New coronavirus stable for hours on surfaces

SARS-CoV-2 stability similar to original SARS virus.
What

The virus that causes coronavirus disease 2019 (COVID-19) is stable for several hours to days in aerosols and on surfaces, according to a new study from National Institutes of Health, CDC, UCLA and Princeton University scientists in *The New England Journal of Medicine*. The scientists found that severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was detectable in aerosols for up to three hours, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel. The results provide key information about the stability of SARS-CoV-2, which causes COVID-19 disease, and suggests that people may acquire the virus through the air and after touching contaminated objects. The study information was widely shared during the past two weeks after the researchers placed the contents on a preprint server to quickly share their data with colleagues.

The NIH scientists, from the National Institute of Allergy and Infectious Diseases’ Montana facility at Rocky Mountain Laboratories, compared how the environment affects SARS-CoV-2 and SARS-CoV-1, which causes SARS. SARS-CoV-1, like its successor now circulating across the globe, emerged from China and infected more than 8,000 people in 2002 and 2003. SARS-CoV-1 was eradicated by intensive
contact tracing and case isolation measures and no cases have been detected since 2004. SARS-CoV-1 is the human coronavirus most closely related to SARS-CoV-2. In the stability study the two viruses behaved similarly, which unfortunately fails to explain why COVID-19 has become a much larger outbreak.

The NIH study attempted to mimic virus being deposited from an infected person onto everyday surfaces in a household or hospital setting, such as through coughing or touching objects. The scientists then investigated how long the virus remained infectious on these surfaces.

The scientists highlighted additional observations from their study:

- If the viability of the two coronaviruses is similar, why is SARS-CoV-2 resulting in more cases? Emerging evidence suggests that people infected with SARS-CoV-2 might be spreading virus without recognizing, or prior to recognizing, symptoms. This would make disease control measures that were effective against SARS-CoV-1 less effective against its successor.

- In contrast to SARS-CoV-1, most secondary cases of virus transmission of SARS-CoV-2 appear to be occurring in community settings rather than healthcare settings. However, healthcare settings are also vulnerable to the introduction and spread of SARS-CoV-2, and the stability of SARS-CoV-2 in aerosols and on surfaces likely contributes to transmission of the virus in healthcare settings.

The findings affirm the guidance from public health professionals to use precautions similar to those for influenza and other respiratory viruses to prevent the spread of SARS-CoV-2:

- Avoid close contact with people who are sick.
- Avoid touching your eyes, nose, and mouth.
- Stay home when you are sick.
- Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe.

Article


Who

NIAID Director Anthony S. Fauci, M.D., and Vincent Munster, Ph.D., a principal investigator in NIAID's Laboratory of Virology, are available to comment on this study.

This media availability describes a basic research finding. Basic research increases our understanding of human behavior and biology, which is foundational to advancing new and better ways to prevent, diagnose, and treat disease. Science is an unpredictable and incremental process—each research advance builds on past discoveries, often in unexpected ways. Most clinical advances would not be possible without the knowledge of fundamental basic research.

NIAID conducts and supports research — at NIH, throughout the United States, and worldwide — to study the causes of infectious and immune-mediated diseases, and to develop better means of preventing, diagnosing and treating these illnesses. News releases, fact sheets and other NIAID-related materials are available on the NIAID website.

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov.

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Institute/Center
National Institute of Allergy and Infectious Diseases (NIAID)

Contact
Ken Pekoc
301-402-1663

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U.S. Department of Health and Human Services
What Constitutes a Dental Emergency?

The ADA recognizes that state governments and state dental associations may be best positioned to recommend to the dentists in their regions the amount of time to keep their offices closed to all but emergency care. This is fluid situation and those closest to the issue may best understand the local challenges being faced.

DENTAL EMERGENCY

This guidance may change as the COVID-19 pandemic progresses. Dentists should use their professional judgment in determining a patient’s need for urgent or emergency care.

Dental emergencies are potentially life threatening and require immediate treatment to stop ongoing tissue bleeding, alleviate severe pain or infection, and include:

- Uncontrolled bleeding
- Cellulitis or a diffuse soft tissue bacterial infection with intra-oral or extra-oral swelling that potentially compromise the patient’s airway
- Trauma involving facial bones, potentially compromising the patient’s airway

Urgent dental care focuses on the management of conditions that require immediate attention to relieve severe pain and/or risk of infection and to alleviate the burden on hospital emergency departments. These should be treated as minimally invasively as possible.

