



## **Frequently Asked Questions: Severe Acute Respiratory Syndrome (SARS)**

### **What is Severe Acute Respiratory Syndrome (SARS)?**

SARS is a respiratory illness of unknown cause that has recently been reported in Asia, North America and Europe. For additional information, check the [World Health Organization's \(WHO\) SARS web site](#) or visit [CDC's SARS web site](#).

### **What are the symptoms and signs of Severe Acute Respiratory Syndrome (SARS)?**

The illness begins generally with a fever greater than 100.4°F [ $>38.0^{\circ}\text{C}$ ]. The fever is sometimes associated with chills or other symptoms, including headache, malaise, and body aches. Some persons also experience mild respiratory symptoms at the outset.

After 3 to 7 days, the person may develop a dry, nonproductive cough that might be accompanied by or progress to the point where insufficient oxygen is getting to the blood. In 10%--20% of cases, patients will require mechanical ventilation. For more information, see the [MMWR dispatch](#).

### **If I were exposed to Severe Acute Respiratory Syndrome (SARS), how long would it take for me to become sick?**

The incubation period for SARS is typically 2--7 days; however, isolated reports have suggested an incubation period as long as 10 days. The illness begins generally with a fever ( $>100.4^{\circ}\text{F}$  [ $>38.0^{\circ}\text{C}$ ]) (see signs and symptoms, above).

### **How does the disease (SARS) spread?**

It is difficult this early in the investigation to say exactly how SARS spreads. Close contacts of cases, including health care workers and family members, have developed similar illnesses. Examples of close contact include having cared for, lived with, or had direct contact with respiratory secretions and body fluids of people with SARS.

### **What is the cause of SARS?**

On the basis of available information, the cause of SARS cannot be definitively identified. On March 25, CDC announced that its scientists had detected a previously unrecognized coronavirus in 2 patients with SARS. These findings are preliminary and do not provide conclusive evidence that coronavirus is the cause of SARS.

### **Is there a test for SARS?**

Although coronavirus has not been proven to be the cause of SARS, CDC and its partners are working to develop a new test to look for evidence of coronavirus infection in patients with SARS.

### **How many cases of Severe Acute Respiratory Syndrome (SARS) have been reported so far?**

Visit [WHO's SARS page](#) for daily updates on case reports.

### **Are there any reports of people having contracted SARS in the US?**

Visit [WHO's SARS page](#) for daily updates on case reports.

### **How many people have died from SARS?**

Visit [WHO's SARS page](#) for a daily update of SARS cases and deaths.



### **Is SARS an outbreak of the Avian flu?**

There is no evidence at this time that the current cases of SARS are related to Avian flu.

### **Who is most at risk of contracting SARS?**

At this time, cases appear to primarily involve health care workers caring for patients with SARS and close family contacts.

### **What is known about the 7 cases of SARS that stayed in the same hotel in Hong Kong?**

On March 19, 2003, the Hong Kong Health Department reported that at least 7 of the initial patients stayed or visited a hotel in Kowloon during the month of February. The significance of this finding is being explored.

## **Coronavirus**

### **What are coronaviruses?**

Coronaviruses are a group of viruses that have a halo or crown-like (corona) appearance when viewed under a microscope. These viruses are a common cause of mild to moderate upper-respiratory illness in humans and are associated with respiratory, gastrointestinal, liver and neurologic disease in animals.

### **What evidence is there to suggest that coronaviruses may be linked with SARS?**

CDC scientists were able to isolate a virus from the tissues of two patients who had SARS and then used several laboratory methods to characterize the agent. Examination by electron microscopy revealed that the virus had the distinctive shape and appearance of coronaviruses. Tests of serum specimens from patients with SARS showed that the patients appeared to have recently been infected with this coronavirus. Other tests demonstrated that coronavirus was present in a variety of clinical specimens from patients, including nose and throat swabs. In addition, genetic analysis suggests that this new virus belongs to the family of coronaviruses, but differs from previously identified coronaviruses.

These laboratory results do not provide conclusive evidence that the new coronavirus is the cause of SARS. Additional specimens are being tested to learn more about this coronavirus and its link with SARS.

### **If coronaviruses usually cause mild illness in humans, how could this new coronavirus be responsible for a potentially life-threatening disease such as SARS?**

There is not enough information about the new virus to determine the full range of illness that it might cause. Coronaviruses have occasionally been linked to pneumonia in humans, especially people with weakened immune systems. The viruses can also cause severe disease in animals, including cats, dogs, pigs, mice, and birds.

### **Have other laboratories found evidence of coronavirus in SARS patients?**

CDC has been working with the World Health Organization (WHO), international partners at laboratory centers, and ministries of health in this investigation. Some of the laboratories participating in this WHO network have also reported positive results for the presence of coronavirus in specimens from SARS patients. Additional testing is under way at the WHO network laboratories.



