The New York Times

Answers To Your Coronavirus Questions

SYMPTOMS, SOCIAL DISTANCING AND MORE

REPORTING FROM THE NEW YORK TIMES

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Introduction

The New York Times has hundreds of reporters and editors working around the clock and on multiple continents to understand and explain the coronavirus outbreak and its effects. In this book, we have collected more than two dozen pieces of journalism that we hope will be helpful as you and your family navigate this highly fluid situation. For the latest information, go to nytimes.com/coronavirus or connect with us on our social media channels. And let us know what other questions we can answer.

CAROLINE QUE, THE NEW YORK TIMES | MARCH 17, 2020

PART 1

The Basics

A Timeline of the Coronavirus

The outbreak of the virus, which began in Wuhan, China, has left tens of thousands sickened and thousands of people dead. Officials have declared it a pandemic. **BY DERRICK BRYSON TAYLOR**

THE CORONAVIRUS SURFACED in a Chinese seafood and poultry market in late 2019. Here's a timeline of the outbreak so far.

DEC. 31, 2019

Chinese authorities treated dozens of cases of pneumonia of unknown cause.

On Dec. 31, the government in Wuhan, China, confirmed that health authorities were treating dozens of cases. Days later, researchers in China identified a new virus that had infected dozens of people in Asia. At the time, there was no evidence that the virus was readily spread by humans. Health officials in China said they were monitoring it to prevent the outbreak from developing into something more severe.

JAN. 11, 2020

China reported its first death.

On Jan. 11, Chinese state media reported the first known death from an illness caused by the virus, which had infected dozens of people. The 61-year-old man who died was a regular customer at the market in Wuhan, where the illness is believed

to have originated, and he had previously been found to have abdominal tumors and chronic liver disease. The report of his death came just before one of China's biggest holidays, when hundreds of millions of people travel across the country.

JAN. 20

Other countries, including the United States, confirmed cases.

The first confirmed cases outside mainland China occurred in Japan, South Korea and Thailand, according to the World Health Organization's first situation report. The first confirmed case in the United States came the next day in Washington State, where a man in his 30s developed symptoms after returning from a trip to Wuhan.

JAN. 23

Wuhan, a city of more than 11 million, was cut off by Chinese authorities.

The Chinese authorities closed off Wuhan by canceling planes and trains leaving the city, and suspending buses, subways and ferries within it. At this point, at least 17 people had died and more than 570 others had been infected, including in Taiwan, Japan, Thailand, South Korea and the United States.

JAN. 30

The W.H.O. declared a global health emergency.

Amid thousands of new cases in China, a "public health emergency of international concern" was officially declared by the W.H.O. China's Foreign Ministry spokeswoman said that it would continue to work with the W.H.O. and other countries to

protect public health, and the U.S. State Department warned travelers to avoid China.

JAN. 31

The Trump administration restricted travel from China.

The Trump administration said it would suspend entry into the United States by any foreign nationals who had traveled to China in the past 14 days, excluding the immediate family members of American citizens or permanent residents. By this date, 213 people had died and nearly 9,800 had been infected worldwide.

FEB. 2

The first coronavirus death was reported outside China.

A 44-year-old man in the Philippines died after being infected, officials said, the first death reported outside China. By this point, more than 360 people had died.

FEB. 5

A cruise ship in Japan quarantined thousands.

After a two-week trip to Southeast Asia, more than 3,600 passengers began a quarantine aboard the Diamond Princess cruise ship in Yokohama, Japan. Officials started screening passengers, and the number of people who tested positive became the largest number of coronavirus cases outside China. By Feb. 13, the number stood at 218.

FEB. 7

A Chinese doctor who tried to raise the alarm died.

When Dr. Li Wenliang, a Chinese doctor, died on Feb. 7 after

contracting the coronavirus, he was hailed as a hero by many for trying to ring early alarms that a cluster of infections could spin out of control.

In early January, the authorities reprimanded him, and he was forced to sign a statement denouncing his warning as an unfounded and illegal rumor. Dr. Li's death provoked anger and frustration at how the Chinese government mishandled the situation by not sharing information earlier and silencing whistle-blowers.

FEB. 10

The death toll in China surpassed the number SARS killed worldwide.

The death toll in China rose to 908, surpassing the global number of people who died from the SARS epidemic in 2002-3, which killed 774. At this point, the number of confirmed cases of infection in the country had risen to 40,171.

FEB. 13

There were more than 14,000 new cases in Hubei Province.

Officials added more than 14,840 new cases to the total number of infected in Hubei Province, and the ruling Communist Party ousted top officials there. The new cases set a daily record, coming after officials in Hubei seemed to be including infections that were diagnosed by using lung scans of symptomatic patients.

FEB. 14

France announces the first coronavirus death in Europe.

An 80-year-old Chinese tourist died on Feb. 14 at a hospital in

Paris, in what was the first coronavirus death outside Asia, the authorities said. The health minister of France, Agnès Buzyn, said the man, who was from Hubei Province, the center of the outbreak, had arrived in France in mid-January and "his condition had quickly worsened." It was the fourth death from the virus outside mainland China, where about 1,500 people had died, most of them in Hubei.

FEB. 17

Chinese officials draft legislation to curb the practice of eating wildlife.

China said it was reviewing its trade and consumption of wildlife, which has been identified as a probable source of the outbreak. Officials drafted legislation that aims to end "the pernicious habit of eating wildlife," a statement from the Standing Committee of the Congress said.

FEB. 19

Hundreds leave the quarantined cruise ship.

After a two-week quarantine, 443 passengers began leaving the Diamond Princess cruise ship. It was the first day of a three-day operation to offload people who tested negative for the virus and did not have symptoms. Passengers who shared cabins with infected patients remained on the ship. A total of 621 people aboard the ship were infected.

FEB. 21

A secretive church is linked to an outbreak in South Korea.

Shincheonji Church of Jesus, a secretive church in South Korea

was linked to a surge of infections in the country. The number of confirmed cases in the country rose above 200, and more than 400 other church members reported potential symptoms, health officials said.

As a result, the government shut down thousands of kindergartens, nursing homes and community centers, and put a stop to political rallies in the capital, Seoul.

FEB. 21

The virus appears in Iran from an unknown source.

On Feb. 19, Iran announced two coronavirus cases in the country, then hours later said that both patients had died. Two days later, Iran announced two additional deaths. The source of the virus in Iran is unknown. By Feb. 20, the number of global cases had risen to nearly 76,000, according to the W.H.O.

FEB. 23

Italy sees major surge in coronavirus cases and officials lock down towns.

Europe faced its first major outbreak as the number of reported cases in Italy grew from fewer than five to more than 150. In the Lombardy region, officials locked down 10 towns after a cluster of cases suddenly emerged in Codogno, southeast of Milan. As a result, schools closed and sporting and cultural events were canceled.

FEB. 24

The Trump administration asks Congress for $1.25 billion for coronavirus response.

As the number of coronavirus cases around the globe continued

to climb, the Trump administration began preparing for the virus to arrive in the United States. The White House asked Congress to allocate $1.25 billion in new emergency funds to bolster its preparedness — a significant escalation in the administration's response. At this point the United States, where Centers for Disease Control and Prevention officials warned of an almost certain outbreak, had 35 confirmed cases and no deaths.

FEB. 24

Iran emerges as a second focus point of the virus.

Iran said it had 61 coronavirus cases and 12 deaths, more than any other country but China, and public health experts warned that Iran was a cause for worry — its borders are crossed each year by millions of religious pilgrims, migrant workers and others. Cases in Iraq, Afghanistan, Bahrain, Kuwait, Oman, Lebanon, the United Arab Emirates and one in Canada, have been traced back to Iran.

FEB. 26

Latin America reports its first coronavirus case.

Brazilian health officials said that a 61-year-old São Paulo man, who had returned recently from a business trip to Italy, tested positive for the coronavirus. It was the first known case in Latin America. Officials also began tracking down other passengers on the flight the man took to Brazil and others who had contact with him in recent days.

FEB. 28

The number of infections in Europe spike.

Italy, where 800 people had been infected by Feb. 28, remained

an area of concern. Cases in 14 other countries, including Northern Ireland and Wales, could be traced back to Italy. Germany had nearly 60 cases by Feb. 27, and France reported 57, more than triple the number from two days earlier. Both England and Switzerland reported additional cases, while Belarus, Estonia and Lithuania all reported their first infections.

FEB. 28

Sub-Saharan Africa records its first infection.

Nigeria, Africa's most populous nation, confirmed its first case of coronavirus on Feb. 28. The patient was an Italian citizen who had returned to Lagos from Milan.

FEB. 29

The United States records its first coronavirus death and announces travel restrictions.

A patient near Seattle became the first coronavirus patient to die in the United States on Feb. 28. As the number of global cases rose to nearly 87,000, the Trump administration issued its highest-level warning, known as a "do not travel" warning, for areas in Italy and South Korea most affected by the virus. The government also banned all travel to Iran and barred entry to any foreign citizen who had visited Iran in the previous 14 days.

MARCH 3

U.S. officials approve widespread coronavirus testing.

The C.D.C. lifted all federal restrictions on testing for the coronavirus on March 3, according to Vice President Mike Pence. The news came after the C.D.C.'s first attempt to produce a diagnostic test kit fell flat. By this point, the coronavirus had

infected more than 90,000 around the globe and killed about 3,000, according to the W.H.O.

MARCH 11

President Trump blocks most visitors from Continental Europe.

In a prime-time address from the Oval Office, Mr. Trump said he would halt travelers from European countries other than Britain for 30 days, as the World Health Organization declared the coronavirus a pandemic and stock markets plunged further.

MARCH 13

President Trump declares a national emergency.

Mr. Trump officially declared a national emergency, and said he was making $50 billion in federal funds available to states and territories to combat the coronavirus. He also said he would give hospitals and doctors more flexibility to respond to the virus, including making it easier to treat people remotely.

From Flattening the Curve to Social Distancing: A Coronavirus Glossary

Here are some of the terms and phrases you need to know to understand the virus and how it spreads. BY JENNY GROSS AND MARIEL PADILLA

WHEN IS AN EPIDEMIC considered a pandemic, and what is the difference? What do health officials mean when they recommend "self-quarantining" or "social distancing"?

As the coronavirus spreads around the world, new terms are entering the lexicon — and we're here to help. Here's a guide to the words and phrases you need to know to keep informed of the latest developments.

Pandemic

On March 11, 2020, the World Health Organization declared the coronavirus outbreak a pandemic after it spread across six continents and more than 100 countries. A pandemic is the worldwide spread of a new disease that affects large numbers of people. The W.H.O. had avoided using the word before then because it didn't want to give the impression that the disease was unstoppable.

"Pandemic is not a word to use lightly or carelessly," Dr. Tedros Adhanom Ghebreyesus, the director general of the

W.H.O., said at a news conference.

Epidemic

An epidemic is a regional outbreak of an illness that spreads unexpectedly, according to the W.H.O. The Centers for Disease Control and Prevention defines it as an increase, often sudden, in the number of cases of a disease above normal expectations in a set population.

Covid-19

The technical name for the coronavirus is SARS-CoV-2. The respiratory disease it causes has been named the "coronavirus disease 2019," or Covid-19.

Coronaviruses are named for the crown-like spikes that protrude from their surfaces, resembling the sun's corona. Coronaviruses are among a large number of viruses that are common in people and many animals. The new virus, first detected in China, is believed to have originated in bats.

While antibiotics don't work against viruses, researchers are testing drugs that could disrupt viral proteins and stop the infection.

Flattening the curve

The term refers to a curve in a chart that shows when a surge of new coronavirus cases are expected to strike and illustrates why slowing the spread of the infection is nearly as important as stopping it.

An illustration by the visual-data journalist Rosamund Pearce, based on a graphic in a C.D.C. paper titled, "Community Mitigation Guidelines to Prevent Pandemic Influenza," showed

what Drew Harris, a population health analyst at Thomas Jefferson University in Philadelphia, called two epi curves.

The high curve showed a peak indicating a wave of coronavirus outbreak in the near term; the other had a flatter slope, indicating a more gradual rate of infection over a longer period of time.

Slowing and spreading out the tidal wave of cases will save lives.

State of emergency

A state of emergency can be declared during natural disasters, epidemics and other public health emergencies. Declaring a state of emergency, as more than a dozen states — including New York, New Jersey and Michigan — have done, gives government officials the authority to take extra measures to protect the public, such as suspending regulations or reallocating funds to mitigate the spread of a disease.

Incubation

The incubation period is the time it takes for symptoms to appear after a person is infected. This time can be critical for prevention and control, and it allows health officials to quarantine or observe people who may have been exposed to the virus.

The new coronavirus has an incubation period of two to 14 days, according to the C.D.C., with symptoms appearing about five days after infection in most cases.

During the incubation period, people may shed infectious virus particles before they exhibit symptoms, making it almost impossible to identify and isolate people who have the virus.

Social distancing

The virus can easily spread in dense places — in a packed subway car, for example, or at a rally or concert.

Social distancing refers to measures that are taken to increase the physical space between people to slow the spread of the virus. Examples include working from home, school closings and the postponement or cancellation of mass gatherings, such as the South by Southwest music, technology and film conference.

By maintaining a distance of six feet from others when possible, people may limit the spread of the virus.

Self-quarantine

This is key to keeping the virus from spreading, along with measures like social distancing, frequent hand-washing and wearing masks.

While isolation refers to separating sick people from people who aren't sick, quarantine refers to the separation and restriction of movement of people who were exposed to the virus to see if they become sick.

Who should self-quarantine? If you've left an area with widespread or continuing transmission, including China, Iran, Italy and South Korea, you should self-quarantine at home for a period of 14 days from the time you left, according to the C.D.C.

While in quarantine, you shouldn't receive any visitors and must stay three to six feet from others at all times.

According to the C.D.C., once someone has been in isolation for 14 days and hasn't become ill, he or she is not considered to be a risk to other people.

Fatality rate

The case fatality rate is the number of deaths divided by the total number of confirmed cases. Eventually, scientists hope to have a more comprehensive number called the infection fatality rate, which includes everyone who was infected with the virus.

The W.H.O. estimates the fatality rate of the new coronavirus to be about 3 percent, based on current data, but experts suggest 1 percent is more realistic.

R-naught

The R-naught, or R0, is a virus's basic reproductive number — an epidemiologic metric used to describe the contagiousness of infectious agents.

At its simplest, the basic reproductive number can show us how worried we should be about infection, according to Dr. Adam Kucharski, a mathematician at the London School of Hygiene and Tropical Medicine. If the R0 is above one, each case is expected to infect at least one other person on average, and the virus is likely to keep spreading. If it's less than one, a group of infected people are less likely to spread the infection.

Research is still in its early stages, but some estimates suggest that each person with the new coronavirus could infect between two and four people.

Containment

The virus's high transmission rate has made it difficult to effectively contain the outbreak. Containment refers to the use of any available tools to mitigate the spread of a disease, said Adam Ratner, the director of the division of pediatric infectious

diseases at NYU Langone Health.

Early on, the Trump administration sought to slow the spread of the virus by barring entry into the United States by any foreign nationals who had traveled to China in the previous 14 days, excluding the immediate family members of American citizens or permanent residents. While that measure may have bought the government time to prepare, the administration made key missteps in its efforts to make widespread testing available in the early days of the outbreak, when containment would have been easier.

Dr. Ratner says the coronavirus is particularly hard to contain because it is "reasonably transmissible," and some people who don't have a lot of symptoms can still pass the virus to others. "That's been part of the problem," he said, "but it also points to the fact to how interconnected we all are and how quickly this thing spread from Asia to the rest of the world."

How to Prepare for the Coronavirus

Coronavirus cases continue to be confirmed. By following some basic steps, you can help reduce your risk, and do your part to protect others, if your community is affected.

THE CORONAVIRUS CONTINUES to spread worldwide, which means it's time to prepare your home and family in case your community is affected.

Most important: Do not panic. While the outbreak is a serious public health concern, the majority of those who contract the coronavirus do not become seriously ill, and only a small percentage require intensive care.

By following some basic steps, you can help reduce your risk and do your part to protect others.

Keep your hands clean, and keep your distance from sick people.

It's worth repeating, over and over again: Wash your hands. Wet your hands with clean running water and then lather them with soap; don't miss the backs of your hands, between your fingers or under your nails. Make sure to scrub for at least 20 seconds (or about the time it takes to sing "Happy Birthday" twice), and dry them with a clean towel or let them air dry.

Alcohol-based hand sanitizers, which should be rubbed in

for about 20 seconds, can also work, but the gel must contain at least 60 percent alcohol.

The Centers for Disease Control and Prevention recommends you avoid touching your eyes, nose and mouth with unwashed hands (tough one, we know).

Meanwhile, if someone else is showing flu- or cold-like symptoms, try to stay six feet away. If that's not possible, even a little distancing is helpful, according to experts, as the virus seems to spread through droplets in the air from a cough or sneeze.