- Severe dental pain from pulpal inflammation
- Pericoronitis or third-molar pain
- Surgical post-operative osteitis, dry socket dressing changes
- Abscess, or localized bacterial infection resulting in localized pain and swelling
- Tooth fracture resulting in pain or causing soft tissue trauma
- Dental trauma with avulsion/luxation
- Dental treatment required prior to critical medical procedures
- Final crown/bridge cementation if the temporary restoration is lost, broken or causing gingival irritation

Other urgent dental care:

- Extensive dental caries or defective restorations causing pain
- Manage with interim restorative techniques when possible (silver diamine fluoride, glass ionomers)
- Suture removal
- Denture adjustment on radiation/oncology patients
- Denture adjustments or repairs when function impeded
- Replacing temporary filling on endo access openings in patients experiencing pain
- Snipping or adjustment of an orthodontic wire or appliances piercing or ulcerating the oral mucosa

DENTAL NON EMERGENCY PROCEDURES

Routine or non-urgent dental procedures includes but are not limited to:

- Initial or periodic oral examinations and recall visits, including routine radiographs
- Routine dental cleaning and preventive therapies
- Orthodontic procedures other than those to address acute issues (e.g. pain, infection, trauma)
- Extraction of asymptomatic teeth
- Restorative dentistry including treatment of asymptomatic carious lesions
- Aesthetic dental procedures

FOR THE LATEST UPDATES, VISIT ADA.ORG/VIRUS
A new respiratory disease—coronavirus disease 2019 (COVID-19)—may impact your community. Get ready! Steps you take to prepare your clinic for flu can also help protect your patients and healthcare workers from COVID-19:

**Before Patients Arrive**

- **Prepare the clinic.**
  - Know which of your patients are at higher risk of adverse outcomes from COVID-19.
  - Consider and plan for providing more telemedicine appointments.
  - Know how to contact your health department.
  - Stay connected with your health department to know about COVID-19 in your community. Step up precautions when the virus is spreading in your community.
  - Assess and restock supplies now and on a regular schedule.

- **Communicate with patients.**
  - Ask patients about symptoms during reminder calls.
  - Consider rescheduling non-urgent appointments.
  - Post signs at entrances and in waiting areas about prevention actions.

- **Prepare the waiting area and patient rooms.**
  - Provide supplies—tissues, alcohol-based hand rub, soap at sinks, and trash cans.
  - Place chairs 3–6 feet apart, when possible. Use barriers (like screens), if possible.
  - If your office has toys, reading materials, or other communal objects, remove them or clean them regularly.

**When Patients Arrive**

- **Place staff at the entrance to ask patients about their symptoms.**
  - Provide symptomatic patients with tissues or facemasks to cover mouth and nose.
  - Limit non-patient visitors.

- **Separate sick patients with symptoms.**
  - Allow patients to wait outside or in the car if they are medically able.
  - Create separate spaces in waiting areas for sick and well patients.
  - Place sick patients in a private room as quickly as possible.

**After Patients are Assessed**

- **After patients leave, clean frequently touched surfaces** using EPA-registered disinfectants—counters, beds, seating.

- **Provide at-home care instructions** to patients with respiratory symptoms. Consider telehealth options for follow up.

- **Notify your health department** of patients with COVID-19 symptoms.

**Train and prepare your staff now**

- Ensure that clinical staff know the right ways to put on, use, and take off PPE safely.
- Recognize the symptoms of COVID-19—fever, cough, shortness of breath.
- Implement procedures to quickly triage and separate sick patients.

- Emphasize hand hygiene and cough etiquette for everyone.
- Ask staff to stay home if they are sick.
- Send staff home if they develop symptoms while at work.

For more information: [www.cdc.gov/COVID19](http://www.cdc.gov/COVID19)
This is a list of telephone numbers for health departments across the United States that travelers can use to connect with the health department in their destination state or the state they are in. These phone lines are monitored at all times, and travelers may call 24 hours a day and 7 days a week unless noted. Members of the public with general questions about COVID-19 should call their state health department’s main daytime telephone number or they can contact CDC at www.cdc.gov/cdc-info or 1-800-CDC-INFO (800-232-4636) or TTY 888-232-6348.

<table>
<thead>
<tr>
<th>State</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1-800-338-8374</td>
</tr>
<tr>
<td>Alaska</td>
<td>1-800-478-0084 or 1-907-269-8000</td>
</tr>
<tr>
<td>Arizona</td>
<td>1-480-303-1191</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1-800-554-5738</td>
</tr>
<tr>
<td>California</td>
<td>1-800-852-7550. Ask for the CDPH Duty Officer</td>
</tr>
<tr>
<td></td>
<td>1-213-288-8707. Available from 8:00am-5:00pm</td>
</tr>
<tr>
<td>Colorado</td>
<td>1-303-370-9395</td>
</tr>
<tr>
<td>Commonwealth of the Northern Marian Islands</td>
<td>1-670-234-8950</td>
</tr>
<tr>
<td>Connecticut</td>
<td>1-860-509-8000</td>
</tr>
<tr>
<td>Delaware</td>
<td>1-302-744-4700</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>1-202-576-1117</td>
</tr>
<tr>
<td>Florida</td>
<td>1-850-245-4401</td>
</tr>
<tr>
<td>Georgia</td>
<td>1-866-782-4584</td>
</tr>
<tr>
<td>Hawaii</td>
<td>2-1-1 or 1-808-586-4586</td>
</tr>
<tr>
<td>Idaho</td>
<td>1-208-334-5939</td>
</tr>
<tr>
<td>Illinois</td>
<td>1-800-889-3931. 3-1-1 (inside city limits) or 1-312-744-5000</td>
</tr>
<tr>
<td>Indiana</td>
<td>1-317-233-1325</td>
</tr>
<tr>
<td>Iowa</td>
<td>1-800-362-2736</td>
</tr>
<tr>
<td>Kansas</td>
<td>1-877-427-7317</td>
</tr>
<tr>
<td>Kentucky</td>
<td>1-888-973-7678</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1-800-256-2748</td>
</tr>
<tr>
<td>Maine</td>
<td>1-800-821-5821</td>
</tr>
<tr>
<td>Maryland</td>
<td>1-410-795-7365</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>1-617-983-6800</td>
</tr>
<tr>
<td>Michigan</td>
<td>1-517-335-9030</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1-651-201-5414</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1-601-576-7725 or 1-601-576-7400 (after hours, holidays, and weekends)</td>
</tr>
</tbody>
</table>
## Phone Numbers for State and Local Health Departments