### **What about reports from other laboratories suggesting that the cause of SARS may be a paramyxovirus?**

Researchers from several laboratories participating in the World Health Organization (WHO) network have reported the identification of a paramyxovirus in clinical specimens from SARS patients. Laboratories in the WHO network are still investigating the possibility that a paramyxovirus is a cause of SARS. CDC has found no evidence to date of paramyxovirus in clinical specimens, but additional testing is under way.

## **CDC Activities**

### **What is CDC doing to combat this health threat?**

CDC has activated its Emergency Operations Center (EOC); is distributing health alert notices to travelers who may have been exposed to cases of SARS; is assisting state and local health departments in investigating possible cases of SARS in the United States; is providing safe specimen-handling guidelines to laboratories; is analyzing laboratory specimens to identify a cause for SARS; and has deployed more than a dozen CDC medical officers, epidemiologists, infection control specialists, and pathologists to support the World Health Organization in the global investigation. As always, CDC is committed to communicating regularly and effectively with public health professionals, elected leaders, clinicians and the general public.

## **CDC Recommendations**

### **What should I do if I think I have SARS?**

If you are ill with a fever of over 100.4 °F [ $>38.0^{\circ}\text{C}$ ] that is accompanied by a cough or difficulty breathing, or that progresses to a cough and/or difficulty breathing, you should consult a health care provider. To help your health care provider make a diagnosis, tell them about any recent travel to regions where cases of SARS have been reported and whether you were in contact with someone who had these symptoms.

### **What should I do if I have recently traveled to a country where cases of SARS have been reported?**

You should monitor your own health for 7 to 10 days following your return. If you become ill with a fever of over 100.4 °F [ $>38.0^{\circ}\text{C}$ ] that is accompanied by a cough or difficulty breathing, or that progresses to a cough and/or difficulty breathing, you should consult a health care provider. To help your health care provider make a diagnosis, tell them about any recent travel to regions where cases of SARS have been reported and whether you were in contact with someone who had these symptoms.

### **What medical treatment is recommended for patients with SARS? Has new information about coronavirus changed that recommendation?**

CDC currently recommends that patients with SARS receive the same treatment that would be used for any patient with serious community acquired atypical pneumonia of unknown cause. Reported treatment regimens have included antibiotics to presumptively treat known bacterial agents of atypical pneumonia. Therapy also has included antiviral agents such as oseltamivir or ribavirin. Steroids have also been administered orally or intravenously to patients in combination with ribavirin and other antimicrobials. For more information on SARS visit [CDC's SARS web site](#) and see "[Interim Information and Recommendations for Health Care Providers](#)."



The possibility that coronavirus is the cause of SARS has not changed treatment recommendations. The new coronavirus is being tested against various antiviral drugs to see if an effective treatment can be found.

### **What has CDC recommended to prevent transmission of SARS?**

CDC has developed interim infection control recommendations for patients with suspected SARS in the health care and community setting. Visit [CDC's SARS web site](#) and review [CDC Interim Information and Recommendation for Health Care Providers](#) and [CDC Interim Guidance for State and Local Health Departments](#).

### **Are there any travel restrictions related to SARS?**

At this time there are no travel restrictions in place that are directly related to SARS. However, a CDC travel advisory recommends individuals who are planning nonessential or elective travel to parts of China (Hong Kong, SAR, and Guangdong Province) and Hanoi, Vietnam may wish to postpone their trip until further notice. For additional information about travel advisories, check [CDC's Travelers' Health site](#), which will be updated as necessary.

### **Should potential SARS patients be isolated?**

CDC has developed guidelines that address [infection control](#) precautions in the health care and community setting. These can be found at [CDC's SARS web site](#) and will be updated as new information about SARS becomes available.

### **How should a suspected SARS patient be transported to ensure infection control?**

To minimize the potential of transmission outside the hospital, case patients should limit interactions outside the home until more is known about transmission of SARS. Placing a surgical mask on case patients in ambulatory health care settings, during transport, and during contact with others at home is recommended.

### **What precautions should health care facilities follow in regards to permitting visits by close contacts (e.g., family members) of SARS patients?**

Close contacts (e.g., family members or other members of the household) of SARS patients are at risk for infection. Health care facilities should implement a system to screen for fever or respiratory symptoms in SARS close contacts who visit the facility. Close contacts with either fever or respiratory symptoms should not be allowed to enter the health care facility as visitors and should be educated about this policy. Health care facilities should educate all visitors about use of infection control precautions ([www.cdc.gov/ncidod/sars/infectioncontrol.htm](http://www.cdc.gov/ncidod/sars/infectioncontrol.htm)) when visiting SARS patients and should emphasize the importance of following these precautions.

### **What precautions should health care workers exposed to SARS patients follow?**

Health care facilities should be vigilant in conducting active surveillance for fever or respiratory symptoms among care givers with **unprotected** exposure to SARS patients. Health care workers who develop fever or respiratory symptoms during the 10 days following an unprotected exposure to a SARS patient should not report for duty, but should stay home and report symptoms to the appropriate facility point of contact immediately. Exclusion from duty should be continued for 10 days after the resolution of fever and respiratory symptoms. During this period, infected workers should avoid contact with persons both in the facility and in the community.



