



## SEVERE ACUTE RESPIRATORY SYNDROME

# NOTICE

Since 2004, there have not been any known cases of SARS reported anywhere in the world. The content in this PDF was developed for the 2003 SARS epidemic. But, some guidelines are still being used. Any new SARS updates will be posted on this Web site.



## SEVERE ACUTE RESPIRATORY SYNDROME

### Frequently Asked Questions About SARS

#### THE DISEASE

##### **What is SARS?**

Severe acute respiratory syndrome (SARS) is a viral respiratory illness that was recognized as a global threat in March 2003, after first appearing in Southern China in November 2002.

##### **What are the symptoms and signs of SARS?**

The illness usually begins with a high fever (measured temperature greater than 100.4°F [ $>38.0^{\circ}\text{C}$ ]). The fever is sometimes associated with chills or other symptoms, including headache, general feeling of discomfort, and body aches. Some people also experience mild respiratory symptoms at the outset. Diarrhea is seen in approximately 10 percent to 20 percent of patients. After 2 to 7 days, SARS patients may develop a dry, nonproductive cough that might be accompanied by or progress to a condition in which the oxygen levels in the blood are low (hypoxia). In 10 percent to 20 percent of cases, patients require mechanical ventilation. Most patients develop pneumonia.

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

SARS is caused by a previously unrecognized coronavirus, called SARS-associated coronavirus (SARS-CoV). It is possible that other infectious agents might have a role in some cases of SARS.

##### **How is SARS spread?**

The primary way that SARS appears to spread is by close person-to-person contact. SARS-CoV is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s). In addition, it is possible that SARS-CoV might be spread more broadly through the air (airborne spread) or by other ways that are not now known.

##### **What does "close contact" mean?**

Close contact is defined as having cared for or lived with a person known to have SARS or having a high likelihood of direct contact with respiratory secretions and/or body fluids of a patient known to have SARS. Examples include kissing or embracing, sharing eating or drinking utensils, close conversation (within 3 feet), physical examination, and any other direct physical contact between people. Close contact does not include activities such as walking by a person or briefly sitting across a waiting room or office.

##### **If I were exposed to SARS-CoV, how long would it take for me to become sick?**

The time between exposure to SARS-CoV and the onset of symptoms is called the "incubation period." The incubation period for SARS is typically 2 to 7 days, although in some cases it may be as long as 10 days. In a very small proportion of cases, incubation periods of up to 14 days have been reported.

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### **How long is a person with SARS contagious?**

Available information suggests that persons with SARS are most likely to be contagious only when they have symptoms, such as fever or cough. Patients are most contagious during the second week of illness. However, as a precaution against spreading the disease, CDC recommends that persons with SARS limit their interactions outside the home (for example, by not going to work or to school) until 10 days after their fever has gone away and their respiratory (breathing) symptoms have gotten better.

### **Is a person with SARS contagious before symptoms appear?**

To date, no cases of SARS have been reported among persons who were exposed to a SARS patient before the onset of the patient's symptoms.

### **What medical treatment is recommended for patients with SARS?**

CDC recommends that patients with SARS receive the same treatment that would be used for a patient with any serious community-acquired atypical pneumonia. SARS-CoV is being tested against various antiviral drugs to see if an effective treatment can be found.

### **If there is another outbreak of SARS, how can I protect myself?**

If transmission of SARS-CoV recurs, there are some common-sense precautions that you can take that apply to many infectious diseases. The most important is frequent hand washing with soap and water or use of an alcohol-based hand rub. You should also avoid touching your eyes, nose, and mouth with unclean hands and encourage people around you to cover their nose and mouth with a tissue when coughing or sneezing.