<table>
<thead>
<tr>
<th>State</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missouri</td>
<td>1-800-392-0272, Ext.1</td>
</tr>
<tr>
<td>Montana</td>
<td>1-406-444-0273</td>
</tr>
<tr>
<td>Nebraska</td>
<td>1-402-444-3400 <em>Available from 8:30am-4:00pm CT</em></td>
</tr>
<tr>
<td>Nevada</td>
<td>1-775-400-0333</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>1-603-271-4496</td>
</tr>
<tr>
<td>New Jersey</td>
<td>1-800-222-1222</td>
</tr>
<tr>
<td>New Mexico</td>
<td>1-505-827-0006</td>
</tr>
<tr>
<td>New York</td>
<td>1-866-881-2809</td>
</tr>
<tr>
<td></td>
<td>1-347-396-7990</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1-866-462-3821</td>
</tr>
<tr>
<td>North Dakota</td>
<td>1-701-328-2270</td>
</tr>
<tr>
<td>Ohio</td>
<td>1-614-722-7221</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>1-405-271-4060</td>
</tr>
<tr>
<td>Oregon</td>
<td>1-971-673-1111</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1-877-724-3258</td>
</tr>
<tr>
<td></td>
<td>1-215-686-4514</td>
</tr>
<tr>
<td></td>
<td>1-412-687-2243</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>1-787-765-2929, Ext.3552 or 3551 or 1-787-692-6276</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>1-401-222-2577 or 1-401-276-8046 <em>(after hours)</em></td>
</tr>
<tr>
<td>South Carolina</td>
<td>1-888-847-0902</td>
</tr>
<tr>
<td>South Dakota</td>
<td>1-800-592-1861</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1-615-741-7247</td>
</tr>
<tr>
<td>Texas</td>
<td>1-512-776-7111</td>
</tr>
<tr>
<td>Utah</td>
<td>1-888-374-8824</td>
</tr>
<tr>
<td>Vermont</td>
<td>1-802-863-7240</td>
</tr>
<tr>
<td>Virgin Islands</td>
<td>See below.</td>
</tr>
<tr>
<td></td>
<td>1-340-774-9000 <em>Available from 9:00am-5:00pm</em></td>
</tr>
<tr>
<td></td>
<td>1-340-718-1311 <em>Available from 9:00am-5:00pm</em></td>
</tr>
<tr>
<td>Virginia</td>
<td>1-877-ASK-VDH3 (1-877-275-8343)</td>
</tr>
<tr>
<td>Washington</td>
<td>1-800-525-0127</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1-304-558-5358, Ext. 1</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1-608-258-0099</td>
</tr>
<tr>
<td>Wyoming</td>
<td>1-888-996-9104</td>
</tr>
</tbody>
</table>

*If you have a medical emergency, call 911.*
Coronavirus Disease 2019 (COVID-19)


Key Considerations for Healthcare Facilities:

Currently there are no medications to treat or vaccines to prevent COVID-19. Therefore, community approaches to slowing transmission including appropriate hand hygiene, cough etiquette, social distancing, and reducing face-to-face contact with potential COVID-19 cases are needed to slow disease transmission and reduce the number of people who get sick. In each healthcare facility, the primary goals include:

- Provision of the appropriate level of medical care
- Protecting healthcare personnel and non-COVID-19 patients accessing healthcare from infection
- Preparing for a potential surge in patients with respiratory infection
- Preparing for potential personal protective equipment supply and staff shortages

Purpose of this document: This interim guidance outlines goals and strategies for all U.S. healthcare facilities to prepare for and respond to community spread of coronavirus disease-2019 (COVID-19). Although it is not possible to predict the future course of the outbreak, planning for a scenario in which many persons become ill and seek care at the same time is an important part of preparedness and can improve outcomes if an outbreak occurs. Therefore, preserving healthcare system functioning is paramount. It is critical for healthcare facilities to continue to provide care for all patients, irrespective of COVID-19 infection status, at the appropriate level (e.g., home-based care, outpatient, urgent care, emergency room, or hospitalization). Facilities may need to respond to a surge in patients requiring care. Concentrated efforts will be required to mobilize all aspects of healthcare to reduce transmission of disease, direct people to the right level of care, and decrease the burden on the healthcare system.

Public health guidance will shift as the COVID-19 outbreak evolves. All healthcare facilities should be aware of any updates to local and state public health recommendations.