Sneezing or coughing yourself? Direct it into your elbow so as to avoid leaving germs on your hands, which can then quickly spread to other surfaces. Other ways to be smart include using the "Ebola handshake," where you greet others with elbow bumps, and pushing elevator buttons with a knuckle instead of a fingertip.

Stay home if you are sick.

Coronavirus starts deep in the lungs, and the most common signs are fever and dry cough, followed by fatigue and shortness of breath. If you have any of these symptoms, please make every effort to remain at home. Don't go to the office; don't drive the kids to school; don't go to the store; don't ride public transportation. If children exhibit any illness, they too should remain home from school.

Contact your employer and inform them of your illness and figure out how to best manage your job from home.

If you begin to have a high fever, shortness of breath or any other more serious symptom, the best thing to do is to call your doctor to let them know and inquire about next steps.

(Testing for coronavirus is inconsistent right now — there are not enough testing kits, and it's dangerous for people with coronavirus to go into a doctor's office and risk infecting others. So please follow your doctor's instructions.) Check the C.D.C. website and your local health department for advice about how and where to be tested.

Unless you are already infected, face masks won't help. Face masks have become almost synonymous with the coronavirus outbreak overseas, but they don't do much to protect you — most surgical masks are too loose to prevent inhalation of the virus.

The C.D.C. and infectious disease specialists do not recommend face masks if you're healthy.

But if you're a health-care worker or are caring for sick people at home or in a health-care facility, you should wear one.

If you're infected, masks can help prevent the spread of a virus. The most effective are the so-called N95 masks, which block 95 percent of very small particles.

In late February 2020, the surgeon general urged the public to stop stockpiling masks, warning that it won't help against the spread of the coronavirus but will take away important resources from health care professionals.

Stock up on home supplies, medicine and resources. Experts suggest stocking at least a 30-day supply of any needed prescriptions, and you should consider doing the same for household items like food staples, laundry detergent, and diapers, if you have small children.

Remember, alcohol is a good disinfectant for coronaviruses

so make sure to keep surfaces in your home clean. Throw out those tissues in a wastebasket after you blow your nose.

The C.D.C. also recommends cleaning "high touch" surfaces, like phones and tablets.

Beyond physical items, prepare your home for a potential outbreak in the United States by staying up-to-date with reliable news resources, such as the website of your local health department.

Prepare your family, and communicate your plan.

Make sure every member of the family is up-to-date on any and all emergency plans.

Be sure to be in communication with your child's school on what types of plans are established for any sort of schedule change, including early dismissals or online instruction. And if you have elderly parents or relatives, or family members with any special health concerns, make sure you have a plan for caring for them if they get sick.

There's also some reassurance that could be had by creating a family emergency checklist, which could answer basic questions about evacuations, resources and supplies — especially if you have any preconditions or illnesses. The C.D.C. provides a checklist on its website.

With children, keep calm and carry on — and get the flu shot.

Protect your child by taking the same precautions you would during cold and flu season: encourage frequent hand washing, move away from people who are coughing or sneezing and get the flu shot.

Experts recommend getting the flu vaccine, noting that vaccinating children is the best protection for older people against bacterial pneumonia.

Right now, there's no reason for parents to worry, the experts say, and the good news is that coronavirus cases in children have been very rare.

When talking to your children about an outbreak, make sure you first assess their knowledge of the virus and that you process your own anxiety. It's important that you don't dismiss their fears and speak to them at an age-appropriate level.

So keep calm, and if there's an outbreak in your community, practice what's known as "social distancing," which means more TV bingeing at home and fewer trips to the park.

Concerned about the stock market? Take a deep breath.

Despite financial markets on a roller coaster, The Times's financial columnist Ron Lieber says there's little reason to be alarmed long-term. After all, "stocks are how your savings fight inflation, the market is not an absolute proxy for your personal finances, and you're playing a long game."

"Stocks have delivered decent gains over long periods of time to people who persist, and successful investors do not buy when prices are high and sell when they are low," he said.

"Nothing that is happening today changes that."

Coronavirus Is Very Different From the Spanish Flu of 1918. Here's How.

The fear is similar, but the medical reality is not.

BY GINA KOLATA

IT WAS A disease so awful that it terrified people for generations.

The 1918 flu pandemic, thought to be the deadliest in human history, killed at least 50 million people worldwide (the equivalent of 200 million today), with half a million of those in the United States. It spread to every part of the world, affecting populations in Japan, Argentina, Germany and dozens of other countries.

Maybe most alarmingly, a majority of those killed by the disease were in the prime of life — often in their 20s, 30s and 40s — rather than older people weakened by other medical conditions.

As the coronavirus spreads around the world and public anxieties spike, comparisons between today's situation and the Spanish flu pandemic of 1918 are proliferating in journalistic outlets and on social media.

While the fearful atmosphere — surgical masks, stockpiling of food and avoidance of public gatherings — and potential economic ramifications are like those of 1918, the medical reality is quite different.

"Nurses often walked into scenes resembling those of the plague years of the fourteenth century," wrote the historian Alfred W. Crosby in "America's Forgotten Pandemic." "One nurse found a husband dead in the same room where his wife lay with newly born twins. It had been twenty-four hours since the death and the births, and the wife had had no food but an apple which happened to lie within reach."

In 1918, the world was a very different place, even without the disruptive influence of World War I. Doctors knew viruses existed but had never seen one — there were no electron microscopes, and the genetic material of viruses had not yet been discovered. Today, however, researchers not only know how to isolate a virus but can find its genetic sequence, test antiviral drugs and develop a vaccine.

In 1918, it was impossible to test people with mild symptoms so they could self-quarantine. And it was nearly impossible to do contact tracing because the flu seemed to infect — and panic — entire cities and communities all at once. Moreover, there was little protective equipment for health care workers, and the supportive care with respirators that can be provided to people very ill with coronavirus did not exist.

With a case fatality rate of at least 2.5 percent, the 1918 flu was far more deadly than ordinary flu, and it was so infectious that it spread widely, which meant the number of deaths soared.

Researchers believe the 1918 flu spared older people because they had some immunity to it. They theorize that decades earlier there had been a version of that virus, one that was not as lethal and spread like an ordinary flu. The older people living in 1918 would have been exposed to that less

lethal flu and developed antibodies. As for children, most viral illnesses — measles, chickenpox — are more deadly in young adults, which may explain why the youngest were spared in the 1918 epidemic.

Regardless of the reason, it was a disaster for life expectancy, which plummeted. In 1917, life expectancy in the United States was 51 years. It was the same in 1919. But in 1918, it was just 39 years.

The new coronavirus tends to kill older people and those with underlying medical conditions, and it does not seem to kill children. All of which means it will have far less effect, if any, on life expectancy.

As for the coronavirus case fatality rate, it is not yet known.

What the current situation does have in common with 1918, though, is the tenor of public concern.

Among the first places the 1918 flu arrived in the United States was Fort Devens, near Boston. So many young soldiers were sick, and so many were dying, that the Surgeon General sent four of the nation's leading doctors to investigate.

One of them, Dr. William Vaughan, later recalled: "Hundreds of stalwart young men in the uniform of their country, coming into the wards of the hospital in groups of ten or more. They are placed on the cots until every bed is full, yet others crowd in. Their faces soon wear a bluish cast; a distressing cough brings up the blood stained sputum. In the morning the dead bodies are stacked about the morgue like cord wood."

On Oct. 3, 1918, Philadelphia closed all schools, churches, theaters, pool halls and other gathering places. Undertakers were overwhelmed — some funeral homes increased their prices sixfold and some even made the bereaved bury their

own dead.

In Tucson, Ariz., the board of health forbade people to venture out in public without a mask. In Albuquerque, where schools and theaters were closed, a local newspaper wrote, "the ghost of fear walked everywhere."

Similar actions are being taken today. Public schools have been closed, and public gatherings have been canceled. Many people are working from home.

For the economy, the effects of the 1918 flu, despite factory closings and social disruptions, were hard to disentangle from the profound ones of World War I. The world was not as interconnected as it is today, and by the summer of 1919, the pandemic had ended.

Coronavirus is already having significant impacts on the stock market and other aspects of the economy, but the long-term consequences remain to be seen.

‘What Are the Symptoms?’ ‘Is There a Cure?’ and Other Coronavirus Questions

Here’s what to do if you feel sick and are worried it may be the coronavirus.

AS THE CORONAVIRUS continues to spread across the globe, the news is coming at a fast and furious pace. But don’t let the volume send you into a panic about your health and that of your loved ones.

“The mantra is, ‘Keep calm and carry on,’” said Dr. Marguerite Neill, an infectious disease expert at Brown University.

Here’s a list of frequently asked questions about the coronavirus outbreak and its symptoms.

What symptoms should I look out for?

Symptoms of this infection include fever, a dry cough, fatigue and difficulty breathing or shortness of breath. The illness causes lung lesions and pneumonia. Some of these symptoms overlap with those of the flu, making detection difficult, but runny noses and stuffy sinuses are not normally among the first symptoms.

Patients may also exhibit gastrointestinal problems or diarrhea. Most people fall ill five to seven days after exposure, but symptoms may appear in as few as two days or as many as 14

days.

In some cases, people who had appeared stable rapidly deteriorated in the second week; anyone infected needs careful monitoring.

What should I do if I feel sick?

If you think you're sick as a result of the novel coronavirus, you can help safeguard your loved ones and community by staying at home, except to get medical care.

The current guidance from the Centers for Disease Control and Prevention recommends that you call a medical professional if you notice symptoms and

- Live in or have traveled to an area with a known coronavirus outbreak, or
- Have had close contact with someone who has traveled to an area with an outbreak, or
- Have had close contact with anyone infected.

Call your doctor or health professional before you go. That will help him or her prepare for your visit and prevent the spread of the virus to other people in the office. Be sure to wear a mask when you go to the doctor's office and when you're around other people. If you cannot find a mask, you can create a makeshift one from a cloth or T-shirt.

The C.D.C. also suggests that you avoid public transportation, ride-sharing services and taxis, and that you separate yourself from other people and animals in your home as soon as possible. That means not letting anyone enter your room and, ideally, not sharing bathrooms. Others should stay more than three feet away from you and avoid any surface you might have

coughed on or touched, including doorknobs, plates, cups and towels.

Many state health departments have set up hotlines for people who want more information, but long wait times have been reported. Eventually, specific coronavirus testing centers may be set up.

What if someone in my family gets sick?

Follow the same steps listed above if you think your children, or anyone else in your household, may be infected. Both the coronavirus and influenza are most dangerous to people who are over 65 or have chronic illnesses or a weak immune system. Children infected with the new coronavirus tend to have mild or no symptoms, and it is unclear how easily they transmit the disease to teenagers or adults.

How does this compare with the flu?

The coronavirus seems to be more deadly than seasonal flu and almost as contagious. Early estimates of the coronavirus death rate from Wuhan, China, the epicenter of the outbreak, have been around 2 percent, while the seasonal flu, on average, kills about 0.1 percent of people who become infected.

By contrast, the 1918 flu had an unusually high fatality rate, greater than 2 percent. Because it was so contagious, that flu killed tens of millions of people.

How does the virus spread?

The new coronavirus seems to spread very easily, especially in confined spaces like homes, hospitals, churches and cruise ships. It appears to spread through droplets in the air and on

surfaces from a cough or sneeze.

Whether a surface looks dirty or clean is irrelevant. If an infected person coughs and a droplet lands on a surface, a person who then touches that surface could pick it up.

A study of other coronaviruses found that they remained on metal, glass and plastic for two hours to nine days. But there is good news: The virus is relatively easy to destroy using any simple disinfectant or bleach.

Droplets can sit on the surfaces of latex gloves. Some experts suggest wearing cloth or leather gloves that absorb droplets and are bulky enough to discourage you from touching your face.

Will the virus disappear in the summer?

That is still unknown. This is a new virus, and everyone is believed to be susceptible.

Flu transmission decreases in hot weather every year, and the SARS coronavirus emerged in winter and was eliminated by the following June. But SARS was beaten by aggressive containment measures, not by the weather. The four mild coronaviruses that cause common colds still circulate in warm weather and cause "summer colds."

In the 1918 and 2009 flu pandemics, there was a second wave in the fall.

Is there a cure? What about a vaccine?

There is no approved antiviral drug for the coronavirus, though several are being tested. For now, doctors can recommend only the usual remedies for any viral illness: rest, medicine to reduce pain and fever, and fluids to avoid dehydration.

Coronavirus patients with pneumonia may also need

oxygen, and a ventilator if breathing trouble worsens. Some patients who appear to be doing well have a "crash" in the second week of their illness.

An experimental vaccine for the coronavirus may be ready for testing in humans within a few months. But even if it is approved, it will take much longer, at least a year, before it is available for widespread use. In the meantime, experts are urging people and their children to get a flu shot.

My partner/friend/parent/child is very worried. How serious is this?

This virus can be deadly. There's a reason government officials and medical experts across the world are issuing strong warnings.

About 80 percent of victims will recover without any need for hospitalization. Still, the cases categorized as "mild" by the Chinese C.D.C. included those with "mild pneumonia," meaning there is fluid in the lungs but not seriously enough to require supplemental oxygen or intensive care. The other categories are "severe," which means oxygen or ventilation is required, and "critical," which means lung or organ failure.

It is important to keep these distinctions in mind, both to avoid unnecessary panic and to get a clear picture of the likelihood of transmission.

"Many people are now panicking, and some actually are exaggerating the risks," said Dr. Jin Dong-Yan, a virology expert at the University of Hong Kong.

OK. Then why are experts so concerned?

Unlike other, more mild coronaviruses, this one causes many

deaths.

It is unclear how many completely symptom-free cases there are, because some people test positive a day or two before developing symptoms. The World Health Organization believes that only about 1 percent of cases never develop a fever or any other symptoms.

What Does the Coronavirus Do to the Body?

Here's what scientists have learned about how the new virus infects and attacks cells and how it can affect organs beyond the lungs. BY PAM BELLUCK

AS CASES OF coronavirus infection proliferate around the world and governments take extraordinary measures to limit the spread, there is still a lot of confusion about what exactly the virus does to people's bodies.

The symptoms — fever, cough, shortness of breath — can signal any number of illnesses, from flu to strep to the common cold. Here is what medical experts and researchers have learned so far about the progression of the infection caused by this new coronavirus — and what they still don't know.

How does this coronavirus cause infection?

The virus is spread through droplets transmitted into the air from coughing or sneezing, which people nearby can take in through their nose, mouth or eyes. The viral particles in these droplets travel quickly to the back of your nasal passages and to the mucous membranes in the back of your throat, attaching to a particular receptor in cells, beginning there.

Coronavirus particles have spiked proteins sticking out from their surfaces, and these spikes hook onto cell membranes,

allowing the virus's genetic material to enter the human cell.

That genetic material proceeds to "hijack the metabolism of the cell and say, in effect, 'Don't do your usual job. Your job now is to help me multiply and make the virus,'" said Dr. William Schaffner, an infectious disease specialist at Vanderbilt University Medical Center in Nashville.

How does that process cause respiratory problems?

As copies of the virus multiply, they burst out and infect neighboring cells. The symptoms often start in the back of the throat with a sore throat and a dry cough.

The virus then "crawls progressively down the bronchial tubes," Dr. Schaffner said. When the virus reaches the lungs, their mucous membranes become inflamed. That can damage the alveoli or lung sacs and they have to work harder to carry out their function of supplying oxygen to the blood that circulates throughout our body and removing carbon dioxide from the blood so that it can be exhaled.

"If you get swelling there, it makes it that much more difficult for oxygen to swim across the mucous membrane," said Dr. Amy Compton-Phillips, the chief clinical officer for the Providence Health System, which included the hospital in Everett, Wash., that had the first reported case of coronavirus in the United States, in January 2020.

The swelling and the impaired flow of oxygen can cause those areas in the lungs to fill with fluid, pus and dead cells. Pneumonia, an infection in the lung, can occur.

Some people have so much trouble breathing they need to be put on a ventilator. In the worst cases, known as Acute Respiratory Distress Syndrome, the lungs fill with so much

fluid that no amount of breathing support can help, and the patient dies.

What trajectory does the virus take in the lungs?

Dr. Shu-Yuan Xiao, a professor of pathology at the University of Chicago School of Medicine has examined pathology reports on coronavirus patients in China. He said the virus appears to start in peripheral areas on both sides of the lung and can take a while to reach the upper respiratory tract, the trachea and other central airways.

Dr. Xiao, who also serves as the director of the Center For Pathology and Molecular Diagnostics at Wuhan University, said that pattern helps explain why in Wuhan, where the outbreak began, many of the earliest cases were not identified immediately.

The initial testing regimen in many Chinese hospitals did not always detect infection in the peripheral lungs, so some people with symptoms were sent home without treatment.

"They'd either go to other hospitals to seek treatment or stay home and infect their family," he said. "That's one of the reasons there was such a wide spread."

A recent study from a team led by researchers at the Icahn School of Medicine at Mount Sinai found that more than half of 121 patients in China had normal CT scans early in their disease. That study and work by Dr. Xiao show that as the disease progresses, CT scans show "ground glass opacities," a kind of hazy veil in parts of the lung that are evident in many types of viral respiratory infections. Those opaque areas can scatter and thicken in places as the illness worsens, creating what radiologists call a "crazy paving" pattern on the scan.

