessment of hydration status. Furthermore, mucous membrane dryness, constipation, and absence of saliva and tears may identify the route of fluid loss.

Once a thorough history has been obtained, the athlete needs to be examined to determine the extent to which the illness has progressed through its course. Especially within the first 24 hours of the illness onset, rest, hydration, and decreased contact with others should be encouraged. Self-care and...
hydration assessment (i.e., observation of urine color) can help to avoid prolonged illness. Allowing an athlete to continue to practice, compete, or perform weightlifting exercises can adversely affect the efficiency of the immune system response.

**Immediate Treatment**

An athlete who notices a substantial decrease in urination, increased constipation, and fever that is not well-controlled needs hydration therapy. Water, electrolyte-enhanced fluids, or both, should be self-administered on a frequent basis. If the athlete experiences nausea and vomiting with fever and diarrhea, hydration status needs to be addressed in an Urgent Care Clinic or an Emergency Room. The use of intravenous fluids can help to decrease symptoms and encourage faster recovery.

Athletes experience sputum production, shortness of breath or chest soreness should be evaluated for bacterial pneumonia. A greenish coloration of mucus or sputum normally indicates a bacterial component. If sputum remains clear, or even light yellow, a viral illness can be assumed, and antibiotic intervention is not indicated. If the athlete is unable to cough up mucus, the use of an expectorant is often helpful. Expectorants loosen mucus from the lung lining, which facilitates its removal through coughing. Chest percussion is also a helpful treatment for release of mucus from the lungs. Using a cupped hand (Figure 1), blows at a moderate level of force should be administered to the patient’s back over the entire area of the lungs, with particular attention to the lower portions of the lungs. Patient education is important, because large amounts of discolored mucus can be extracted by this method. Educating the patient about for the benefit of the therapy will often alleviate concerns about its effect.

**Referral and Medication**

An athlete who exhibits signs and symptoms of a virus would likely derive benefit from referral for prescription of antiviral medication, which will not cure the illness but will make its symptoms more tolerable. The most common antiviral medication is oseltamivir (Tamiflu®), which is given to adults at a dosage of 75mg, twice per day for five days. Antiviral medications decrease body aches, reduce fatigue, and help to shorten the course of the illness and are most beneficial when started within 48 hours of illness onset.

If the athlete’s condition worsens, even with extensive supportive measures, referral is appropriate. Even with adequate rest and hydration, influenza can progress to a bacterial infection, which will require an antibiotic for resolution. Although sputum color is a good indicator of the type of influenza, a sputum culture can identify the specific organism that is the cause of the illness. Also, a simple blood test should be administered to determine the white blood cell (WBC) concentration. Elevation of immature WBCs (left shift) signifies a bacterial infection. Because the body is trying to fight off an aggressive infection, the WBCs are being produced quickly and introduced prematurely. A complete WBC count provides a breakdown of each WBC type.

If the athlete is healthy, not on medication, and has no known medication allergies, bacterial infection can be treated with a short course of azithromycin.

![Figure 1](correct (a) and incorrect (b) hand posture for chest percussion.)
Influenza vaccinations are provided on an annual basis, because of continuing adaptation of the most prevalent strains. When the vaccine is manufactured, the most common strains of influenza are utilized. The 2010-2011 influenza vaccine is a combination of three influenza viruses (2009 H1N1, H3N2, and Influenza B). It is still possible to acquire the flu from a less virulent strain, because virus mutations preclude development of a vaccination that will provide protection from every strain. The influenza vaccine is recommended for anyone older than six months of age, and particularly for those working with the public (e.g., teachers, health care providers, food service workers, etc.). Vaccines are usually available in September and remain available through May of each year. Two weeks are required for the body to establish immunity against the virus, so the vaccination should be received as soon as it is made available to the public. See Table 1 for pros and cons of receiving the vaccination.

### Table 1. Pros and Cons of Vaccination

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<th>Pros</th>
<th>Cons</th>
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<td>Decreased risk of acquiring the flu</td>
<td>Mercury in vaccines have been associated with the development of Alzheimer’s disease and autism/</td>
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<td>Decreased health care cost</td>
<td>Adverse reactions (Guillain-Barré syndrome, anaphylaxis)</td>
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<td>Decreased loss of work days or sick leave</td>
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The nasal spray flu vaccine is an option for healthy young adults (2 to 49 years of age and not pregnant). However, the nasal spray vaccine is a live injection and should only be administered to individuals without chronic health problems.

### Summary

ATs are the first line of defense for protection of the health of athletes. When influenza is suspected, an AT should initiate the illness evaluation process, educate the athlete about self-care, monitor hydration status, and refer the athlete for more advanced clinical evaluation and treatment if the condition worsens.

### References


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