Key Goals for the U.S. healthcare system in response to the COVID-19 outbreak are to:

1. Reduce morbidity and mortality
2. Minimize disease transmission
3. Protect healthcare personnel
4. Preserve healthcare system functioning

Actions to take now to prepare for an outbreak of COVID-19

1. Designate a time to meet with your staff to educate them on COVID-19 and what they may need to do to prepare. The following may be useful resources to share information about COVID-19:
   - How COVID-19 spreads
   - Clinical management of COVID-19 patients
   - Infection prevention and control recommendations for COVID-19

2. Explore alternatives to face-to-face triage and visits. The following options can reduce unnecessary healthcare visits and prevent transmission of respiratory viruses in your facility:
   - Instruct patients to use available advice lines, patient portals, on-line self-assessment tools, or call and speak to an office/clinic staff if they become ill with symptoms such as fever, cough, or shortness of breath.
Identify staff to conduct telephonic and telehealth interactions with patients. Develop protocols so that staff can triage and assess patients quickly.

Determine algorithms to identify which patients can be managed by telephone and advised to stay home, and which patients will need to be sent for emergency care or come to your facility.

Instruct patients that if they have respiratory symptoms they should call before they leave home, so staff can be prepared to care for them when they arrive.

3. Plan to optimize your facility’s supply of personal protective equipment in the event of shortages. Identify flexible mechanisms to procure additional supplies when needed.

   - Visual alerts (signs, posters) at entrances and in strategic places providing instruction on hand hygiene, respiratory hygiene, and cough etiquette
   - Ensure supplies are available (tissues, waste receptacles, alcohol-based hand sanitizer)
   - Facemasks are available at triage for patients with respiratory symptoms
   - Create an area for spatially separating patients with respiratory symptoms. Ideally patients would be >6 feet apart in waiting areas.

Plan to Take the Following Actions if COVID-19 is spreading in your community

1. Work with local and state public health organizations, healthcare coalitions, and other local partners to understand the impact and spread of the outbreak in your area.

2. Designate staff who will be responsible for caring for suspected or known COVID-19 patients. Ensure they are trained on the infection prevention and control recommendations for COVID-19 and proper use of personal protective equipment.

3. Monitor healthcare workers and ensure maintenance of essential healthcare facility staff and operations:
   - Ensure staff are aware of sick leave policies and are encouraged to stay home if they are ill with respiratory symptoms.
   - Be aware of recommended work restrictions and monitoring based on staff exposure to COVID-19 patients.
   - Advise employees to check for any signs of illness before reporting to work each day and notify their supervisor if they become ill.
   - Do not require a healthcare provider’s note for employees who are sick with respiratory symptoms before returning to work.
   - In settings of widespread transmission, your facility may consider screening staff for fever or respiratory symptoms before entering the facility.
   - Make contingency plans for increased absenteeism caused by employee illness or illness in employees’ family members that would require them to stay home. Planning for absenteeism could include extending hours, cross-training current employees, or hiring temporary employees.

4. When possible, manage mildly ill COVID-19 patients at home.
   - Assess the patient's ability to engage in home monitoring, the ability for safe isolation at home, and the risk of transmission in the patient's home environment.
   - Caregivers and sick persons should have clear instructions regarding home care and when and how to access the healthcare system for face-to-face care or urgent/emergency conditions.
   - If possible, identify staff who can monitor those patients at home with daily “check-ins” using telephone calls, text, patient portals or other means.
   - Engage local public health, home health services, and community organizations to assist with support services (such as delivery of food, medication and other goods) for those treated at home.

Considerations for specific settings (In addition to above)

1. Outpatient facilities
   - Reschedule non-urgent outpatient visits as necessary.
   - Consider reaching out to patients who may be a higher risk of COVID-19-related complications (e.g., elderly, those with medical co-morbidities, and potentially other persons who are at higher risk for complications from respiratory
diseases, such as pregnant women) to ensure adherence to current medications and therapeutic regimens, confirm they have sufficient medication refills, and provide instructions to notify their provider by phone if they become ill.

- Consider accelerating the timing of high priority screening and intervention needs for the short-term, in anticipation of the possible need to manage an influx of COVID-19 patients in the weeks to come.
- Symptomatic patients who need to be seen in a clinical setting should be asked to call before they leave home, so staff are ready to receive them using appropriate infection control practices and personal protective equipment.
- Eliminate patient penalties for cancellations and missed appointments related to respiratory illness.

2. Inpatient facilities
   - Reschedule elective surgeries as necessary.
   - Shift elective urgent inpatient diagnostic and surgical procedures to outpatient settings, when feasible.
   - Limit visitors to COVID-19 patients.
   - Plan for a surge of critically ill patients and identify additional space to care for these patients. Include options for:
     - Using alternate and separate spaces in the ER, ICUs, and other patient care areas to manage known or suspected COVID-19 patients.
     - Separating known or suspected COVID-19 patients from other patients (“cohorting”).
     - Identifying dedicated staff to care for COVID-19 patients.