Are the lungs the only part of the body affected?

Not necessarily. Dr. Compton-Phillips said the infection can spread through the mucous membranes, from the nose down to the rectum.

So while the virus appears to zero in on the lungs, it may also be able to infect cells in the gastrointestinal system, experts say. This may be why some patients have symptoms like diarrhea or indigestion. The virus can also get into the bloodstream, Dr. Schaffner said.

The Centers for Disease Control and Prevention says that RNA from the new coronavirus has been detected in blood and stool specimens, but that it's unclear whether infectious virus can persist in blood or stool.

Bone marrow and organs like the liver can become inflamed too, said Dr. George Diaz, section leader for infectious diseases at Providence Regional Medical Center in Everett, Wash., whose team treated the first U.S. coronavirus patient. There may also be some inflammation in small blood vessels, as happened with SARS, the viral outbreak in 2002 and 2003.

"The virus will actually land on organs like the heart, the kidney, the liver, and may cause some direct damage to those organs," Dr. Schaffner said. As the body's immune system shifts into high gear to battle the infection, the resulting inflammation may cause those organs to malfunction, he said.

As a result, some patients may endure damage that is inflicted not just by the virus, but by their own immune system as it rages to combat the infection.

Experts have not yet documented whether the virus can affect the brain. But scientists who studied SARS have reported some evidence that the SARS virus could infiltrate the brain in

some patients. Given the similarity between SARS and Covid-19, the infection caused by the new coronavirus, a paper published in February 2020 in the Journal of Medical Virology argued that the possibility that the new coronavirus might be able to infect some nerve cells should not be ruled out.

Why do some people get very ill but most don't?

About 80 percent of people infected with the new coronavirus have relatively mild symptoms. But about 20 percent of people become more seriously ill and in about 2 percent of patients in China, which has had the most cases, the disease has been fatal.

Experts say the effects appear to depend on how robust or weakened a person's immune system is. Older people or those with underlying health issues, like diabetes or another chronic illness, are more likely to develop severe symptoms.

Dr. Xiao conducted pathological examinations of two people in China who went into a hospital in Wuhan in January 2020 for a different reason — they needed surgery for early stage lung cancer — but whose records later showed that they had also had coronavirus infection, which the hospital did not recognize at the time. Neither patient's lung cancer was advanced enough to kill them, he said.

One of those patients, an 84-year-old woman with diabetes, died from pneumonia caused by coronavirus, Dr. Xiao said the records showed.

The other patient, a 73-year-old man, was somewhat healthier, with a history of hypertension that he had managed well for 20 years. Dr. Xiao said the man had successful surgery to remove a lung tumor, was discharged, and nine days later returned to the hospital because he had a fever and cough that

was determined to be coronavirus.

Dr. Xiao said that the man had almost certainly been infected during his first stay in the hospital, since other patients in his post-surgical recovery room were later found to have coronavirus. Like many other cases, it took the man days to show respiratory symptoms.

The man recovered after 20 days in the hospital's infectious disease unit. Experts say that when patients like that recover, it is often because the supportive care — fluids, breathing support, and other treatment — allows them to outlast the worst effects of the inflammation caused by the virus.

What do scientists still not know about coronavirus patients?

A lot. Although the illness resembles SARS in many respects and has elements in common with influenza and pneumonia, the course a patient's coronavirus will take is not yet fully understood.

Some patients can remain stable for over a week and then suddenly develop pneumonia, Dr. Diaz said. Some patients seem to recover but then develop symptoms again.

Dr. Xiao said that some patients in China recovered but got sick again, apparently because they had damaged and vulnerable lung tissue that was subsequently attacked by bacteria in their body. Some of those patients ended up dying from a bacterial infection, not the virus. But that didn't appear to cause the majority of deaths, he said.

Other cases have been tragic mysteries. Dr. Xiao said he personally knew a man and woman who got infected, but seemed to be improving. Then the man deteriorated and was

hospitalized.

"He was in I.C.U., getting oxygen, and he texted his wife that he was getting better, he had good appetite and so on," Dr. Xiao said. "But then in the late afternoon, she stopped receiving texts from him. She didn't know what was going on. And by 10 p.m., she got a notice from the hospital that he had passed."

Surfaces? Sneezes? Sex? How the Coronavirus Can and Cannot Spread

What you need to know about how the virus is transmitted. BY HEATHER MURPHY

A DELICATE BUT HIGHLY CONTAGIOUS VIRUS, roughly one-900th the width of a human hair, is spreading from person to person around the world. The coronavirus, as it's known, has already infected people in more than 100 countries.

Because this virus is so new, experts' understanding of how it spreads is limited. They can, however, offer some guidance about how it does — and does not — seem to be transmitted.

If I cross paths with a sick person, will I get sick too?

You walk into a crowded grocery store. A shopper has coronavirus. What puts you most at risk of getting infected by that person?

Experts agree they have a great deal to learn, but four factors likely play some role: how close you get; how long you are near the person; whether that person projects viral droplets on you; and how much you touch your face. (Of course, your age and health are also major factors.)

What's a viral droplet?

It is a droplet containing viral particles. A virus is a tiny code-pendent microbe that attaches to a cell, takes over, makes more of itself and moves on to its next host. This is its "lifestyle," said Gary Whittaker, a professor of virology at Cornell University College of Veterinary Medicine.

A "naked" virus can't go anywhere unless it's hitching a ride with a droplet of mucus or saliva, said Kin-on Kwok, a professor at the Chinese University of Hong Kong's Jockey Club School of Public Health and Primary Care.

These mucus and saliva droplets are ejected from the mouth or nose as we cough, sneeze, laugh, sing, breathe and talk. If they don't hit something along the way, they typically land on the floor or ground.

To get access to your cells, the viral droplets must enter through the eyes, nose or mouth. Some experts believe that sneezing and coughing are likely the primary forms of transmission. Professor Kwok said talking face-to-face or sharing a meal with someone could pose a risk.

Julian Tang, a virologist and professor at the University of Leicester in England who is researching coronavirus with Professor Kwok, agreed.

"If you can smell what someone had for lunch — garlic, curry, etc. — you are inhaling what they are breathing out, including any virus in their breath," he said.

How close is too close?

Christian Lindmeier, a spokesman for the World Health Organization, said it's best to stay three feet from a sick person.

The Centers for Disease Control and Prevention said that

standing within six feet could carry risk.

How long is too long to be near an infected person?

It's not yet clear, but most experts agree that more time equals more risk.

Will you know a person is sick?

Not necessarily.

Keep in mind that if you do get sick, most symptoms are as mild as a cold or the flu. Still, others who are infected with coronavirus never fall ill at all. (Technically, Covid-19 is the name for the sickness caused by the respiratory virus.)

But the flip side of this is that it can be hard to tell who is capable of spreading coronavirus.

In a growing number of cases, people without symptoms have infected others. The W.H.O. still believes that most of those who have spread coronavirus were clearly ill at the time of transmission, Mr. Lindmeier said.

Can the virus last on a bus pole, touch screen or other surface?

Yes. After numerous people who attended a Buddhist temple in Hong Kong fell ill, the city's Center for Health Protection collected samples from the site. Restroom faucets and the cloth covers over Buddhist texts tested positive for coronavirus, the agency said.

Technically, the virus widely known as the coronavirus is just the latest of many similarly shaped viruses. (Coronaviruses are named for the spikes that protrude from their surfaces, which resemble a crown or the sun's corona.) A study of other

coronaviruses found they remained on metal, glass and plastic for two hours to nine days.

Whether a surface looks dirty or clean is irrelevant. If an infected person sneezed and a droplet landed on a surface, a person who then touches that surface could pick it up. How much is required to infect a person is unclear.

Coronaviruses are relatively easy to destroy, Professor Whittaker said. Using a simple disinfectant on a surface is nearly guaranteed to break the delicate envelope that surrounds the tiny microbe, rendering it harmless.

As long as you wash your hands before touching your face, you should be OK, because viral droplets don't pass through skin.

If you are concerned about getting sick from someone who might have sneezed onto a product you've ordered that's made in China, don't worry. In the time it takes to get to the United States, you should be safe, and if you are really concerned, you can clean the surface with a disinfectant or wash your hands after touching it.

Does the brand or type of soap you use matter?

No, several experts said.

My neighbor is coughing. Should I be worried?

There is no evidence that viral particles can go through walls or glass, said Dr. Ashish K. Jha, director of the Harvard Global Health Institute.

He said he was more concerned about common spaces than dangers posed by vents, provided there is good air circulation in a room.

An infected neighbor might sneeze on a railing and if you touched it, "that would be a more natural way to get it from your neighbor," he said.

Can I get it from making out with someone?

Kissing could definitely spread it, several experts said.

Though coronaviruses are not typically sexually transmitted, it's too soon to know, the W.H.O. said.

Is it safe to eat where people are sick with coronavirus?

If a sick person handles the food or it's a high-traffic buffet, then risks cannot be ruled out — but heating or reheating food should kill the virus, Professor Whittaker said.

Dr. Jha concurred.

"As a general rule, we haven't seen that food is a mechanism for spreading," he said.

Can my dog or cat safely join me in quarantine?

Thousands of people have already begun various types of quarantines. Some have been mandated by health officials, and others are voluntary and primarily involve staying home.

Can a cat or dog join someone to make quarantine less lonely?

Professor Whittaker, who has studied the spread of coronaviruses in animals and humans, said he's seen no evidence that a person could be a danger to their pet.

Your Nose Itches. Is It Allergies, Flu or the Coronavirus?

Seasonal allergy symptoms differ from those caused by viral infections like influenza or the coronavirus.

BY KNVUL SHEIKH

WITH THE SPREAD of the coronavirus comes another ailment: anxiety about every single symptom. Is your nose feeling itchy because you're trying not to touch your face, because you picked up the flu — or is it, just maybe, the coronavirus?

Allergies may be triggering symptoms that can make it difficult to determine what your body is trying to fight off. Dr. Amesh Adalja, an infectious disease specialist at the Johns Hopkins Center for Health Security, helps explain the subtle differences between signs of allergies or infection with the flu or the coronavirus.

What are your symptoms?

First, consider the time of year. Allergies and influenza tend to be seasonal. If you have a runny nose in the spring and this happens every year, allergies are the likeliest culprit. If it's winter and flu is raging in your community, then that's the probable explanation. The flu is far more widespread than the coronavirus.

But flulike symptoms in warming weather — in a place with documented coronavirus transmission? Maybe it's not the flu.

Influenza dies back in the summer, but scientists have yet to see evidence that the coronavirus will go away as temperatures rise. Coronavirus infections have been spreading in equatorial climates like Singapore's and in the Southern Hemisphere, now in the middle of summer.

Consider, too, where the symptoms first started appearing. "It's usually your nose and eyes where you develop symptoms of seasonal allergies," Dr. Adalja said.

The seasonal flu, on the other hand, is more likely to affect your whole body, as is the case for many other respiratory viruses — including the coronavirus. So if you experience fevers, headaches or muscle aches, consider flu or coronavirus.

"There's a feeling of overall malaise that is associated with viral infections," Dr. Adalja said. Except for seasonality, it can be hard to tell the two apart.

"Unfortunately, there's no reliable way to distinguish between early symptoms of the flu and coronavirus," Dr. Adalja said. "The only way to distinguish the two clinically is with a diagnostic test."

According to reports from nearly 56,000 laboratory-confirmed cases in China, people infected with the coronavirus develop symptoms like a dry cough, shortness of breath and a sore throat, in addition to fever and aches.

Around 5 percent of patients may also experience nausea or vomiting, while roughly 4 percent develop diarrhea. Researchers are not sure why some people develop gastrointestinal symptoms with coronavirus infections.

"But that's not something you usually see with influenza in adults," Dr. Adalja said.

Severe coronavirus infections can result in lung lesions and pneumonia. But the vast majority of those infected get only mild cases that often resemble the flu.

Your personal history can give doctors clues to what's going on. If you traveled to an area with large clusters of coronavirus cases, or were in contact with someone who later tested positive for the virus, you may have caught it, too.

Doctors and health care workers have to work with these possibilities because tests are still available only in limited quantities in the United States, Dr. Adalja said.

How bad is it?

Pay close attention to whether your symptoms worsen over time. Discomfort due to allergy remains consistent until you treat it or the allergen goes away. Symptoms of the flu tend to resolve in about a week.

The new coronavirus, on the other hand, seems to cause more severe symptoms than the average seasonal flu and seems to have a higher fatality rate, although the numbers are a bit uncertain.

If you are elderly or have other health conditions, such as heart disease, Type 2 diabetes or immunodeficiency, you are more vulnerable to viral infections and are more likely to develop severe disease if infected with the coronavirus.

Early estimates from China show that the average death rate among coronavirus patients is around 2 percent, but that figure rises to 8 percent in people 70 years or older, and about 15 percent in people 80 years or older.

But nobody is certain how many cases are very mild or asymptomatic.

What to expect

The general advice for people who get sick with the flu or coronavirus is very similar: Rest and drink plenty of fluids.

Mild cases of the flu resolve by themselves within a few days. Although coronavirus infections tend to last a little longer, most people with mild cases get better in about two weeks, Dr. Adalja said.

Severe cases may take three to six weeks to resolve. Doctors can only give supportive care, providing patients with intravenous fluids, medicines to keep the fever down or oxygen to help with breathing.

There are no approved treatments for coronavirus infections, although a few clinical trials are underway that test antiviral drugs such as remdesivir.

It's up to you to take precautions to prevent a coronavirus infection, and to take stock of your medical and travel history. But you don't need to go to the doctor for every sniffle or scratchy throat.

"You should be going to the doctor for something that would trigger concern, even before you had heard of the coronavirus," Dr. Adalja said.

"So if you're somebody that's elderly or somebody that has another medical condition, if you develop shortness of breath, if you develop extreme fatigue, those are real indicators to call your physician and go to the hospital."

Can I Boost My Immune System?

Fears about coronavirus have prompted online searches and plenty of misinformation about how to strengthen the immune system. Here's what works — and what doesn't. **BY TARA PARKER-POPE**

AS WORRIES GROW about the new coronavirus, online searches for ways to bolster the immune system have surged. Are there foods to boost your immune system? Will vitamins help?

The immune system is a complex network of cells, organs and tissues that work in tandem to protect the body from infection. While genetics play a role, we know from studies of twins that the strength of our immune system is largely determined by nonheritable factors. The germs we are exposed to over a lifetime, as well as lifestyle factors like stress, sleep, diet and exercise all play a role in the strength of our immune response.

The bottom line is that there is no magic pill or a specific food guaranteed to bolster your immune system and protect you from the new coronavirus. But there are real ways you can take care of yourself and give your immune system the best chance to do its job against a respiratory illness.

Lower your stress.

Worries about the coronavirus, the stock market and the

general disruption of life have added to our stress levels, but we know that stress also can make you more susceptible to respiratory illness.

In a series of remarkable studies over 20 years at Carnegie Mellon University, volunteers were exposed to the cold virus (using nose drops) and then quarantined for observation. The researchers found that people who reported less stress in their lives were less likely to develop cold symptoms. Another series of studies at Ohio State University found that marital conflict is especially taxing to the immune system. In a series of studies, the researchers inflicted small wounds on the arms of volunteers, and then asked couples to discuss topics both pleasant and stressful. When couples argued, their wounds took, on average, a full day longer to heal than after the sessions in which the couples discussed something pleasant. Among couples who exhibited especially high levels of hostility, the wounds took two days longer to heal.

THE BOTTOM LINE: Your body does a better job fighting off illness and healing wounds when it's not under stress. Learning techniques for managing stress, like meditation, controlled breathing or talking to a therapist are all ways to help your immune system stay strong.

Improve your sleep habits.

A healthy immune system can fight off infection. A sleep-deprived immune system doesn't work as well. In one surprising study, researchers found 164 men and women willing to be exposed to the cold virus. Not everyone got sick. But short sleepers — those who regularly slept less than six hours a night — were 4.2 times more likely to catch the cold compared with

those who got more than seven hours of sleep, researchers found. Risk was even higher when a person slept less than five hours a night.

THE BOTTOM LINE: Focusing on better sleep habits is a good way to strengthen your immune system. The sweet spot for sleep is six to seven hours a night. Stick to a regular bedtime and wake-up schedule. Avoid screens, night-eating and exercise right before bedtime.

Check your vitamin D level.

While more study is needed on the link between vitamin D and immune health, some promising research suggests that checking your vitamin D level — and taking a vitamin D supplement — could help your body fight off respiratory illness. In one study of 107 older patients, some patients took high doses of vitamin D while others were given standard doses. After a year, the researchers found that people in the high-dose group had 40 percent fewer respiratory infections over the course of the year compared to those on the standard dose. A more recent analysis of 25 randomized controlled trials of 11,000 patients showed an overall protective effect of vitamin D supplementation against acute respiratory tract infections. The data aren't conclusive, and some studies of vitamin D haven't shown a benefit.