## **GLOBAL SARS OUTBREAK, 2003**

### **How many people contracted SARS worldwide during the 2003 outbreak? How many people died of SARS worldwide?**

During November 2002 through July 2003, a total of 8,098 people worldwide became sick with severe acute respiratory syndrome that was accompanied by either pneumonia or respiratory distress syndrome (probable cases), according to the World Health Organization (WHO). Of these, 774 died. By late July 2003, no new cases were being reported, and WHO declared the global outbreak to be over. For more information on the global SARS outbreak of 2003, visit [WHO's SARS website](#).

### **How many people contracted SARS in the United States during the 2003 outbreak? How many people died of SARS in the United States?**

In the United States, only eight persons were laboratory-confirmed as SARS cases. There were no SARS-related deaths in the United States. All of the eight persons with laboratory-confirmed SARS had traveled to areas where SARS-CoV transmission was occurring.

## **CURRENT SARS SITUATION, 2004**

### **What is the current SARS situation in the world?**

In April 2004, the Chinese Ministry of Health reported several new cases of possible SARS in Beijing and in Anhui Province, which is located in east-central China. As of April 26, the Ministry of Health had reported eight possible SARS cases: six in Beijing and two in Anhui Province. One of the patients in Anhui Province died. Nearly 1000 contacts of these patients with possible SARS are under medical observation, including 640 in Beijing and 353 in Anhui.

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In addition, health authorities have reported that two doctors who treated one of one of the patients during her hospitalization in Anhui have developed fever. A person in close contact with one of the doctors has also developed fever.

To date, all diagnosed cases and cases under investigation have been linked to chains of transmission involving close personal contact with an identified case. There is no evidence of wider transmission in the community. For additional information on the SARS situation in China, see [www.who.int/csr/don/2004\\_04\\_26/en](http://www.who.int/csr/don/2004_04_26/en).

CDC is monitoring this evolving situation in China and will provide additional information on this website as it becomes available.

At this time, CDC is not advising changes in the current U.S. SARS control measures other than the recommendations stated in the [HAN Information Update for April 23](#). This update contains additional details about the reported SARS cases. For updates on the current situation regarding SARS, refer to other pages on [CDC's SARS website](#). Travel information is provided on [CDC's Travelers' Health website](#).

## SARS-ASSOCIATED 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.

### 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 also can cause severe disease in animals, including cats, dogs, pigs, mice, and birds.

### How long can SARS-CoV survive in the environment?

Preliminary studies in some research laboratories suggest that the virus may survive in the environment for several days. The length of time that the virus survives likely depends on a number of factors. These factors could include the type of material or body fluid containing the virus and various environmental conditions such as temperature or humidity. Researchers at CDC and other institutions are designing standardized experiments to measure how long SARS-CoV can survive in situations that simulate natural environmental conditions.

## LABORATORY TESTING

### Is there a laboratory test for SARS?

Yes, several laboratory tests can be used to detect SARS-CoV. A reverse transcription polymerase chain reaction (RT-PCR) test can detect SARS-CoV in clinical specimens such as blood, stool, and nasal secretions. Serologic testing also can be performed to detect SARS-CoV antibodies produced after infection. Finally, viral culture has been used to detect SARS-CoV.

### What is a PCR test?

PCR (or polymerase chain reaction) is a laboratory method for detecting the genetic material of an

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infectious disease agent in specimens from patients. This type of testing has become an essential tool for detecting infectious disease agents.

### **What does serologic testing involve?**

A serologic test is a laboratory method for detecting the presence and/or level of antibodies to an infectious agent in serum from a person. Antibodies are substances made by the body's immune system to fight a specific infection.

### **What does viral culture and isolation involve?**

For a viral culture, a small sample of tissue or fluid that may be infected is placed in a container along with cells in which the virus can grow. If the virus grows in the culture, it will cause changes in the cells that can be seen under a microscope.

For more information, visit [www.cdc.gov/sars](http://www.cdc.gov/sars) or call the CDC public response hotline at (888) 246-2675 (English), (888) 246-2857 (español), or (866) 874-2646 (TTY)

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