3. Long term care facilities
   - Limit visitors to the facility.
   - Post visual alerts (signs, posters) at entrances and in strategic places providing instruction on hand hygiene, respiratory hygiene, and cough etiquette.
   - Ensure supplies are available (tissues, waste receptacles, alcohol-based hand sanitizer).
   - Take steps to prevent known or suspected COVID-19 patients from exposing other patients.
   - Limit the movement of COVID-19 patients (e.g., have them remain in their room).
   - Identify dedicated staff to care for COVID-19 patients.
   - Observe newly arriving patients/residents for development of respiratory symptoms.

Shifting Healthcare Delivery Modes during a COVID-19 Outbreak in the United States

Several major impacts can be anticipated during a severe outbreak that could affect the operations of healthcare facilities. These include surges in patients seeking care, the potential for workforce absenteeism from personal or family illness, and effects from social distancing measures such as school closures. Healthcare facilities will likely need to adjust the way they triage, assess and care for patients using methods that do not rely on face-to-face care.

Shifting practices to triaging and assessing ill patients (including those affected by COVID-19 and patients with other conditions) remotely using nurse advice lines, provider “visits” by telephone, text monitoring system, video conference, or other telehealth and telemedicine methods can reduce exposure of ill persons with staff and minimize surge on facilities. Many clinics and medical offices already use these methods to triage and manage patients after hours and as part of usual practices. Recent reports suggest that approximately 80% of COVID-19 patients (of all ages) have experienced mild illness[i]. Managing persons at home who are ill with mild disease can reduce the strain on healthcare systems—however, these patients will need careful triage and monitoring.

Promoting the increased use of telehealth

- Healthcare facilities can increase the use of telephone management and other remote methods of triaging, assessing and caring for all patients to decrease the volume of persons seeking care in facilities.
- If a formal “telehealth” system is not available, healthcare providers can still communicate with patients by telephone (instead of visits), reducing the number of those who seek face-to-face care.
- Health plans, healthcare systems and insurers/payors should message beneficiaries to promote the availability of covered telehealth, telemedicine, or nurse advice line services.
Shifting the way that healthcare is delivered during a COVID-19 outbreak response will be complex. Thorough and consistent communications between all components of the public health and healthcare system will be needed in every community. For example, providers in medical offices, clinics, and other outpatient settings must be informed and know their roles. Pre-hospital care by emergency management services (EMS) and public-safety answering points (PSAPs) will also need to be aware of any altered transport guidance so they can conduct in-home assessments and triage per local guidance.

Reference:

# Understanding the Difference

<table>
<thead>
<tr>
<th></th>
<th>Surgical Mask</th>
<th>N95 Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Testing and Approval</strong></td>
<td>Cleared by the U.S. Food and Drug Administration (FDA)</td>
<td>Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84</td>
</tr>
<tr>
<td><strong>Intended Use and Purpose</strong></td>
<td>Fluid resistant and provides the wearer protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer’s respiratory emissions.</td>
<td>Reduces wearer’s exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).</td>
</tr>
<tr>
<td><strong>Face Seal Fit</strong></td>
<td>Loose-fitting</td>
<td>Tight-fitting</td>
</tr>
<tr>
<td><strong>Fit Testing Requirement</strong></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>User Seal Check Requirement</strong></td>
<td>No</td>
<td>Yes. Required each time the respirator is donned (put on)</td>
</tr>
<tr>
<td><strong>Filtration</strong></td>
<td>Does NOT provide the wearer with a reliable level of protection from inhaling smaller airborne particles and is not considered respiratory protection</td>
<td>Filters out at least 95% of airborne particles including large and small particles</td>
</tr>
<tr>
<td><strong>Leakage</strong></td>
<td>Leakage occurs around the edge of the mask when user inhales</td>
<td>When properly fitted and donned, minimal leakage occurs around edges of the respirator when user inhales</td>
</tr>
<tr>
<td><strong>Use Limitations</strong></td>
<td>Disposable. Discard after each patient encounter.</td>
<td>Ideally should be discarded after each patient encounter and after aerosol-generating procedures. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients.</td>
</tr>
</tbody>
</table>
OSHA INFOSHEET

Respirator Medical Evaluation Questionnaire

Respirators must be used in workplaces in which employees are exposed to hazardous airborne contaminants. When respiratory protection is required employers must have a respirator protection program as specified in OSHA's Respiratory Protection standard (29 CFR 1910.134). Before wearing a respirator, workers must first be medically evaluated using the mandatory medical questionnaire or an equivalent method. To facilitate these medical evaluations, this INFOSHEET includes the mandatory medical questionnaire to be used for these evaluations.

Medical Evaluation and Questionnaire Requirements

The requirements of the medical evaluation and for using the questionnaire are provided below:

• The employer must identify a physician or other licensed health care professional (PLHCP) to perform all medical evaluations using the medical questionnaire in Appendix C of the Respiratory Protection standard or a medical examination that obtains the same information. (See Paragraph (e)(2)(i).)

• The medical evaluation must obtain the information requested in Sections 1 and 2, Part A of Appendix C. The questions in Part B of Appendix C may be added at the discretion of the health care professional. (See Paragraph (e)(2)(ii).)

• The employer must ensure that a follow-up medical examination is provided for any employee who gives a positive response to any question among questions 1 through 8 in Part A Section 2, of Appendix C, or whose initial medical examination demonstrates the need for a follow-up medical examination. The employer must provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP. (See Paragraph (e)(3)(i).)