Why would vitamin D lower risk for respiratory illness? Our bodies need adequate vitamin D to produce the antimicrobial proteins that kill viruses and bacteria. "If you don't have adequate vitamin D circulating, you are less effective at producing these proteins and more susceptible to infection," says Dr. Adit Ginde, professor of emergency medicine at the University of Colorado School of Medicine and the study's lead author.

"These proteins are particularly active in the respiratory tract."

It's important to note that there are no clinical recommendations to take vitamin D for immune health, although the standard recommendation for bone health is for 600 to 800 international units per day. (That is the level found in most multivitamins.) In the study of respiratory illness and vitamin D, the dose was equivalent to about 3,330 international units daily.

Vitamin D can be found in fatty fish, such as salmon, and in milk or foods fortified with vitamin D. In general, our vitamin D levels tend to be influenced by sun exposure, skin tone and latitude — people in northern areas who get less sun exposure in the winter typically have lower vitamin D. A blood test is required to check vitamin D levels. Less than 20 nanograms per milliliter is considered deficient. Above 30 is optimal.

THE BOTTOM LINE: If you are concerned about immune health, you may consider having your vitamin D level checked and talking to your doctor about whether to take a supplement.

Avoid excessive alcohol consumption.

Numerous studies have found a link between excessive alcohol consumption and immune function. Research shows people who drink in excess are more susceptible to respiratory illness and pneumonia and recover from infection and wounds more slowly. Alcohol alters the number of microbes in the gut microbiome, a community of microorganisms that affect the immune system. Excessive alcohol can damage the lungs, and impair the mucosal immune system, which is essential in helping the body recognize pathogens and fight infection. And it's not just chronic drinking that does damage. Binge drinking can also impair the immune system.

THE BOTTOM LINE: A cocktail or glass of wine while you are sheltering in place during coronavirus is fine. But avoid drinking to excess. The current U.S. Dietary Guidelines for Americans recommend that alcohol should be consumed only in moderation — up to one drink per day for women and two drinks per day for men.

Eat a balanced diet and skip unproven supplements.

A healthful diet and exercise are important to maintaining a strong immune system. However, no single food or natural remedy has been proven to bolster a person's immune system or ward off disease. But that hasn't stopped people from making specious claims. A recipe circulating on social media claims boiled garlic water helps. Other common foods touted for their immune-boosting properties are ginger, citrus fruits, turmeric, oregano oil and bone broth. There are small studies that suggest a benefit to some of these foods, but strong evidence is lacking. For instance, the bone broth claim has been fueled by a study published in 2000 that showed eating chicken soup seemed to reduce symptoms of an upper respiratory tract infection. A number of small studies have suggested garlic may enhance immune system function. Claims that elderberry products can prevent viral illness also are making the rounds on social media, but evidence is lacking.

Zinc supplements and lozenges are also a popular remedy for fighting off colds and respiratory illness. Some studies have found that zinc lozenges may reduce the duration of cold by about a day and, may reduce the number of upper respiratory infections in children. But the data on zinc are mixed. If you already have enough zinc from your diet, it's not clear

that taking a supplement can help. Zinc supplements also commonly cause nausea.

"There are a lot of products that tout immune boosting properties, but I don't think any of these have been medically proven to work," said Dr. Krystina Woods, hospital epidemiologist and medical director of infection prevention at Mount Sinai West. "There are people who anecdotally say 'I felt great after I took' whatever. That may be true, but there's no science to support that."

THE BOTTOM LINE: If you enjoy foods touted as immune boosters, there is no harm in eating them as part of a balanced diet. Just be sure that you don't neglect proven health advice — like washing your hands and not touching your face — when it comes to protecting yourself from viral illness.

How Exercise May Affect Your Immunity

Does exercise help or hinder our bodies' ability to fight off infections? It depends. **BY GRETCHEN REYNOLDS**

DOES EXERCISE HELP or hinder our bodies' ability to fight off infections?

In the context of the novel coronavirus outbreak, that question has gained urgency and also, thanks to recent research, emergent answers. The latest science suggests that being fit boosts our immune systems, and that even a single workout can amplify and improve our ability to fight off germs.

But some studies also indicate that the types and amount of exercise may influence how exercise affects our immune responses. More is not necessarily better. And the location of the exercise could matter, too; cue recent findings about the germiness of gyms.

What follows is an overview of the state of today's science about how and why exercise interacts with our immune systems and whether we should plan to remain active, even as the incidence of new virus cases continues to grow.

Many of us who exercise have heard from well-meaning friends, spouses or parents that strenuous exercise will tamp down our immune systems, opening us to pathogens and illness. That notion gained credence in the late 1980s, the result

of studies showing that "marathon running increased the incidence of infection symptoms among runners in the days and weeks after the race," says John Campbell, a professor of health science at the University of Bath in England and co-author of an influential 2018 review of exercise and immunity.

But those studies subsequently turned out to have relied too heavily on self-diagnoses from the runners about their sniffles. In experiments using laboratory testing of marathoners after races, few proved to have actual respiratory infections. Instead, most had developed airway irritations or other non-infectious conditions.

Follow-up studies then established that marathon runners and other competitive, endurance athletes tended, in fact, to report few annual sick days, indicating that their immune systems were not over-burdened by exercise but bolstered.

Since then, a wealth of research in both people and animals reinforced that idea. A series of 2005 experiments with mice, for instance, showed that if rodents jogged gently for about 30 minutes a day for several weeks, they were much more likely to survive a virulent form of rodent influenza than untrained animals.

At the same time, though, some research hinted that a single, strenuous workout might temporarily diminish our immune responses soon afterward, putting us at heightened risk for an opportunistic infection after the workout. This possibility was known as the "open window" theory and relied on experiments in animals and people showing that immune cells flooded our bloodstreams immediately after a hard workout and then abruptly disappeared, presumably dying as a result of the exercise stress. This disappearance seemed to leave us

with lowered levels of the cells that recognize and fight pathogenic intruders, offering germs an open window for incursions.

But, once again, subsequent, sophisticated experiments offered a different explanation. In remarkable experiments with rodents, scientists marked some of their immune cells with phosphorescent dye and had them run to exhaustion.

Afterward, the scientists noted that the levels of glowing cells in their bloodstreams spiked and then plummeted, as expected. But they also found that few of those cells had died; instead they had traveled to the animals' lungs, guts and other parts of their bodies potentially most vulnerable to germ invasions during exercise. After a few hours of sentinel duty, most of the cells returned to the bloodstream, stabilizing immune cells levels there and suggesting that their immune vigilance had refocused but not declined.

Similarly, in a study published last year, fit, exercise-trained mice that were injected with germs immediately after a strenuous run fought off the infection better than sedentary animals, in large part, additional molecular analysis showed, because their immune cells homed in on and clustered around the pathogens, while those same cells were more diffusely scattered in the tissues of the inactive animals.

Taken as a whole, this research about exercise and our immune systems tells us that "there is no or limited reliable evidence for exercise directly increasing the chance of developing any kind of viral infection," says James Turner, co-author of the 2018 review about exercise and immunity and also a professor of health science at the University of Bath.

"So, it is safe to exercise, despite concerns about coronavirus," he concludes. Exercise, in fact, will probably lessen the

risk of an infection, he says.

There are caveats, though. If you have not been exercising, now might not be the ideal moment to start an extremely ambitious and tiring new workout routine. In the 2005 studies with mice and influenza, a separate group of animals that ran strenuously for weeks developed somewhat more severe and longer-lasting symptoms than the mice that ran moderately before their infections, although the differences were slight.

"It is fair to say that a large increase in exercise intensity and/or duration, especially in people new to exercise, might have transient negative effects on the immune system," says Jeffrey Woods, a professor of kinesiology and community health at the University of Illinois in Urbana-Champaign, who studies exercise and immunity and led the mouse study.

And do not ignore basic hygiene and common sense. Wash your hands often before and after exercise; shorten or skip workouts if you feel unwell; avoid training partners who are sniffling or coughing; and rub a sanitizing wipe over gym equipment before use. A study in 2019 identified lingering, infectious germs on about a third of the surfaces at 16 different fitness facilities.

How to Stop Touching Your Face

We know it's hard. Try these four tricks to help limit the number of times you touch your face each day to help prevent the spread of the coronavirus.

BY JENNY GROSS

NOW THAT WE know that it's bad to touch our faces, how do we break a habit that most of us didn't know we had?

Throughout the day, we touch a lot of surfaces — doorknobs, elevator buttons, subway poles — where viruses, including the new coronavirus, can linger for days. From there, microbes can piggyback on our fingertips to our noses, mouths or eyes, all of which are entry portals for the coronavirus, as well as other viruses and germs.

It took the coronavirus outbreak to make many of us aware of just how often we reach for our faces.

"It's a very difficult habit to break because we all do it, and oftentimes we're not even aware we're doing it," said Dr. Vanessa Raabe, assistant professor in the department of medicine at NYU Langone Health.

Here are four tricks to help you stop.

Keep a box of tissues handy.

When you feel the urge to scratch an itch, rub your nose or adjust

your glasses, grab a tissue and use that instead of your fingers.

If you feel you have to sneeze, but don't have a tissue handy, aim your sneeze into your elbow rather than your hand, health experts say. Sneezing into your hand makes it more likely that you will pass your germs on to other people or objects around you.

Identify triggers.

Pause throughout the day to notice compulsive behavior. Once you're more aware of when and why you're touching your face, addressing the root cause can be an effective solution. If you find yourself rubbing your eyes because they are dry, use moisturizing drops. If you are using your hand as a chin rest or to adjust your hair, be aware of that, Dr. Raabe said.

Dr. Justin Ko, a clinical associate professor of dermatology at Stanford Health, said he tells patients who wear contact lenses to consider wearing glasses instead to discourage them from rubbing their eyes. "Similarly," he said, "while masks are not very effective for preventing virus transmission, they can be quite helpful for providing a physical barrier against touching the nose or mouth."

Putting Post-it notes around the house, or on your desktop, could also serve as helpful reminders.

Keep your hands busy.

Keeping your hands occupied with a stress ball or other object can reduce instances of touching your face and minimize triggers, doctors said. Of course, don't forget to regularly clean and sanitize that object. If you don't have a stress ball to squeeze, mail to sort or laundry to fold, you could lace your hands

together in your lap or find another way to actively engage them so you are not bringing them to your face as much.

Using scented soap or lotion could also help, said Zach Sikora, a clinical psychologist at Northwestern Medicine in Chicago. When you bring your hands close to your face, that smell could make you more aware of your actions.

We know it's hard. President Trump has struggled with it, too. "I haven't touched my face in weeks! Been weeks," Mr. Trump said March 4, 2020, at a meeting of airline chief executives. "I miss it."

Chill.

"My general advice would be that people should try to reduce their stress over all, as opposed to obsessively worrying about what they touch," said Stew Shankman, a professor of psychiatry and behavioral sciences at Northwestern University. "Stress impacts your immune system, and the more you're stressed, the more you're reducing your body's ability to fight off infections."

He said he worried about the effects of using ritualistic behaviors, like snapping a rubber band on your wrist each time you touch your face. It is more effective, he said, to try to be in the present moment, practicing meditation and mindfulness exercises and focusing on your breathing.

As long as your hands are clean, touching your face isn't catastrophic. "It's a natural behavior we all do," Dr. Shankman said. "It's not the end of the world."

How to Clean Your Phone

It's one thing to stop touching your face. It's another to stop touching the things that touch your face.

BY AMELIA NIERENBERG

THE CORONAVIRUS IS here, and it's showing no signs of letting up. One of the best ways to protect yourself is to keep your hands clean and off your face, but it's hard to maintain constant vigilance.

Keeping your phone sanitized is another smart way to keep germs off your fingertips. The Centers for Disease Control and Prevention considers your phone a "high-touch surface," which could make it a carrier of the virus.

But cleaning your phone — thoroughly, I mean — is not as straightforward as it might seem. There are all sorts of nooks and crannies, delicate glass and intricate protective cases.

The don'ts

Any sort of moisture can interfere with your phone's function. Apple recommends that people avoid using spray cleaners or heavy-duty products.

No bleach, no aerosol sprays. You need your phone to work, even if you want it clean.

Also — and this probably goes without saying — don't dunk your phone into any sort of liquid, anti-bacterial or otherwise. It won't end well for either of you.

The dos

A gentle wipe with a product that has 70 percent isopropyl alcohol will do just fine. Apple recommends Clorox, and the C.D.C. says household disinfectants registered by the Environmental Protection Agency are effective.

Wear disposable gloves to clean, the C.D.C. recommends, and wash your hands thoroughly after you're done. Like your phone, reusable gloves might harbor virus particles, rendering them effectively useless.

And don't forget your phone case.

Wipe it down, in and out, through and through. Let it dry before reassembling it.

You might also consider changing a bit of your behavior. AT&T suggests sharing photos through texts, instead of passing the phone around, and using devices like headphones and technology like Bluetooth to keep your phone away from your face.

Why?

This might be the best thing you can do all day. This outbreak is fast-moving and research is, by nature, slow to catch up. As a result, the C.D.C. does not yet know exactly how long the virus can cling to a surface, but evidence suggests it could be "hours to days."

And phones are, well, gross. A 2017 study published in the journal Germs found a host of bacteria, viruses and pathogens on 27 phones owned by teenagers. The scientists wrote that they "hypothesize that this may play a role in the spread of infectious agents in the community."

Safe is always better than sorry.

Pregnant and Worried About Coronavirus? Experts Weigh In

We found answers to some of the most pressing questions posed by expecting mothers. BY CHRISTINA CARON

IF YOU'RE PREGNANT and trying to digest the daily fire hose of news about the new coronavirus, there are probably several questions on your mind.

Is it OK to travel? Should I wear a mask in public? How worried, overall, should I really be?

"These are really common questions we're getting from our patients every day," said Dr. Roxanna A. Irani, M.D., Ph.D., the medical director of outpatient obstetrics at the University of California, San Francisco. "A lot of our patients who were going on babymoons are deciding to have staycations instead."

While there's still a lot we don't know about the virus or how exactly it affects pregnant women and their babies, we asked experts to help explain the latest thinking about the new coronavirus and pregnancy, and answer some frequently asked questions.

What happens if I get the coronavirus while pregnant?

There is very little data on how the new coronavirus, which causes a respiratory illness known as Covid-19, affects people

who are pregnant.

Pregnant women have altered immune systems, so they are at a higher risk for severe complications if exposed to viruses like the flu, especially if they have underlying health conditions like diabetes or lupus, Dr. Irani said.

"Certainly women who have any other health issues who are also pregnant should also be that much more vigilant," she added.

In an analysis of 147 women who either had or were suspected of having the virus, 8 percent had severe disease and 1 percent were in critical condition, according to a report published in late February 2020 by the World Health Organization.

But experts cautioned against drawing any firm conclusions from this limited sample.

"It's understandable that pregnant women would be concerned about exposure to the virus and any negative effect it could have on their health and the health of their fetus," Dr. Christopher M. Zahn, M.D., the vice president of practice activities at the American College of Obstetricians and Gynecologists, said March 4 in an emailed statement. "However, it is critical to note that at this time, for the general public in the United States, the immediate health risk from Covid-19 is considered low."

Can I pass the new coronavirus to my baby?

There's no evidence that a mother can infect her baby with the coronavirus while pregnant or that infants can be infected during birth, said Dr. Denise J. Jamieson, M.D., M.P.H., chairwoman of gynecology and obstetrics at the Emory University School of Medicine.

In a recent study published in The Lancet, researchers

followed nine pregnant women who had tested positive for the new coronavirus in Wuhan, China — the epicenter of the outbreak. The team found that at the time of birth, which was via cesarean, all of the infants were healthy. There was no evidence of the virus in the mothers' breast milk, cord blood or amniotic fluid.

Although the virus has not been detected in breast milk, the Centers for Disease Control and Prevention said that "we do not know whether mothers with Covid-19 can transmit the virus via breast milk."

Given what we know about viruses, Dr. Jamieson said that "there would be a high likelihood that the virus could be in breast milk, but we don't know for sure."

For now, some experts said the most cautious approach for mothers infected with the coronavirus might be to temporarily separate themselves from their babies while they were experiencing symptoms like a fever or cough. Infected mothers could also consider pumping breast milk and discarding it until they were no longer ill.

But at the moment, the C.D.C. is not advising women infected with the coronavirus or suspected of having it to avoid breastfeeding. Instead, the interim guidance for them is to wash their hands before touching the baby and wear a face mask, if possible, while breastfeeding.

"If expressing breast milk with a manual or electric breast pump, the mother should wash her hands before touching any pump or bottle parts and follow recommendations for proper pump cleaning after each use," the C.D.C. advised on its website. "If possible, consider having someone who is well feed the expressed breast milk to the infant." Most people who get

the coronavirus have symptoms, so it is unlikely that a mother would unknowingly have the virus and then pass it on to her child when breastfeeding.

Why is hand washing so important?