Exclusion from duty is not recommended for an exposed health care worker if they do not have either fever or respiratory symptoms; however, the worker should report any unprotected exposure to SARS patients to the appropriate facility point of contact (e.g., infection control or occupational health) immediately.

Interim guidance for the management of exposures to SARS in a health care facility is at [www.cdc.gov/ncidod/sars/exposureguidance.htm](http://www.cdc.gov/ncidod/sars/exposureguidance.htm).

## Travel and Quarantine

### **What are CDC's quarantine officials doing to prevent and control the spread of SARS?**

During the ongoing investigation into SARS, CDC's quarantine inspectors play an important role. Inspectors or their designees provide information to returning air travelers arriving-directly or indirectly-from Hong Kong, Guangdong Province, People's Republic of China, and Hanoi, Vietnam. This same information is being provided via the major shipping associations and the International Council of Cruise Lines (ICCL) to persons traveling on cargo ships and cruise ships.

Inspectors are handing out health alert notices to arriving air travelers alerting them of their possible exposure to SARS. The notices ask travelers to monitor their health for 7 days and see a doctor if they get a fever with a cough or have difficulty breathing. Inspectors are also boarding airplanes to check travelers for any symptoms matching the [case definition](#) of SARS.

### **Which travelers are being given health alerts?**

Travelers returning from Hong Kong, Guangdong Province, People's Republic of China and Hanoi, Vietnam are being given printed information ([health alert notices](#)) that they may have been exposed to cases of severe acute respiratory syndrome (SARS). Travelers are advised to monitor their health for at least seven days, to contact their physicians if they become ill with a fever accompanied by a cough or difficulty in breathing, and to inform their physician of their recent travel.

### **What does a quarantine inspector do?**

Quarantine inspectors serve as important guardians of health at borders and ports of entry into the United States. They routinely respond to illness in arriving passengers and ensure that the appropriate medical action is taken.

### **What is considered routine health inspections of airplanes or ships versus what is happening now?**

Routine health inspections consist of working with airlines, cargo ships, and cruise ships to protect passengers and crew from certain infectious diseases. Quarantine inspectors meet arriving aircraft and ships reporting ill passengers and/or crew (as defined in the [foreign quarantine regulations \[pdf\]](#)) and assist them in getting appropriate medical treatment.

### **What is the risk to individuals who may have shared a plane or boat trip with a suspected SARS patient?**

Available data indicate that transmission seems to require direct or close contact. Cases have occurred among health care workers caring for ill patients and close family contacts. CDC is taking locating information from travelers who are on flights with people suspected of having SARS. CDC, with the help of state and local health authorities, is attempting to



follow up on these travelers for 7 days to make sure no one develops symptoms consistent with SARS. So far, no cases of SARS have been reported in these travelers.

**Who actually notifies quarantine officials of potential SARS cases? Is it the crew of the airplane or ship? The passengers?**

Under [foreign quarantine regulations](#), the master of a ship or captain of an airplane coming into the United States from a foreign port is required by law to report certain illnesses among passengers. The illness must be reported to the nearest quarantine official. If possible, the crew of the airplane or ship will try to relocate the ill passenger or crew member away from others. Quarantine officials arrange for appropriate medical assistance to be available when the airplane lands or the ship docks. If the passenger is only passing through a port of entry on his/her way to another destination, port health authorities may refer the passenger to a local health authority for assessment and care.

**If I'm on board an airplane or ship with someone suspected of having SARS, will I be allowed to continue to my destination?**

CDC does not currently recommend that the onward travel of healthy passengers be restricted in the event that a passenger or crew member suspected of having SARS is removed from the ship or airplane by port health authorities. All passengers and crew members may be advised by port health authorities to seek medical attention if they develop these symptoms: <http://www.cdc.gov/ncidod/sars/casedefinition.htm>.

**What does a quarantine official do if a passenger is identified as meeting the case definition for suspected SARS?**

Quarantine officials arrange for appropriate medical assistance to be available when the airplane lands or the ship docks, including medical isolation. Isolation is important not only for the sick passenger's comfort and care, but also for the protection of members of the public. Isolation is recommended for travelers with suspected cases of SARS until appropriate medical treatment can be provided or until they are no longer infectious.

**What does a quarantine official do if a passenger identified as meeting the case definition for suspected SARS refuses to be isolated?**

Many levels of government (Federal, State, and local) have basic authority to compel isolation of sick persons to protect the public. In the event that it is necessary to compel isolation of a sick passenger, CDC will work with appropriate State and local officials to ensure that the passenger does not infect others.

**Other**

**Is there any reason to think SARS is or is not related to terrorism?**

Information currently available about SARS indicates that people who appear to be most at risk are either health care workers taking care of sick people or family members or household contacts of those who are infected with SARS. That pattern of transmission is what would typically be expected in a contagious respiratory or flu-like illness.