• The medical questionnaire and examinations must be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee and in a manner that ensures that he or she understands its content. The employer must not review the employee's responses, and the questionnaire must be provided directly to the PLHCP. (See Paragraph (e)(4)(i).)

Excerpt from Appendix C of 29 CFR 1910.134:
OSHA Respirator Medical Evaluation Questionnaire

To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.

To the employee: Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

Once filled out, this form must be given to the PLHCP. This form should not be submitted to OSHA.
Part A Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today's date:
2. Your name:
3. Your age (to nearest year):
4. Sex (circle one): Male/Female
5. Your height: \( \text{ft.} \) \( \text{in.} \)
6. Your weight: \( \text{lbs.} \)
7. Your job title:

8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code):

9. The best time to phone you at this number:

10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one): Yes/No

11. Check the type of respirator you will use (you can check more than one category):
   a. ___ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
   b. ___ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No  If "yes," what type(s):

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Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle “yes” or “no”).

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you currently smoke tobacco, or have you smoked tobacco in the last month?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have you ever had any of the following conditions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Seizures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Diabetes (sugar disease)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Allergic reactions that interfere with your breathing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Claustrophobia (fear of closed-in places)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Trouble smelling odors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Have you ever had any of the following pulmonary or lung problems?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Asbestosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Asthma</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
c. Chronic bronchitis

d. Emphysema

e. Pneumonia

f. Tuberculosis

g. Silicosis

h. Pneumothorax (collapsed lung)
i. Lung cancer

j. Broken ribs

k. Any chest injuries or surgeries

l. Any other lung problem that you've been told about

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

a. Shortness of breath

b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline

c. Shortness of breath when walking with other people at an ordinary pace on level ground

d. Have to stop for breath when walking at your own pace on level ground

e. Shortness of breath when washing or dressing yourself

f. Shortness of breath that interferes with your job

g. Coughing that produces phlegm (thick sputum)

h. Coughing that wakes you early in the morning

i. Coughing that occurs mostly when you are lying down

j. Coughing up blood in the last month

k. Wheezing

l. Wheezing that interferes with your job

m. Chest pain when you breathe deeply

n. Any other symptoms that you think may be related to lung problems

5. Have you ever had any of the following cardiovascular or heart problems?

a. Heart attack

b. Stroke

c. Angina

d. Heart failure
6. Have you ever had any of the following cardiovascular or heart symptoms?
   a. Frequent pain or tightness in your chest
   b. Pain or tightness in your chest during physical activity
   c. Pain or tightness in your chest that interferes with your job
   d. In the past two years, have you noticed your heart skipping or missing a beat
   e. Heartburn or indigestion that is not related to eating
   f. Any other symptoms that you think may be related to heart or circulation problems

7. Do you currently take medication for any of the following problems?
   a. Breathing or lung problems
   b. Heart trouble
   c. Blood pressure
   d. Seizures

8. If you've used a respirator, have you ever had any of the following problems?
   (If you've never used a respirator, check the following space and go to question 9.)
   a. Eye irritation
   b. Skin allergies or rashes
   c. Anxiety
   d. General weakness or fatigue
   e. Any other problem that interferes with your use of a respirator

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire?

Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.

10. Have you ever lost vision in either eye (temporarily or permanently)?

11. Do you currently have any of the following vision problems?
   a. Wear contact lenses
   b. Wear glasses
   c. Color blind
   d. Any other eye or vision problem
<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>12.</td>
<td>Have you <em>ever had</em> an injury to your ears, including a broken eardrum?</td>
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<tr>
<td>13.</td>
<td>Do you <em>currently</em> have any of the following hearing problems?</td>
</tr>
<tr>
<td>a.</td>
<td>Difficulty hearing</td>
</tr>
<tr>
<td>b.</td>
<td>Wear a hearing aid</td>
</tr>
<tr>
<td>c.</td>
<td>Any other hearing or ear problem</td>
</tr>
<tr>
<td>14.</td>
<td>Have you <em>ever had</em> a back injury?</td>
</tr>
<tr>
<td>15.</td>
<td>Do you <em>currently</em> have any of the following musculoskeletal problems?</td>
</tr>
<tr>
<td>a.</td>
<td>Weakness in any of your arms, hands, legs, or feet</td>
</tr>
<tr>
<td>b.</td>
<td>Back pain</td>
</tr>
<tr>
<td>c.</td>
<td>Difficulty fully moving your arms and legs</td>
</tr>
<tr>
<td>d.</td>
<td>Pain and stiffness when you lean forward or backward at the waist</td>
</tr>
<tr>
<td>e.</td>
<td>Difficulty fully moving your head up or down</td>
</tr>
<tr>
<td>f.</td>
<td>Difficulty fully moving your head side to side</td>
</tr>
<tr>
<td>g.</td>
<td>Difficulty bending at your knees</td>
</tr>
<tr>
<td>h.</td>
<td>Difficulty squatting to the ground</td>
</tr>
<tr>
<td>i.</td>
<td>Climbing a flight of stairs or a ladder carrying more than 25 lbs.</td>
</tr>
<tr>
<td>j.</td>
<td>Any other muscle or skeletal problem that interferes with using a respirator</td>
</tr>
</tbody>
</table>

This infosheet does not include the questions in Part B because they are not mandatory; rather, they may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.