Experts believe that the coronavirus is transmitted via respiratory droplets, which are little virus-laden particles that come out of the mouth or nose when a sick person coughs, sneezes, laughs or talks. They can land as far as six feet away and linger on surfaces. (One study of other types of coronaviruses found that they remained on surfaces like metal, glass and plastic for up to nine days, but that they could be destroyed with disinfectant.)

The new coronavirus has a viral envelope, meaning that it has a protective lipid coating over it that makes it more vulnerable to the environment than nonenveloped viruses. The enveloped viruses "are the easy ones to kill," said Dr. Gregory A. Poland, M.D., a vaccine expert at the Mayo Clinic in Rochester, Minn.

Washing your hands with soap and water for at least 20 seconds will get rid of the germs.

If you cannot wash your hands, use a hand sanitizer with at least 60 percent alcohol.

Many stores and online retailers have sold out of both hand sanitizer and disinfecting wipes, but the companies that make these products have been stepping up production to meet increased demand.

I take public transportation. Should I stop?

As long as your employer or your doctor isn't telling you to limit

your exposure to other people, it's still fine to take public transportation, go to work and do all of the things you're accustomed to doing. But, as always, be sure to thoroughly wash your hands, especially if you touch public surfaces; avoid touching your eyes, nose and mouth; and use hand sanitizer if you don't have access to soap and running water.

Is it OK to take a babymoon? What about other traveling?

As of March 16, 2020, there were no restrictions on travel in the United States.

Regardless, it is still flu season and the coronavirus is spreading, so it might be wise for pregnant women to limit the possibility of an exposure.

"It really depends on how risk-averse the patient and her family are," said Dr. Ilona Goldfarb, M.D., a maternal-fetal medicine specialist at Massachusetts General Hospital.

For travel abroad, consult the C.D.C. website for guidance.

If you do make travel plans, you may need to pivot at the last minute depending on how fast the virus continues to spread, or be prepared for a possible quarantine given how fluid the outbreak has been.

Do I need to wear a mask in public?

Dr. Irani said she hears this question most often from pregnant women.

The answer is no. Wearing a mask will not provide effective protection against the new coronavirus. Masks are best for people who are already sick because they help prevent the spread of respiratory droplets.

"The best thing you can do is wash your hands thoroughly

and not be touching your face, especially in public," Dr. Irani said.

What should I do if I think I might be infected?

If you are pregnant and you start having symptoms like fever, cough or shortness of breath, call your ob-gyn.

If you don't currently have an ob-gyn, call the hospital where you plan to deliver and ask to speak to a triage nurse about what to do, Dr. Jamieson advised.

In addition, various states and counties in the United States are setting up hotlines to answer questions or concerns about the coronavirus. Check with your public health department to see if your area has one.

How many pregnant women have been infected worldwide?

We don't have good data on this.

"Many infectious disease surveillance symptoms are not set up to collect pregnancy status," Dr. Jamieson said. "And in order to know how many pregnant women in the U.S. eventually get coronavirus, we need to ask about pregnancy status and collect that information systematically."

Is there a vaccine?

The vaccine for the new coronavirus is at least a year away, if not longer, experts said.

In the meantime, make sure you get the flu vaccine. While a flu shot will not protect you from coronavirus, it will help protect you from the flu. Flu season generally peaks between December and February, but flu viruses are still circulating and

they can make pregnant women severely ill.

You should also make sure you get the Tdap combination vaccine, which protects against tetanus, diphtheria and pertussis (also known as whooping cough).

Only about one-third of pregnant women in the United States receive both the flu and whooping cough vaccines, according to the C.D.C., but experts say that receiving both is important — not only for a mother, but for her baby, too.

Nearly 70 percent of whooping cough deaths occur in babies less than 2 months old, the C.D.C. said. And if a pregnant woman contracts any type of illness resulting in a fever — like the flu — it can pose rare but serious risks to the baby in the first trimester, Dr. Jamieson said.

What else can I do to protect myself and my family?

Make sure you have a backup plan in place in the event that you (or your partner) contract the new coronavirus after you give birth. And be prepared for the possibility that schools and day cares may close.

"The key is you want the baby being taken care of by a healthy caregiver," Dr. Jamieson said.

Spend some time thinking about who that person would be, she added, and also make sure that your chosen caregiver is fully immunized so that you don't expose your baby to other infectious diseases.

It's also wise for expecting mothers to keep a copy of their prenatal records on hand in case the health care system is disrupted by the spread of the coronavirus.

As always, practice good hygiene, avoid people who are sick and consider staying away from large crowds.

"By limiting your exposure, you limit your risk," Dr. Irani said. "We don't want our moms to be housebound, certainly, we just want them to be smart about their personal hygiene and contact precautions."

The advice to avoid touching your eyes, nose and mouth can be tough to do, but it's even harder if you have a toddler or preschooler at home who is touching every nearby surface, then touching your face, too.

"Kids are learning really early about these kinds of things, so encouraging that at home and not just at school is really important," Dr. Irani said. "And then talking with them: 'No, we don't pick our nose and touch mommy's face.'"

If you share a desk with a co-worker, it's usually a good practice to wipe down the desk before you start your workday.

And while you're at it, keep your smartphone clean. Check with your phone manufacturer for the safest way to do so without damaging your device. Apple recommends using a soft, damp, lint-free cloth.

Finally, stock up on nonperishable foods, cleaning supplies and necessities like toilet paper and hand soap.

How to Talk to Kids About Coronavirus

Keeping your own anxiety in check is key.

BY JESSICA GROSE

BY NOW, your children have almost certainly heard about the new coronavirus, whether it's from a snippet of a news briefing or from other kids at school. They may have family members who live in affected countries, or who have been quarantined here because of recent international travel. "My patients are scared," said Dr. Nia Heard-Garris, M.D., an attending physician at the Ann and Robert H. Lurie Children's Hospital of Chicago.

So what should you tell kids about the coronavirus, and how? We spoke to a pediatrician, two psychologists, a pediatric infectious disease specialist and a safety expert for their best tips.

Assess what your child knows.

Dr. Heard-Garris said that you should start the conversation by asking what your child has heard about the virus. If they've heard that people all over the world are dying, and the Grim Reaper is coming for us, too, that's a very different conversation than if they've just heard it's like the flu, Dr. Heard-Garris said.

If your child is under 6 and has not heard about the virus

yet, you may not want to bring it up, as it may introduce unnecessary anxiety at this point, said Abi Gewirtz, Ph.D., a clinical psychologist and professor at the University of Minnesota, and the author of the forthcoming book "When the World Feels Like a Scary Place: Essential Conversations for Anxious Parents and Worried Kids."

Process your own anxiety first.

Make sure "you're not panicking in their presence around the topic," said Dunya Poltorak, Ph.D., a pediatric medical psychologist in private practice in Birmingham, Mich. "Your demeanor is going to stir this massive pot of anxiety." So try to process any fears you may have before you talk to your children, whether it's by talking to a friend, a partner or a therapist. "We don't want our children to feel like the world is so scary," said Dr. Gewirtz, because that might keep them from being curious and engaged.

Don't dismiss your child's fears.

If your child is afraid because some kid on the bus told him he might die, that's a real fear and you should take it seriously, Dr. Gewirtz said. If you simply tell the child, "You'll be fine," they might not feel heard. "Listen to them and track what the child is feeling," she said. You can say something in a calm voice like, "That sounds pretty scary, I can see it in your face." You can also relay an anecdote from your own childhood about a time when you were scared. Then, after the child has calmed down, go about your normal routine, and later in the day, perhaps over dinner, you can bring up coronavirus again.

Talk at an age-appropriate level.

If you are talking to your young child about the virus, you can say something like, "There's lots of different viruses, like when your tummy hurts, or sometimes when you have a bad cold. Coronavirus is another type of virus," Dr. Poltorak said.

Depending on how old your child is and how much they know, you might also say something like, "This illness is different than a cold because it's new, but people are trying really hard to make sure it doesn't spread, and they treat people who are sick. If you ever have questions, talk to me," Dr. Heard-Garris said. You can also say, "Scientists and really smart people all around the world are trying to figure out how to keep people safe and healthy."

This comic, from Malaka Gharib, is also a great resource to show kids who are in the early elementary years.

Emphasize good hygiene.

Make sure your kids are washing their hands for at least 20 seconds before and after meals, after they go to the bathroom, after they come in from outside and after they've blown their nose or put their hands in their mouth, said Dr. Rebecca Pellett Madan, M.D., a pediatric infectious disease specialist at N.Y.U. Langone's Hassenfeld Children's Hospital. Children should sing "Happy Birthday" twice to know how long to wash their hands, and then make sure they are drying them thoroughly. Hand sanitizers may be less effective for small children, Dr. Madan said, because they need to evaporate fully to kill all the germs, and little kids may be rushing off to touch toys or other kids before the sanitizer has dried. For people of all ages, hand washing is preferable to hand sanitizer, though sanitizer is a

decent option if hand washing is not possible.

Several experts recommended making hand washing into a game. “You can even make it into a competition,” said Judith Matloff, who teaches conflict reporting at Columbia University Graduate School of Journalism and is the author of the upcoming book “How to Drag a Body and Other Safety Tips You Hope to Never Need: Survival Tricks for Hacking, Hurricanes and Hazards Life Might Throw at You.” Compete with your kids to see who can wash their hands the longest, or who can make the suds the biggest.

If you have a little nose picker, Dr. Madan suggested saying something like, “Do you remember when your friend was out sick last week? Being sick is part of being human, but when you’re picking your nose, you can get boogers on your fingers and they can spread germs to your friends.” She also recommended an episode of the show “Ask the StoryBots” on Netflix called “How Do People Catch a Cold?” for an age-appropriate explanation for little kids about how germs work.

Frame potential school closures as a positive.

If schools are closed, Dr. Poltorak recommended saying something like, “There’s lots of icky bugs going around and we’re going to hang tight at home so they can clean the schools out.” Try to frame it as a positive — more time at home where we can have fun! — rather than something to fear, especially among the youngest children. Matloff also suggested preparing now for potential closures by shopping for new games, books and arts and crafts supplies.

If schools do close, try to maintain a routine as much as you possibly can. Rebecca Kanthor, a Shanghai-based reporter,

wrote a piece for us about what life is like under coronavirus quarantine in China. In addition to keeping a routine, experts recommend making sure your kids get enough exercise. Matloff suggested having your kids keep a quarantine journal where they can write or draw their thoughts and experiences, which can help keep them occupied and process their anxiety.

Finally, several experts recommended that you try to enjoy the time together as much as you can, without losing your mind. "With few distractions, I'm reminded how much I should cherish these moments together," Kanthor wrote. "I will, I promise — after I'm done hiding out in the bathroom."

5 Ways to Help Teens Manage Anxiety About the Coronavirus

Adults can help by making sure adolescents don't overestimate the dangers or underestimate their ability to protect themselves. BY LISA DAMOUR

PEOPLE OF ALL ages are concerned about the spread of the coronavirus, and teenagers, as a group, tend to experience emotions especially intensely. If you are raising, teaching or otherwise caring for an adolescent who is feeling very nervous about it, here are five things you can do.

Normalize anxiety.

Anxiety can be healthy. But not all adolescents, or adults, know that it typically acts as a useful and protective emotion. Accordingly, teenagers sometimes fear that their heightened nerves signal the onset of a full-blown anxiety disorder. They become worried about the fact that they are worried.

Adults can help young people appreciate that healthy anxiety has a purpose: It alerts us to potential threats and helps us move toward safety. "Feeling some anxiety," we might say calmly, "makes sense right now. You're having the right reaction to the emerging news about the coronavirus."

From there, we can encourage teenagers to channel their

discomfort into useful action, such as learning about and following the recommended health guidelines.

Offer perspective.

For psychologists, anxiety is unhealthy only when it occurs in the absence of a threat — when there is nothing to be worried about at all — or when it reaches heights that are grossly out of proportion to the threat involved, such as when a teenager experiences a panic attack over a minor quiz. We can help adolescents keep their worries about the coronavirus at an appropriate level by making sure they don't overestimate the dangers or underestimate their ability to protect themselves from those dangers.

Toward this end, we might say, "Right now, the health risk from coronavirus is very low for most Americans." To this we can add, "And there's a lot you can do to lower your risk even further: Keep your hands clean and away from your face, avoid anyone who might be coughing or sneezing and protect your immune system by getting enough sleep."

Shift the spotlight.

During difficult times, research suggests that teenagers feel better when they turn their attention to supporting others. After a 2006 flood destroyed a small town in southern Poland, one study found that the teenagers who provided the highest levels of social support to fellow flood victims were the ones who went on to express the most confidence about their ability to face challenges in their own lives.

Knowing this, we can remind teenagers that we wash our hands and follow other health recommendations not only to

protect ourselves, but also to help to ease the strain on local medical systems. Along the same lines, adults can note that making personal sacrifices — such as postponing a vacation or staying home if we're not feeling well — helps to reduce the chance of carrying illness into our own communities. If you are stocking up on groceries in case of being asked to self-quarantine, take the opportunity to talk to your kids about the challenges faced by people in need and consider donating nonperishables to a local food bank.

Encourage distraction.

When we fixate on dangers, anxiety grows, and when we turn our attention elsewhere, it shrinks. That said, it might be hard for some teenagers not to obsess about Covid-19 given that the topic pervades headlines and social media, and that concerns about disease spread have been closing schools and causing the cancellation of long-scheduled events.

Further, the constant availability of fresh information about the coronavirus may spur some teenagers (and adults) to compulsively check for news updates. This, however, may offer little emotional relief. Research shows that obtaining clear information about a potential threat helps people feel better, but ambiguous information does nothing to reduce anxiety or the urge to seek reassurance. Remind them not to rely on rumors or unreliable sources.

So long as the updates remain vague, teenagers who are feeling highly anxious about Covid-19 should be encouraged to take a break from seeking, or even accidentally encountering, information about the virus. For example, we might ask teenagers to consider scaling back how often they check their

phones for information updates, or to trust that we'll share any significant news should it arrive. Similarly, we might encourage finding distractions, such as doing their homework or watching a favorite show, while shielding themselves from digital intrusions.

Manage your own anxiety.

Anxious parents are more likely to have anxious teenagers. This research finding has many possible explanations, but here's one: young people look to adults for cues about how nervous or relaxed they should be when encountering something new. Wittingly or not, parents are sometimes fearful in a way that puts their children on edge.

Teenagers can tell when adults are saying one thing and feeling another. Offering reassuring words won't do much good when our own anxiety is riding high. And being worn thin by tension leaves us less able to comfort teenagers and young adults who feel upset about missing events or enjoying spring on their college campuses.

Before trying to support a fretful teenager, tense adults should take steps to calm their own nerves. To do so, they can use the same strategies outlined above.

Modeling a level-headed response is the best way to keep anxiety from getting the better of our teenagers as we all find our way through this new and uncertain challenge.

As Coronavirus Spreads, How You Can Protect a Family Member in a Nursing Home

Residents of care facilities can be especially vulnerable to respiratory illnesses. Here's what you can do to help.

BY AIMEE ORTIZ

THE CORONAVIRUS DEATH TOLL at a nursing facility in Seattle raises difficult questions: Are nursing homes and assisted living facilities in the United States prepared for a serious public health threat? If you have a loved one in a facility, should you be concerned about their health and safety? And what, if anything, can you do?

More than 4 million Americans live in or are admitted to nursing homes and skilled nursing facilities each year, according to the Centers for Disease Control and Prevention. Here's an explainer of the issues often found in nursing homes, and how you can help protect a family member if they live in one.

Research the facility.

To begin, research the facility where he or she lives, specifically looking at staffing and sanitation ratings.

Charlene Harrington, a professor emeritus at the University of California, San Francisco, School of Nursing, who studies nursing homes, suggests using Medicare's Nursing Home

Compare tool, which lists "every Medicare- and Medicaid-certified nursing home in the country." The website ranks staffing levels, health inspections and other categories.

Understaffing has been one of the more significant issues facing most nursing homes, said Professor Harrington, and hand washing is a huge problem.

"They don't have enough staff, and so they hurry and they don't wash their hands between residents," she said.

Long-term care facilities can also be breeding grounds for infections.

Of the 15,000 nursing homes in the country, "almost 3,000 of these have a one-star rating on their health inspections," according to a statement released in June by the Centers for Medicare and Medicaid Services.

Between 1 million to 3 million serious infections, including diarrheal diseases and antibiotic-resistant staph infections, occur every year in these facilities, according to the C.D.C. These infections kill as many as 380,000 people each year.

Visit frequently, if you are allowed.

Many nursing homes are limiting or banning visits amid the coronavirus outbreak. But when you are able to spend time at your loved one's home, look to see that basic protocols, like frequent hand washing and sanitation, are being followed. If something isn't being met, be gentle yet firm when talking to an administrator, or even take your needs and concerns to the facility's director of nursing.

Family members should monitor their loved ones "to make sure that if they do come down with the virus, that they're being cared for, that they're being hydrated," said Dr. David Dosa, a

geriatrician and professor of medicine at Brown University, where he studies disaster preparedness. “That they’re being treated like somebody should if they have a viral illness.”

With your loved one, be sure to ask questions about what they ate for lunch, whether they had juice or tea, what activities they have done during the day. Even if they have cognitive issues, you will probably receive an honest response.

Have a plan.

Check with the facility to learn what their plans are if an outbreak occurs, and ask what they are doing to ensure they have enough medical and safety supplies in the event of an outbreak.

To protect their residents and staff, nursing homes may turn away visitors and quarantine residents in the event of a coronavirus outbreak.

If you cannot enter, speak with an administrator or the director of nursing in a respectful and succinct way.

Think about your loved one’s needs, and “just very carefully and clearly iterate” your concerns to the staff about their vulnerabilities, said Richard J. Mollot, executive director for the Long Term Care Community Coalition, a nonprofit advocacy group based in New York.

He also recommended, if you cannot enter the facility, that you ask specifically how your loved one is getting the care they need. If they need therapy, how are they receiving it?

If there’s an emergency with your loved one, do not hesitate to call their physician, whether inside the facility or not. Remember that you can tell these facilities to send your loved one to a hospital, or send an ambulance for them yourself.

“It’s not a prison,” Mr. Mollot said. “People can leave.”

If you suspect or are worried about abuse or neglect, you should speak with senior staff at the facility, like the licensed nurse and the administrator.

"And if you don't get satisfaction there," he said. "I would call the police and explain to them. The police have a duty to protect residents in facilities as well."

When to take your loved one out.

It can be hard to remove a resident out of these types of facilities, especially if they are extremely frail, have a chronic condition or otherwise need constant care, experts agreed. And it could be a very hard and difficult situation for you and your loved one.

Nursing homes and skilled nursing facilities provide basically 24-hour support for residents; this type of care could be difficult to replicate at home, said Dr. Michi Yukawa, a geriatrician professor at the University of California, San Francisco, who also works as a medical director at a nursing home.

"It'll be resource-intensive," she said, noting that it depends on how much care your loved one needs.

"Some nursing-home residents could be managed for a short period of time," she said.

"I think the best the families can do is to visit them as often as possible, and make sure there's hand washing going on," Professor Harrington said, adding that families need to be "really vigilant."

If you are going to move your loved one, be sure to have a plan that accounts for all their medical and logistical needs — like if they need help bathing or taking medicine. You'll have to inform the nursing home of the move, and ask for a discharge

planning meeting.

"If you want care from a home health agency, the nursing home should assist you with making the necessary arrangements," said Robyn Grant, public policy director at the National Consumer Voice for Quality Long-Term Care, a leading advocacy group. "Alternatively, you can hire private caregivers or plan to provide care yourself and/or with other family members."

If you hire a home health agency, Ms. Grant recommends you "ask the agency what precautions and measures home health staff will take when caring for your loved one. Then monitor to ensure those measures are being taken."

Make sure anyone involved in the care of your loved one knows the safety measures for Covid-19 as well as the symptoms.

"Anyone providing direct, hands-on care to your loved one should also follow measures recommended by the C.D.C., such as hand hygiene before and after contact with your loved one," Ms. Grant said.

Family members and visitors should follow these basic guidelines from the C.D.C.

And if you're considering another facility, she said, "give careful consideration to the facility you select," and try to find out if the nursing home has any confirmed Covid-19 patients.

"After that, research a facility's past performance to see if they have a history of infection-control violations," Ms. Grant recommended. "Educate yourself about good nursing home infection-prevention practices" and then ask about the facility's infection-prevention plan.

Lastly, try to visit the home, if possible, and observe that "they appear to be practicing good infection prevention."

Regardless of location, older adults must remain top of mind.

The majority of older adults do not live in long-term care facilities, yet they are still a vulnerable population, Katie Smith Sloan, the president and chief executive of LeadingAge, an association of nonprofit providers of aging services, said in a statement.

Fewer than 5 percent of older adults live in nursing homes, she said, and 2 percent live in assisted living.

"While the focus is on nursing homes, there are many older adults living in community who don't have the benefit of heightened awareness of and plans for infection control and awareness," she added. "We all need to be mindful of older adults' needs and proactive in following recommendations from public health officials regarding coronavirus prevention."

Mike Baker contributed reporting.

PART 2

Staying In

How to Self-Quarantine

Thousands who may have been exposed to the coronavirus have been asked to seclude themselves. It's harder than it sounds. **BY RONI CARYN RABIN**

STAY HOME UNLESS you must see a doctor. No work, school or shopping. If you must come out of your room, wear a mask. And don't share towels.

If you are among the thousands of Americans now self-quarantined because of possible infection with the coronavirus, these are a few of the new house rules, courtesy of your local health officials and the Centers for Disease Control and Prevention.

Self-quarantine and self-isolation are different. The first measure is for the large numbers of healthy people who may fall sick following possible exposure. The second is for people who are ill with the coronavirus — they are a danger to their family and visitors, and must be watched carefully in case they deteriorate.

At the moment, with testing still not available in much of the country, it is hard for many Americans to know whether they are infected or just being prudent.

State and local governments generally have the power not just to advise quarantine but to order it. The situations under which they do so may change frequently as the perceived threats change.

Right now, Americans in some states are being asked to stay home if they have returned from parts of China and Iran; if they have symptoms, like fever and a dry cough, and have spent time in other countries or on cruise ships; or if they are ill without any known source of infection.

Some people are choosing to seclude themselves even if they are not sick, because they worry they may have been exposed and don't want to put others at risk.

It may sound like a vacation from reality, an ideal time to binge on Netflix and catch up on sleep. In fact, it's not easy to lock yourself away from family and friends. There are practical and logistical challenges, and yawning gaps in the official advice that make it even harder.

Home quarantine can be unpleasant and will probably last for two weeks, which is the presumed incubation period for the virus. It is especially challenging if you have young children or elderly relatives to care for, or live in cramped quarters with a lot of roommates.

The basics

SEPARATION: If you are potentially infectious, it is important that you separate yourself from your partner, your housemates, your children, your elderly aunt. To be on the safe side, you shouldn't even pet your dog, according to the C.D.C., although pets are not known to transmit the coronavirus.

A room must be designated for your exclusive use. A bathroom should be, too, if possible. Every surface you cough on or touch could become contaminated with the virus.

You should have no visitors, and keep three to six feet away from others. Don't take the bus or subway, or even a taxi.

MASKS: If you must be around other people — in your home, or in a car, because you're on your way to see a doctor (only after you have called) — you should wear a mask, and everyone else should, too.

But first, you or one of your friends or family members have to find masks, which are sold out almost everywhere. If you can't, you can create a makeshift one from a scarf or other garment.

HYGIENE: If you cough or sneeze, you should cover your mouth and nose with a tissue, and discard the used tissue in a lined trash can. Then you must immediately wash your hands with soap and water for at least 20 seconds.

You can use sanitizer, if you can find it, but soap and water are preferred.

Even if you haven't coughed or sneezed, you should wash your hands frequently, and avoid touching your eyes, nose and mouth, if you haven't just washed them.

DISINFECT: Don't share dishes, drinking glasses, cups, eating utensils, towels or bedding with anyone (including your pets). Wash these items after you use them.

Countertops, tabletops, doorknobs, bathroom fixtures, toilets, phones, keyboards, tablets and bedside tables are considered "high-touch surfaces" — wipe them often with a household cleanser.

Frequently wipe down surfaces that may be contaminated by bodily fluids, including blood and stool.

MONITORING: Keep an eye on your health and call a doctor if you develop symptoms or if they worsen. Make sure to tell

the medical staff that you are at risk of infection with the coronavirus.

HOUSEHOLD MEMBERS: Housemates can go to work or school, but it's going to be their job to stock up on groceries, pick up prescriptions, take care of the quarantined and keep the place clean.

They'll be wiping down doorknobs and countertops, doing loads of laundry and washing their hands — a lot.

Family members and other occupants should monitor the patient's symptoms and call a health provider if they see a turn for the worse.

When around a symptomatic patient, household members must wear a face mask, as well as gloves if they have contact with his or her bodily fluids. These should be thrown away immediately, never reused.

Elderly members of the household and those with chronic medical conditions risk severe complications, even death, if they become infected. Pregnant women may also be at particular risk, although the data aren't clear. Contact with the secluded individual should be minimized.

In China, 70 to 80 percent of transmission occurred within family clusters, according to the World Health Organization. Local governments there were forced to set up isolation wards with thousands of beds in gymnasiums and stadiums to care for people who lived alone or were at risk of infecting their families.

Family members should monitor their own health, and call a doctor if they develop a cough, fever or shortness of breath, signs of Covid-19, the technical name of the illness caused by the coronavirus.

Unanswered questions

No one pays you for self-quarantine. There is no reimbursement for products you may need, no government home aide to stop by and help out. Self-quarantine is a hardship, both emotional and financial, for those who have families and those who live alone.

Not everyone can work remotely. A two-week absence from work can take an enormous financial toll on hourly wage workers who have to clock in and show up to get paid, or who are part of the gig economy with no single employer.

Many Americans live paycheck to paycheck.

"We have to have social interventions to incentivize and support isolation, or we are doomed," said Arthur Caplan, professor of bioethics at New York University Langone Medical Center.

People with no health insurance, inadequate insurance or no regular doctor will be reluctant to seek care if they have symptoms, fearing steep medical bills, he noted. Undocumented individuals, fearful of being discovered and deported, may avoid diagnosis and care.

"I don't see the state or federal government preparing for this in any way," Dr. Caplan added.

Senator Patty Murray, Democrat of Washington, and Representative Rosa DeLauro, Democrat of Connecticut, have introduced legislation that would require all employers to let workers accrue seven days of sick leave, and provide another 14 days for immediate use during a public health emergency.

Washington State's website says the health department can help with groceries for those unable to leave their homes and even intervene with employers on their behalf if necessary.

Providing for people who make sacrifices for the greater

good is crucial, said Lawrence Gostin, a law professor at Georgetown University and director of the World Health Organization Collaborating Center on National and Global Health Law.

"We ought to have a social compact: If you're sick, whether you've got Covid-19 or not, you should separate yourself from society," Mr. Gostin said. "That's your part of the bargain, you're doing it for your neighbors, your family and your community."

"In exchange," he said, "we as a nation owe you the right to a humane period of separation, where we meet your essential needs like medicine, health care, food and sick pay."

Donald G. McNeil Jr. contributed reporting.

Working From Home: How Coronavirus Could Affect the Workplace

Businesses are grappling with how to deal with a potential outbreak. Here's what they're doing, and how it could affect their workers. BY TARA SIEGEL BERNARD

FURLOUGHS. SICK LEAVE. Working from home.

You could experience any of these measures as businesses try to prevent their employees from being exposed to the coronavirus outbreak that health officials warn is almost inevitable in the United States.

Some companies have already taken precautions like limiting travel to affected countries or big international conferences. Others have asked employees to stay home because they visited a country with a more serious outbreak.

But with a growing number of American workers have been or could soon be asked to alter their routines, or just stay home.

Exactly how that affects you will depend on many factors, including the generosity of your employer's benefits and where you live. Here's what labor lawyers and business groups say could potentially unfold in your workplace — and what rights workers have.

What are companies doing now?

The situation is ever-evolving as the virus continues to spread — and policies are being revised daily as employers monitor public health notices.

Nobody wants employees to come to work if they are sick or have been exposed to the virus, but U.S. workers are less likely to be covered by a paid sick leave policy than those in other developed countries.

"This can put hourly workers in a bind, and make employees in the U.S. more likely to show up for work when they are sick," said Joseph Deng, who specializes in employment and compensation law at Baker & McKenzie in Los Angeles.

The Centers for Disease Control and Prevention has recommended that employers establish "nonpunitive" policies, encouraging employees who are sick or exhibiting symptoms to stay at home.

"We may see companies develop more flexible and generous sick leave policies," Mr. Deng said. That could reduce the hard choices that employees have to make.

What can my employer ask me to do?

If you have recently traveled abroad, your employer may ask you to stay home for the virus's incubation period, which is generally up to 14 days. The same goes for people who have had close contact with someone who visited an affected region.

"We see that there are things that are starting to get a little more intensive in the U.S. but we are not anywhere near a state of emergency," said Alka Ramchandani-Raj, an employment lawyer who specializes in occupational safety and health

law at Littler, a large labor and employment firm. “Although numbers are going up daily.”

Northwell Health, the largest health system in New York, asked 16 people — including eight clinicians who cannot do their job at home — to take a two-week paid furlough after visiting China, said Joseph Moscola, the company’s senior vice president and chief people officer.

Even if workers appear healthy at the end of the incubation period, their employers could require a medical exam.

“If there is factual evidence someone has been exposed to the virus, an employer may ask that person to go through a medical exam or fitness for duty exam to determine whether they are ready to return to work,” Ms. Ramchandani-Raj said.

Will I be paid if I’m told to stay home?

This largely depends on your company’s policies, but so far many larger businesses are seeing to it that affected employees get paid, one way or another.

Employees showing symptoms are generally taking sick leave or emergency leave, while those affected by quarantines have been working from home when that’s possible, according to a survey of 48 large employers with operations in the United States by Business Group on Health, which represents employers on health care and benefit matters.

Sixty-eight percent of the employers surveyed said they would pay employees as long as a quarantine lasted, even if they showed no symptoms and couldn’t work from home because of the nature of their job. Twelve percent said they would pay for a fixed amount of time, such as two weeks. Twenty percent of the companies, which were surveyed from

Feb. 13 to Feb. 20, 2020, said they didn't know or hadn't made a decision yet on what they would do.

Paying workers in these situations "will serve to incentivize employees to self-identify and self-quarantine," said Susan Gross Sholinsky, a lawyer with Epstein Becker Green in New York.

But American employers aren't obligated to pay most workers, which may affect the response of businesses — particularly smaller employers.

Federal law requires that hourly workers be paid only for the time they work. Salaried workers, managers and executives will usually, but not always, be paid during a business disruption, Mr. Deng said. Employers who are not paying for quarantine periods often let workers use vacation, sick time, personal days and other available paid time off — if workers have it.

Union workers should review their collective bargaining agreements because they may have provisions that provide paid time off in an emergency, according to the Society for Human Resource Management.

What happens if I or a family member get sick?

This also often depends on the generosity of your employer, labor experts said, because there are no federal requirements for employers to provide paid sick leave, even in the event of a natural disaster.

Roughly a dozen states and several cities — including California, Michigan, New Jersey, Washington, San Francisco and New York City — provide paid sick leave to many workers, often including those working part-time.

But the amount of paid leave will vary, and often depends on the size of the employer and how long someone has worked there. These policies typically extend to caring for family members as well.

If workers are seriously ill or take a while to recover, they may be entitled to unpaid leave under the federal Family and Medical Leave Act, but that doesn't cover an estimated 40 percent of workers. Employees could also be eligible for short-term disability benefits depending on their workplace insurance or their state's requirements, Ms. Sholinsky said.

"Or, if the illness is work-related — if the employee caught the virus while on business travel, for example — the employee may be entitled to workers' compensation insurance" she added.

What are my rights if I'm worried about going to work?

That's a common question as anxieties rise and even subway poles and elevator buttons appear more perilous.

"Employers have to be very careful and do a strict case-by-case assessment of whether that is a valid concern or not," Ms. Ramchandani-Raj said.

Employees have a right to a safe workplace, she added, and employers must adopt neutral policies that protect everyone equally. But if pregnant women were deemed to be at greater risk, for example, and the government released guidance saying they should take extra precautions, employers would need to follow the government's lead.

You could ask to work from home, but that's not possible for, say, a retail clerk or salesperson. You'd probably have to use any paid time off or take a leave of absence — if that's an

option.

Can my employer ask me to wear a mask?

Maybe.

Let's say you show up at work one day and find extra Purell dispensers and a box of medical masks.

If your employer wants to require you to wear a mask, it would be legally required to provide training on how to use and maintain them, Ms. Ramchandani-Raj said. There are other conflicts, too: Some employees might have medical conditions that are worsened by wearing a mask.

Instead, companies might make the masks available — without requiring employees to wear them.

Will my employer tell me if a colleague is infected?

The C.D.C. has said that if an employee infection is confirmed, employers should tell their co-workers that they may have been exposed to the virus.

But they shouldn't tell you that person's name — federal law requires them to maintain the confidentiality of the sickened person.

Emily Flitter contributed reporting.

Stocking Your Pantry, the Smart Way

Here's what you really need to keep on hand.

BY MELISSA CLARK

HAVING A WELL-STOCKED pantry is always a good idea, whether you're looking to throw together pasta with anchovies when there's nothing in the fridge, or you want to avoid going grocery shopping when the weather is vile.

It's also true that a well-stocked pantry can provide a sense of safety and control when the news is frightful and the future uncertain. Not only can shelves filled with bags of rice, cans of beans and bins of garlic give us a sense of order, they're also the beginning of many excellent meals.

The question is, what should you buy? Here are some of my personal strategies for buying wisely and eating well.

PASTA: It's nice to have both long, thin pasta (like spaghetti or linguine) and short, textured pasta (like fusilli or orecchiette) on hand. Having both keeps meals from getting repetitive. And if you're a boxed mac and cheese fan, stocking a couple of those is never a bad idea.