**OSHA Educational Materials**
OSHA has an extensive publications program. For a listing of free items, visit OSHA's web site at www.osha.gov/publications or contact the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., N-3101, Washington, DC 20210. Telephone (202) 693-1888 or fax to (202) 693-2498.

**Contacting OSHA**
To report an emergency, file a complaint or seek OSHA advice, assistance or products, call (800) 321-OSHA (6742) or contact your nearest OSHA regional, area, or State Plan office; TTY: 1-877-889-5627.

This InfoSheet is not a standard or regulation, and it creates no new legal obligations. It contains recommendations as well as descriptions of mandatory safety and health standards. The recommendations are advisory in nature, informational in content, and are intended to assist employers in providing a safe and healthful workplace. The *Occupational Safety and Health Act* requires employers to comply with safety and health standards and regulations promulgated by OSHA or by a state with an OSHA-approved state plan. In addition, the Act’s General Duty Clause, Section 5(a)(1), requires employers to provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.
Strategies for Optimizing the Supply of N95 Respirators offers a series of strategies or options on how healthcare facilities can optimize supplies of disposable N95 filtering facepiece respirators when there is limited supply availability. This checklist is intended to help healthcare facilities prioritize the implementation of the strategies following the prioritization used in the concept of surge capacity. The following strategies are categorized in a continuum of care and further organized according to the hierarchy of controls, as defined below.

**Conventional Capacity Strategies consist of providing patient care without any change in daily practices**

**Engineering Controls reduce exposures for healthcare personnel (HCP) by placing a barrier between the hazard and the HCP.**
- Isolate patients in an airborne infection isolation room (AIIR)
- Use physical barriers such as glass or plastic windows at reception areas, curtains between patients, etc.
- Properly maintain ventilation systems to provide air movement from a clean to contaminated flow direction

**Administrative Controls refer to employer-dictated work practices and policies that reduce or prevent hazardous exposures.**
- Limit the number of patients going to hospitals or outpatient settings by screening patients for acute respiratory illness prior to non-urgent care or elective visits
- Exclude all HCP not directly involved in patient care (e.g., dietary, housekeeping employees)
- Reduce face-to-face HCP encounters with patients (e.g., bundling activities, use of video monitoring)
- Exclude visitors to patients with known or suspected COVID-19
- Implement source control: Identify and assess patients who may be ill with or who may have been exposed to a patient with known COVID-19 and recommend they use facemasks until they can be placed in an AIIR or private room.
- Cohort patients: Group together patients who are infected with the same organism to confine their care to one area
- Cohort HCP: Assign designated teams of HCP to provide care for all patients with suspected or confirmed COVID-19
- Use telemedicine to screen and manage patients using technologies and referral networks to reduce the influx of patients to healthcare facilities

*continue on next page*
Train HCP on indications for use of N95 respirators

Train HCP on use of N95 respirators (i.e., proper use, fit, donning and doffing, etc.)

Implement just-in-time fit testing: Plan for larger scale evaluation, training, and fit testing of employees when necessary during a pandemic

Limit respirators during training: Determine which HCP do and do not need to be in a respiratory protection program and, when possible, allow limited re-use of respirators by individual HCP for training and then fit testing

Implement qualitative fit testing to assess adequacy of a respirator fit to minimize destruction of N95 respirator used in fit testing and allow for limited re-use by HCP

Use surgical N95 respirators only for HCP who need protection from both airborne and fluid hazards (e.g., splashes, sprays). If needed but unavailable, use faceshield over standard N95 respirator.

Use alternatives to N95 respirators where feasible (e.g., other disposable filtering facepiece respirators, elastomeric respirators with appropriate filters or cartridges, powered air purifying respirators)

Personal Protective Equipment and Respiratory Protection should be used as part of a suite of strategies to protect personnel, complementing the use of engineering and administrative controls as needed.

Contingency Capacity Strategies may change practices but may not have a significant impact on patient care or HCP safety

Administrative Controls

Decrease length of hospital stay for medically stable patients with COVID-19 who cannot be discharged to home for social reasons by identifying alternative non-hospital housing

Personal Protective Equipment and Respiratory Protection

Use N95 respirators beyond the manufacturer-designated shelf life for training and fit testing

Extend the use of N95 respirators by wearing the same N95 for repeated close contact encounters with several different patients, without removing the respirator (i.e., recommended guidance on implementation of extended use)

Implement re-use of N95 respirators by one HCP for multiple encounters with different tuberculosis patients, but remove it after each encounter
Crisis/Alternate Strategies are not commensurate with current U.S. standards of care but may need to be considered during periods of expected or known N95 respirator shortages.