RICE: Brown, white, long-grain, short-grain, I always have them all around, plus Arborio for rice pudding and risotto.

STOCKS AND BROTHS: Whether meat- or vegetable-based, boxed broths are essential for soups, stews, and make the base of pan sauces. And they won't take up valuable freezer space.

BEANS: Home-cooked dried beans taste better than canned beans; canned beans are more convenient and faster than the dried kind. It's always good practice to have both.

CURED MEATS: Cured meats keep for weeks in the fridge, and a chunk of smoked ham or salami in your bean pot adds so much flavor. But don't forget the bacon.

EGGS: They're a welcome addition to so many dishes — and, of course, stand on their own. Not to mention, they keep for a long time in the fridge.

FROZEN FRUITS AND VEGGIES: Use the fruit in smoothies, and the vegetables in soups, stir-fries and stews. I'm partial to frozen spinach, artichokes, kale, corn, peas and lima beans. As for fruit, I like blueberries, mixed berries, peach, mango and cherries. (I also like to throw ripe bananas into the freezer, to extend their lives a little.)

CANNED FISH: Anchovies, sardines, tuna and salmon are the building blocks of many of my favorite meals. Anchovy toast is a staple at my house.

TAHINI AND PEANUT BUTTER: For hummus, for sauces, for salad dressing, for cookies, for sandwiches, for snacking. To mix things up, try using peanut butter in your salad dressings,

and tahini on your jam sandwiches. Almond and cashew butters are also great pantry additions, if you prefer.

PARMESAN AND OTHER HARD CHEESES: These kinds of cheeses last for months in the fridge if you buy blocks rather than pre-grated. Or store the pre-grated kind in the freezer. You can also buy some cheese sealed in wax, which increases how long you can store them. Cream cheese is also important, for bagels and otherwise.

OLIVE OIL, VINEGAR, LEMONS: I can't cook without them.

NUTS AND DRIED FRUIT: For snacking and baking.

FLOUR, SUGAR, YEAST: For baking projects.

BUTTER: It will keep for weeks in the fridge and longer in the freezer.

GARLIC, ONIONS AND SHALLOTS: No pantry is complete without them.

ROOT VEGETABLES: Potatoes, sweet potatoes, beets, carrots, parsnips, turnips, radishes. Radishes and turnips are excellent in salads and last for weeks in the produce drawer. If they get soft, soak them in a bowl of ice water until they firm up. Consider ginger for stir-fries and making into tea.

CELERY: Use the leaves as an herb and the stalks in salads. Or stuff them with peanut butter or tahini for snacks.

SCALLIONS: If you leave the roots on and put scallions in a container of water on the counter, you can cut off the green tops, and they will grow back three or four times. My mom taught me this trick.

SPICES: If you can't remember when the last time you bought new spices was, consider buying some the next time you're at the store: Fresh spices have so much more flavor than old ones.

9 Shows for Social Distancing

What do a musical mockumentary, an addiction sitcom, two true-crime docs and a pottery competition have in common? They can all help you remove yourself from society. **BY MARGARET LYONS**

STAYING HOME SHOULD be the easy part, but pandemics and snow days are not quite the same. Looking for a few hours of distraction between vigorous hand-washings? Need a moment away from Twitter? These are some wonderful shows to get you through.

I want to actually laugh, not just say 'Oh, that's funny.'

Watch 'Sherman's Showcase,' on Hulu

If you like pop culture and satire, watch this fantastic series about a "Soul Train"-esque show. "Sherman's" is part sketch series, part mockumentary, and it's one of the rare comedies capable of genuinely surprising its viewers. It's silly and easy to love, and its jokes are surgically precise. It also moves quickly enough that you will actually want to watch watch it, not half watch while playing Candy Crush or making couscous or whatever.

I want a comedy, but nothing requiring much focus.

Watch 'Mom,' on Hulu

The jokes on "Mom" tend toward the banal, but the story and

characters are anything but, which is why I find myself so committed to a sitcom I don't find funny. It's good in other ways! Allison Janney and Anna Faris star as Bonnie and Christy, mother and daughter, long estranged but now reconnecting because they are both, after much struggle, sober. The show evolves tremendously over its run, eventually ditching almost all of its workplace story lines and writing Christy's children off the show and instead focusing on the other women in Bonnie and Christy's AA group. The show is serious about addiction and presenting its real struggles and dangers — but it's also serious about recovery, about its real work and real joy. Also the guest-star roster is crazy good — Patti LuPone, Ellen Burstyn, Kathleen Turner, and plenty of sitcom royalty.

I need something engrossing but not political or even relatable.

Watch 'The Stranger,' on Netflix

I think this is my favorite binge so far this year, a twisty domestic thriller based on a Harlan Coben novel. Adam, a suburban dad in a bucolic British town, is at his son's soccer tournament when a strange woman approaches and tells him that his wife faked her pregnancy and miscarriage a few years ago. It's a bizarre and jarring encounter, and one that sets off eight juicy episodes of twist after twist. The show includes death and violence, including violence against an alpaca, but this isn't a wall-to-wall murder show.

If you like it, and blaze through it in a single sitting (as I did), follow it with "Doctor Foster," on Netflix, an addictive domestic soap about a fancy doctor who, after discovering her husband is having an affair, goes a little off the rails. This is

much sudsier than “The Stranger,” but a lot of dark fun.

I love true crime, but I don’t want to feel frightened in my own home. And please, no dead kids.

Watch ‘McMillions’ and ‘The Most Dangerous Animal Of All,’ on HBO Now and Hulu

All the engrossing propulsion of your favorite crime stories, but none of the “Wait … could this happen to me?” or “By participating in society I am complicit in this injustice, and thus I must work to rectify it.” Just the wild characters of real life, some crazy stories and the opportunity to contemplate the ways in which systems of authority and systems of identity overlap in America. “McMillions” is about scamming the McDonald’s Monopoly game, but it’s also about wealth and vulnerability in general; “Animal” is about a man who believes his father was the Zodiac Killer, but it’s also about self-mythology and the quest to situate oneself within a chaotic universe.

Also, both of these shows are easy to follow, so if not everyone in your household wants to devote their full attention to them, but still wants to watch them a little, that will work just fine.

I want something chill but with real human emotions.

Watch ‘The Great Pottery Throw Down,’ on YouTube

This is the pottery version of “The Great British Baking Show,” but it’s even more fun and relaxing — not only because watching people throw pots is deeply hypnotic but also because the judging is more cheerful and the contestants somewhat less neurotic. The artistry on display is wonderful, but the best part is that one of the judges, the expert potter Keith Brymer

Jones, is frequently overcome with pride and elation and cries often for and with the contestants.

Slightly fewer emotions, actually.

Watch 'Portrait Artist of the Year,' on YouTube

If you just want "pleasant British people attempt things," go for "Portrait Artist of the Year," also available on YouTube. It follows more of a "Chopped" model — different contestants every episode, ultimately funneling toward a championship but that's barely part of it. Mostly it's just people sitting for and painting portraits, and that's it.

Honestly, I can only concentrate for 15 minutes at a time.

Watch 'Joe Pera Talks With You,' on Adult Swim (free; no login required)

This show is already mega soothing because its protagonist is a supremely calm Michigan chorus teacher who eschews most wildness. "I like my days to go like this," he says, and then makes a straight horizontal line with his hand. That happens on the episode about packing lunches, to give you an idea about the emotional timbre of the series. That's not to say the show is boring — it's tender and hilarious, both strange and wholesome.

I'm watching with children, but can't take any more children's shows.

Watch Bon Appétit's YouTube channel

It might not entice very little kids, and there are occasional bleeped curse words, but if you're watching with a tween who likes "Parks and Recreation" or "The Office," try the Bon Appetite extended universe. My favorites are "Gourmet

Makes," where an accomplished pastry chef tries to recreate junk-food classics, and "It's Alive," which is all about pickling and fermentation. The shows are funny and good-natured and genuinely educational, and across all the various iterations form an overarching charming workplace comedy. And there are tons and tons of videos. I made my family watch episodes of this at Christmas, and I made my friends watch episodes on vacation together.

I already did plenty of crossword puzzles.

Watch 'Task Master,' on YouTube

If you like scavenger hunts, logic puzzles, obstacle courses, goofy feats of strength or British panel shows, this show is a total blast. Each season, a group of comedians compete in bizarre and arbitrary tasks, where cleverness winds up being more important than physical prowess, though the prowess often helps. If, as a child, you liked those minute-mystery riddles where someone got stabbed with an icicle and you grew up to have a sense of humor, you will like this show.

PART 3

Travel, Money, and Other Concerns

Travel and the Coronavirus: Answers to Your Top Questions

Contemplating travel right now is confusing. Here is advice from experts on how to navigate the changing landscape. **BY ANDREA SALCEDO**

AS THE CORONAVIRUS continues to spread across the globe, the questions of whether to travel and where it's safe to go have become increasingly complicated.

The State Department has issued a global Level 3 health advisory telling U.S. citizens to "reconsider travel" to all countries because of the global effects of the coronavirus. This is the department's second-highest advisory. A Level 4 advisory, which has not been issued as of March 16, 2020, would mean "do not travel."

Experts say you need to stay informed. Here is their advice on some of the most pressing questions facing people who might be considering traveling.

Who is covered by President Trump's European travel ban?

On the same day that the World Health Organization declared the coronavirus outbreak a global pandemic, President Trump announced he was suspending travel from Europe to the

United States, beginning on March 13. The administration later extended the ban to include those traveling from the United Kingdom and Ireland. The ban applies to foreigners who have been in the 26 countries that make up the European Union's Schengen Area, as well as England, Scotland, Wales and Northern Ireland in the last two weeks. For a complete list of the 26 countries, visit the Department of Homeland Security's website.

Initially, Mr. Trump had said the ban would be in place for 30 days, but later the White House said the restrictions will remain in place "until terminated by the President."

I am an American in Europe. Can I fly home after March 13?

Yes. There's been some confusion following President Trump's announcement that he would restrict the entrance of travelers from Europe to the United States. Some Americans in Europe scrambled to get home after learning about the impending deadline.

But the ban does not apply to American citizens and lawful permanent residents of the United States, according to Mr. Trump's proclamation.

The travel restrictions also generally exclude the immediate families (spouses, parents and siblings) of American citizens and permanent legal residents. However, those travelers might be directed to certain airports for enhanced screening.

Members of the U.S. Armed Forces, including their spouses and children, are also exempted from the ban, the proclamation stated.

I have a vacation to another country planned. Is it safe to go?

The State Department's global Level 3 health advisory tells United States citizens to "reconsider travel" to all countries because of the worldwide effects of the coronavirus. This is the department's second-highest advisory. A Level 4 advisory means "do not travel."

Many areas around the world with confirmed cases of coronavirus are taking measures like quarantines and border restrictions to limit the mobility of travelers, according to the Level 3 advisory.

The State Department added that travel may be restricted "without notice" even in areas across the globe where no cases of Covid-19 have been reported thus far.

Choosing to travel is still up to you, experts said. But the advisory should not be taken lightly.

"This is a more stringent recommendation concerning travel, and although it's not prohibiting travel, it's certainly suggesting that you should not take a trip abroad," said Dr. Isaac Weisfuse, an adjunct professor of epidemiology and infectious diseases at Cornell University Public Health.

If you must travel, Dr. Weisfuse said, you should take strict safety precautions to protect yourself against the virus, like avoiding large crowds and regularly washing your hands.

"You are increasing your risk of exposure by traveling, especially if it is by bus, train or plane," Dr. Weisfuse said.

"My overall opinion is to not travel abroad," he added. "If it were me, I wouldn't travel abroad."

Dr. Danielle Ompad, an infectious disease epidemiologist and associate professor at New York University School

of Global Public Health, said you should consider the consequences that choosing to travel during the outbreak could have for your community.

"It's not about me," Dr. Ompad said. "It's about keeping other people safe and reducing the risk of transmission."

You could also face the risk of being put in quarantine at a border or at a facility once you return home. Your employer may also ask you to stay home if you have recently traveled, Dr. Ompad said.

"You need to think carefully about whether or not that fits with your life," said Dr. Ompad, who recently canceled two trips because of the outbreak. "It really is this kind of internal calculation that people have to make."

What about domestic travel? Are there restrictions? Is it safe?

On March 12, President Trump said that he could restrict domestic travel to regions of the United States in addition to the ban on most travel from Europe.

When asked by a reporter in the Oval Office whether he was considering restricting travel inside the country to hard-hit states like Washington or California, Mr. Trump said the subject had not yet been discussed.

But, he added: "Is it a possibility? Yes, if somebody gets a little bit out of control, if an area gets too hot."

Some hard hit states have declared a state of emergency or a public health emergency, including Washington, California, New York and Florida. As a practical matter, a state of emergency or a public health emergency do not affect travel — flights are not canceled and the C.D.C. does not issue any travel

restrictions.

States of emergency are used by local and state governments to help them shift funding, as well as to have the authority to close schools and other facilities.

Those additional powers also mean that travel could be restricted, if the state or local government thought it necessary, said Jessica Justman, a professor of epidemiology at Columbia University's Mailman School of Public Health.

"That flexibility that the government then gains might allow the government to lay out certain policies and those policies in turn could easily affect what an individual can do or not do."

Even though domestic travel has not been restricted, Dr. Weisfuse said the most responsible thing is to avoid it.

"It looks like coronavirus is spreading through the United States and the safest place to be is probably at home, taking precautions," she said.

Dr. Justman said there were two things to think about: "Who you are and who is in your network."

If you spend a lot of time around older people or someone who has a chronic illness — sections of the population at a higher risk of the coronavirus — traveling domestically would pose a risk to them. But for younger people who are not around those two groups of people, she said: "It's going to be easier for them to decide to go and visit other cities."

I'm thinking of driving instead of flying. Is that safer?

The issue is not whether you fly or drive, said Dr. Krutika Kuppalli, an infectious diseases physician and vice chair of the Infectious Diseases Society of America Global Health Committee, but why you are going at all.

The whole idea of avoiding nonessential travel and promoting social distancing is to stay close to home to prevent the outbreak from spreading.

Though, admittedly, in a car you would be less exposed to the virus than you might be on a plane, the same is not true when you get out of the car.

"It's about what you're going to do when you get there," Dr. Kuppalli said. Once you got to your destination, you would likely still be having contact with other people, she added.

If I cancel my flight, will I get my money back?

It depends. Typically, you would have to at least pay a cancellation fee or booking penalty if you did not buy a fully refundable ticket, which is usually more expensive.

But the coronavirus has hit airlines hard, and many, including Delta, United and American, are loosening their booking policies and suspending cancellation or rescheduling fees.

"At the moment, the airlines are being very helpful," said Jonathan Breeze, chief executive of AardvarkCompare Travel Insurance, a travel insurance company. "These are not normal circumstances and the airlines are seeing that people are not booking flights, so airlines are offering commercial flexibility."

I can't get my airline on the phone. What should I do?

"Obviously, the 800 numbers are overwhelmed," said Michael Holtz, the founder and chief executive of SmartFlyer, a luxury travel agency. "Because of the coronavirus and the news, things have just spiraled out of control and a lot of people have questions."

Many of the major airlines in the United States informed

travelers that they could expect longer wait times to speak to a customer service agent.

"We are receiving more calls than we typically do and your hold time may be longer than usual," a United recorded message said. The wait time was 90 minutes.

Other airlines like Delta redirected callers to their websites and their apps, where they could find more information about rescheduling or canceling flights, a recorded message instructed. American had the option to leave your contact information for an agent to call you back in the next two hours, the longest you could hold your place in line.

Mr. Holtz said the airlines' websites and apps are travelers' fastest ways to answer their questions or change their travel plans.

"My advice is to use technology," Mr. Holtz said. If travelers have the good fortune of having a travel agent, they should contact the agent as soon as possible, as many have direct connections with airlines, he added.

Shashank Nigam, the chief executive of Simpliflying, an airline marketing strategy firm, said social media platforms like Twitter and Facebook are your best option during these times.

"Most airline social customer service staff can help cancel or reschedule flights, or answer any questions about waivers," Mr. Nigam said.

What about travel insurance?

Insurance companies have very specific circumstances under which they pay out if you decide to cancel or interrupt your trip.

Choosing not to travel because you are concerned about

getting infected with the coronavirus is not one of them, nor is a government advisory, said John Cook, president and chief executive of Quotewright.com, a travel insurance company.

"Those covered reasons are very specific and they do not include being fearful of being exposed to a virus and the government telling you not to travel," Mr. Cook said.

The answer has been to buy what is called cancel-for-any-reason coverage, which costs more, but usually lets you recoup about 75 percent of your money, Mr. Cook said.

But that option may be disappearing. Jason Schreier, the chief executive of APRIL Travel Protection, a travel insurance company with yearly sales of more than $1.1 billion, said that his company's sales of cancel-for-any-reason insurance had jumped 275 percent since the outbreak began. In March, APRIL stopped selling the upgraded policies, after its under-writers required the company to pull them from the market, saying that it was not meant to cover such a concentrated risk among travelers.