### When N95 Supplies are Running Low

**Personal Protective Equipment and Respiratory Protection**

- Use respirators as identified by CDC as performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
- Use respirators approved under standards used in other countries that are similar to NIOSH-approved N95 respirators but that may not necessarily be NIOSH-approved
- Implement limited re-use of N95 respirators for patients with COVID-19, measles, and varicella
- Use additional respirators identified by CDC as NOT performing adequately for healthcare delivery beyond the manufacturer-designated shelf life
- **Prioritize the use of N95 respirators and facemasks by activity type** with and without masking symptomatic patients

### When No Respirators Are Left

**Administrative Controls**

- Exclude HCP at higher risk for severe illness from COVID-19 from contact with known or suspected COVID-19 patients (i.e., those of older age, those with chronic medical conditions, or those who may be pregnant)
- Designate convalescent HCP for provision of care to known or suspected COVID-19 patients those who have clinically recovered from COVID-19 and may have some protective immunity to preferentially provide care

**Engineering Controls**

- Use an expedient patient isolation room for risk-reduction
- Use a ventilated headboard to decrease risk of HCP exposure to a patient-generated aerosol
- Personal Protective Equipment and Respiratory Protection
- Use masks not evaluated or approved by NIOSH or homemade masks as a last resort

www.cdc.gov/COVID19
NIOSH-Approved Particulate Filtering Facepiece Respirators


This site provides a listing of NIOSH-approved particulate filtering facepiece respirators. This type of air-purifying respirators protects by filtering particles out of the air the user is breathing. There are seven classes of filters for NIOSH-approved filtering facepiece respirators available at this time. Ninety-five percent is the minimal level of filtration that will be approved by NIOSH. The N, R, and P designations refer to the filter's oil resistance as described below.

Select a type of respirator to see all approved models:

**N95** – Filters at least 95% of airborne particles. Not resistant to oil.
(N95 Manufacturers Index: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z)

**Surgical N95** – A NIOSH-approved N95 respirator that has also been cleared by the Food and Drug Administration (FDA) as a surgical mask.

**N99** – Filters at least 99% of airborne particles. Not resistant to oil.

**N100** – Filters at least 99.97% of airborne particles. Not resistant to oil.

**R95** – Filters at least 95% of airborne particles. Somewhat resistant to oil.

**P95** – Filters at least 95% of airborne particles. Strongly resistant to oil.

**P99** – Filters at least 99% of airborne particles. Strongly resistant to oil.

**P100** – Filters at least 99.97% of airborne particles. Strongly resistant to oil.

The NIOSH-approved products are listed by brand. Links to the manufacturers' websites are provided as a courtesy to users and NIOSH is not responsible for the content of those pages. Also included is the manufacturer's phone number, product model number, approval number (84A-XXXX), an indication if the product has an exhalation valve, and the user donning instructions. The manufacturer's donning procedure and/or user instructions are also provided here as a courtesy to the user.

Manufacturers' recommended procedures for performing a user seal check can be included in the donning procedures and/or user instructions as alternatives to the OSHA-specified procedures under the respiratory protection standard (See 29 CFR 1910.134 Appendix B-1). NIOSH does not evaluate the efficacy and reliability of any user seal check procedures, but
OSHA will accept the manufacturer’s recommended procedures if the employer demonstrates those procedures are equally effective as those identified in the standard.

Each manufacturer is responsible for updating the links on their website and/or providing NIOSH with an updated or revised copy when changes are made.

The tables were created to provide easy access to a comprehensive listing of NIOSH-approved particulate filtering facepiece respirators and also to provide easy access to the donning process/user instructions. The tables are not updated as frequently as the certified equipment list, which is the official NIOSH certification record.

Searching for a Product Using the Certified Equipment List

If you have a product that is not listed on the provided tables use the searchable certified equipment list.

Follow these steps to search for NIOSH-approved disposable particulate respirators:

1. In For Protections Against section, select N95, N99, N100, R95, P95, or P100.
2. In Facepiece Type section, select only Filtering Facepiece.
3. Select View Results.

If your product is not listed, you should scroll through the list of “Private Label” products.

Filtering Facepiece Respirator (FFR) Labels

Individual filtering facepiece respirators are required to have the following markings:

1. Name of approval holder/manufacturer business name, a registered trademark, or an easily understood abbreviation of the applicant/approval holder's business name as recognized by NIOSH. When applicable, the name of the entity to which the FFR has been private labeled by the approval holder may replace the approval holder business name, registered trademark, or abbreviation of the approval holder business name as recognized by NIOSH.
2. NIOSH in block letters or the NIOSH logo.
3. NIOSH Testing and Certification approval number, e.g., TC-84A-XXXX.
4. NIOSH filter series and filter efficiency level, e.g., N95, N99, N100, R95, P95, P99, P100.
5. Model number or part number: The approval holder's respirator model number or part number, represented by a series of numbers or alphanumeric markings, e.g., 8577 or 8577A.

NIOSH recommends the lot number and/or date of manufacture also be included, however, this is not required.

Sample of a generic filtering facepiece respirator with appropriate markings.
Filtering facepiece respirators that are private labeled are required to have the following statement on the packaging as a special caution and limitation statement identified on the full label and located in the respirator user instructions:

- Marketed by xxxxxx (the private label company name).
- Produced by xxxxxx (the approval holder company name).

This private label related statement does not need to appear on the exterior surface of the respirator as part of the required name marking.