"We've never seen a spike in the any-reason purchases like we're seeing now," Mr. Schreier said. "It's an unprecedented spike, which caused an unprecedented reaction."

Other companies, like Generali and RoamRight, have also stopped letting purchasers upgrade to a cancel for any reason policy, according to letters they sent to insurance agents.

But others, including Allianz Global Assistance, are going in the opposite direction and extending their coverage. Epidemics are usually not included in travel insurance coverage, but Allianz has said that for a limited time it will accommodate claims for trip cancellation and emergency medical care for travelers who become ill with the coronavirus. Those who

cancel their trips to China, South Korea and the Lombardy and Veneto regions of Italy would also be covered, said Daniel Durazo, director of marketing and communications at Allianz Global Assistance USA.

Will I be quarantined when I come back?

Possibly.

If you travel to a city that does not have a large number of confirmed cases — or perhaps no cases at all — but the number of confirmed cases rapidly increases during your stay, it could affect what happens when you return home, said Dr. Scott Weisenberg, an infectious disease doctor at New York University School of Medicine, and director of the university's Travel Medicine Program.

"You might be restricted on your re-entry," Dr. Weisenberg said, adding that you could be asked to quarantine yourself at home, or be placed in a special facility.

Even if you are not quarantined by health officials, some companies are requiring employees who have been traveling to work remotely, he added. And things are changing rapidly.

"Those answers may vary depending on ongoing public health changes," Dr. Weisenberg said. "Once we have widespread testing available, then it will be easier for travelers to have a better idea of what the risk is in different areas."

I booked an Airbnb. If I cancel, can I get my money back?

On March 13, Airbnb updated its "extenuating circumstances" policy, making it easier to get a refund in some countries.

If you have a reservation in the United States, mainland China, South Korea or Italy, and you wish to cancel it, you can

do so free of charge for bookings generally through the beginning of April.

In the United States, if you have a reservation and you choose to cancel it, the company will fully refund you (including any fees) if you booked on or before March 13, with a check-in date of April 1, or earlier. (Check Airbnb's website for the policy for mainland China, South Korea and Italy.)

You will also get a full refund if you are traveling from the United States and have a reservation in Europe's Schengen Area. (The policy applies to reservations that have been made on or before March 11, for travel between March 13 and April 13.)

If you are a guest in any other country and you cancel, the company will fully refund your booking if you meet the following criteria: If you cannot complete your trip because of official travel restrictions, medical or disease control duties related to the coronavirus; if your flight or ground transportation is canceled by your carrier because of Covid-19 — or a suspected or confirmed cases of Covid-19; or if you are complying with disease control restrictions implemented by relevant governmental or health authorities.

Additionally, in an effort to calm other guests' travel anxieties, the company recently announced that, through June 1, guests who choose to cancel a home or an apartment booking — and who do not meet the circumstances and time frames already mentioned — will get a refund of Airbnb's guest fee, which can be up to 14.2 percent of the total cost, excluding taxes. (The refund is a coupon that you can use during your next stay.)

For any other cancellations, how much money you get back

will depend on your host's cancellation policy (flexible, moderate or strict) advertised in the property listing. (For more details on cancellation policies, visit the Airbnb page.)

Some places in the United States have declared states of emergency. Can I still travel to those places?

A growing number of states have declared a state of emergency or a public health emergency, including Washington, California, New York and Florida. As a practical matter, that does not affect travel — flights are not canceled and the C.D.C. has not issued any travel restrictions. States of emergency are used by local and state governments to help them shift funding, as well as to have the authority to close schools and other facilities.

"State of emergency or not, the same measures should be taken everywhere in the United States," said Anne W. Rimoin, a professor of epidemiology at U.C.L.A. Jonathan and Karin Fielding School of Public Health and director of the Center for Global and Immigrant Health.

The key to slowing down the virus is to avoid crowds, which means avoiding travel unless it is absolutely necessary, Dr. Rimoin said.

"For those who do choose to travel, think about what it would be like to get sick without your support network, away from home," she added. "The disease is not as mild as everyone wants to believe."

There could be other consequences, however. Your employer, for example, might decide that you have to self-quarantine once you have returned to your home state. Check and see what policies are in place before you travel.

Should I just stay home?

As of right now, Dr. Weisenberg of NYU cautioned travelers who might be tempted by a cheap airfare to put a lot of thought into whether they should book. Their safest option is to limit travel until the world has a better understanding of the virus, he said.

"Think it through, don't go on a whim," he said.

Emily Palmer contributed reporting.

How Not to Get Sick While Traveling

Should you wear a mask? Does airplane travel pose a greater risk? Do hand sanitizers work? Health professionals offer some tips. BY LAURA M. HOLSON

WARY TRAVELERS ARE donning masks on New York City subways and in San Francisco airports. Panicked consumers are arming themselves with disinfectants. Businesses are suspending operations and airlines are halting flights.

As the world grapples with a coronavirus outbreak that has killed thousands of people and infected tens of thousands more, people across the world have grown anxious about being in crowds or traveling in confined spaces like airplanes.

All of this can be confusing. So we asked health professionals how travelers can stay healthy while on the move.

Should I wear a mask?

Philip M. Tierno boarded a flight to Paris not long ago and sat behind a woman who appeared to have a bad cold. She sniffed. She coughed. She didn't cover her mouth or use a tissue. Dr. Tierno, a professor of microbiology and pathology at N.Y.U. Langone Health in New York City, asked to move. The stewardess said no. Sure enough, within a week, Dr. Tierno was coughing himself.

"It was the only time that I wished I'd had a mask," he said.

So do masks really work? The answer is yes and no. Dr. Tierno said he had seen people wearing surgical masks on the subway and it was "like having no mask at all." Air can seep in through the gaps. A cloth mask, too, provides little protection. Sometimes mask wearers cover only their mouths, leaving noses exposed. "For most people, a mask is not necessary," he said.

In February, the surgeon general urged the public to stop buying masks, warning that it won't help against the spread of the coronavirus but will take away important resources from health care professionals.

"Seriously people — STOP BUYING MASKS!" the surgeon general, Jerome M. Adams, said on Twitter.

When one is needed — mostly in a place where a lot of illnesses have been reported — people should wear an N95 respirator, a heavy-duty mask fitted to the face that filters out 95 percent of smaller air particles. But, Dr. Tierno warned, "it is a very tough mask to breathe through."

Please! Wash your hands.

This seems so simple that Trevor Noah recently made a joke about it on "The Daily Show." Health professionals say washing hands with soap and water is the most effective line of defense against colds, flu and other illnesses.

Just think about where your hands have been in the past 24 hours. Now, think about all the hands that have touched airplane tray tables and seatbelt buckles. If that doesn't give you pause, consider whether you bite your nails, touch your face or rub your eyes. "The 10 dirtiest things are your fingers," Dr.

Tierno said.

Hand washing can reduce the risk of respiratory infections by 16 percent, according to the Centers for Disease Control and Prevention. If soap and water aren't available, hand sanitizers with more than 60 percent alcohol work. Here's a tip: Dr. Tierno said to make sure the sanitizer dries on your hands. If it doesn't, germs can thrive.

What about tray tables and seats?

"Don't eat off the table," Dr. Tierno said.

A 2015 report by the Government Accountability Office found that crew members had a limited time to clean the cabin before passengers on the next flight boarded. Some of the people the G.A.O. interviewed said employers "did not provide hand-on training to respond to specific disease outbreaks such as Ebola."

And the office cautioned that the United States lacked a comprehensive plan "aimed at preventing and containing the spread of diseases through air travel." One bright spot: Fourteen airports and three airlines reviewed had such plans.

So, what does that mean for travelers? Some people bring sanitizing wipes and use them to wipe down seats, tray tables, bathroom handles and even air vents. The health care professionals we spoke to said this was not recommended.

Dr. Hertzberg suggested placing sheets of paper on tray tables so laptops or other items don't come in contact with the surface. She suggested using a paper towel when opening and closing the bathroom door. Dr. Pietro said not to place food directly on the table. (It should be kept in its container.) And forget about using seat-back holders. A 2014 study from Auburn

University in Alabama said some germs could survive a week on a cloth pocket.

Is the air safe to breathe?

The risk of contracting an illness from a fellow airline passenger is similar to the risk of getting sick after traveling on a bus or subway, or sitting in a movie theater, according to a 2018 report from the International Air Transport Association.

That said, it offered a qualifier: The risk is probably lower on planes because they use high-efficiency air filters that are comparable to those used in hospital operating rooms. Called HEPA filters, they capture 99 percent of the airborne microbes in recirculated air and are changed at regular intervals, the association said.

What that doesn't address is the overhead vents themselves, which carry germs transmitted by people's hands. Health professionals advise moving vents so they blow on hands, not on the mouth, face or nose. The humidity in aircraft cabins is low, too, usually less than 20 percent. (In homes, it is usually above 30 percent.) While this poses no serious health risk, according to the World Health Organization, it can cause discomfort to the nasal passages and the skin.

Get your rest.

The healthier your immune system, the better your chance of not getting sick. Sleep six to eight hours a night, Dr. Tierno said. Exercise. Eat fruits and vegetables.

And slow down, Dr. Tierno said: "Stress is the worst thing that can happen to your body."

Freaked Out by the Stock Market? Take a Deep Breath

When the stock market shudders a few days in a row, it is tempting to do something, and fast. Read this first. BY RON LIEBER

Ignore predictions and seek perspective.

When the stock market falls, there is a natural desire to search for explanations and consult crystal balls. While the spread of the coronavirus has been a catalyst, nobody knows exactly why the market moved the way it did, including whether underlying economic troubles are contributing to the severity of the gyrations. And nobody can tell you how the virus will affect the United States, including whether the outbreak's short-term economic impact will reduce long-term profits.

And you are a long-term investor, right?

Most of us fall into that category, if we are saving for retirement. We invest in stocks because doing so has consistently proved to be a good way to buy a little piece of capitalism. Hold on long enough to a diverse collection of stocks, and the system has tended to generously repay patient people over six or seven decades of working, saving and drawing down a portfolio.

Still, declines like the one investors have experienced rarely feel good. And maybe you're getting queasy about the economic implications of an outbreak that could force millions of

Americans to shut themselves in for a while. If so, remind yourself of the following: Stocks are how your savings fight inflation, the market is not an absolute proxy for your personal finances, and you're playing a long game — the very same points I raise every time we've worried about the stock market in recent years.

Take the long view.

Bull markets generally don't last as long as the one of the past decade has. Maybe this is the end, and if it is, so be it. Stocks will fall 10 percent and flatline for a while. Or maybe they drop 20 percent. Or 40. But wherever they bottom out and start rising again is likely to be higher than the average price you paid for your stocks over the past 10 or 15 years.

When people are yelling on (or at) the television, it always helps to stop and remind yourself why they're doing it. Many of those TV yellers are professional investors trying to time the markets by selling high and buying low or on dips. Your goal isn't the same.

Your aim is to find a way to put your money in an investment that will grow over time at a rate that outpaces inflation. And you want to do that without taking on so much risk that it could all go to zero and stay there.

Owning a big basket of stocks and paying very little for the privilege, say via an index mutual fund or exchange traded fund, is generally the best way to execute this strategy.

That's not going to change any time soon, because capitalism isn't going anywhere.

Defining net worth.

The phrase "net worth" is wrongheaded, as if the only reasonable sum of our financial selves is assets minus liabilities. Next year may bring a big market bounce, or a pay raise, and your capacity for earning more ought to be part of the equation. Besides, net worth need not equal self worth.

Nevertheless, a positive and rising dollar figure is a fine thing. So take a look at the other pieces on the asset side of your equation. A decent chunk of it might be home equity. Did that fall a lot in the last few days? No? Good. Do you expect your bond mutual funds to fall as far as any money in stocks might? Again, probably not.

Remember, stocks are just a part of what you're worth.

The horizon is a long way off.

Stocks are for the long haul: There are several decades between graduation and retirement (or a couple of decades between the arrival of a new baby and college graduation).

If you're on the cusp of retirement, keep in mind that the big idea here is to live at least 20 more years, which is usually plenty of time for stocks to bounce back from even an extended decline in the stock market. (And things can indeed look grim for a while, as they did between 2000 and 2010, when U.S. stock prices for the biggest companies more or less made no upward progress even if you were investing your dividends along the way.)

If college for your children is imminent or you're building a down payment fund for a house purchase in the next year or two, you probably shouldn't have much money in stocks. Do you have money in a target-date mutual fund as part of a 529 college savings plan? Check to see how much of it is invested in

stocks — and whether that figure makes you comfortable.

This may be your first big test.

If you're in your 20s and just started investing in the past couple of years, I don't envy you.

You may remember parents watching helplessly as half of their home equity and their retirement investments evaporated, at least on paper, after the 2008 financial crisis. If a parent also lost a job, and you took on perhaps more student loan debt than anyone in the family had hoped, it's no wonder that you'd be reticent about investment risk.

A multiday decline, in your first few years of managing to put a bit of money away, can be harrowing. Putting long-term savings someplace safer is probably tempting, and perhaps it's the only way for you to sleep better at night. But long-term returns in bonds will most likely be lower, so permanently moving money into them means you'll need to save that much more to meet your goals.

Take your time.

Smartphone news notifications and television chyrons are insistent, and they suggest a kind of urgency. Even if they don't explicitly say you should act now, it's easy to feel that immediate action is necessary.

It isn't. Not today, and probably not tomorrow, either. Plenty of people reading this will spend 75 years in the stock market, more if you count any college savings your parents invested for you when you were an infant.

So, stop. Think. Talk to someone with more experience, or a sober-minded approach. Shift a bit of your portfolio to cash if

it helps your anxiety. But drastic investment moves are sensible only when there have been drastic changes in your life, like a big new job or consequential medical news. And that hasn't happened for most of us recently.

Matt Phillips contributed reporting.

Your Money and the Coronavirus: You Asked, Experts Answered

Advice on stocks, bonds and cash; timing the market; selling a house; whom to trust — and more.

BY TARA SIEGEL BERNARD, ANN CARRNS, JEFF SOMMER AND RON LIEBER

THE CORONAVIRUS IS officially a pandemic. The bull market is officially over. None of us knows what comes next.

It's hard to make rational financial decisions when there's so much uncertainty. We asked readers what most concerns them right now. Dozens sent questions, which we condensed and answered here:

I'm retired. Should I move more of my portfolio into cash?
Harold Evensky, a longtime financial planner in Texas, had a blunt answer: "Going to cash could mean you will end up eating cat food five years from now." Even in these times, most retirees still need a balanced portfolio of stock and bonds so their nest egg will keep up with inflation, and maybe even grow.

But holding enough cash for basic needs is important, too. Mr. Evensky recommends thinking in terms of two cash buckets: The first can hold a year's worth of living expenses. The second is for the big payments you'll need over the next five

years, like helping with a grandchild's college tuition.

With the money in those buckets already put aside, you may be able to ride out a shaky market more peacefully, using the returns from your investment portfolio to replenish the buckets as you use the cash you really need.

When's the right time to buy into falling markets?

We don't know when the market will hit bottom, so hedge your bets: Invest a portion of your money over time. "Our brains do not respond well to panic and we will not be able to make rational decisions when everyone else is freaking out," said Michael Batnick, director of research at Ritholtz Wealth Management. "You need to have a plan."

Let's say you have an extra $5,000 you want to put to work. Set up an automatic investing schedule to take emotion out of the process — maybe you invest $500 every other Wednesday, for example. And if the market sinks further, try not to fret. Most of us are investing for the long term anyway.

Should I refinance my mortgage now that rates have sunk?

It depends. You might be able to shorten your loan term to 15 years from 30 and pay off your loan quicker. Your monthly payments would likely rise, but you would have more budget flexibility in retirement or even sooner.

Or you could stick with a 30-year mortgage and lock in a lower rate. This would reduce your monthly payment, though you could end up paying more interest over time.

Getting your hands on more cash might be your goal. You might keep your payment the same, start the 30-year clock

over and walk away with some money for whatever is coming next. But lenders are overwhelmed, so prepare to devote many hours to loan shopping and closing.

I wish I had a pension. Should retirees be considering annuities?

Maybe. If it's pension-like income you're craving, then something called a single-premium immediate annuity may help. You pay an insurance company a pile of cash, and in return, they send you a guaranteed monthly paycheck for the rest of your life (or some other period). Experts suggest figuring out what your basic fixed costs are — housing, food, taxes — and then buying enough of an income stream to cover the portion of expenses that Social Security does not.

But the income received is tied to long-term interest rates, which have fallen to new lows. As a result, so-called payout rates have also fallen sharply. One workaround is to spread your purchase out — for example, by using a portion of your money to buy one annuity annually over five years.

Another negative: Once you give that cash to the insurance company, you can't access it. (You can buy a death benefit for your heirs, but that will reduce your income stream.)

I need to sell my home, but I'm worried about timing. I need to live on the income from the sale. Now what?

The supply of houses in most markets is tight and mortgage rates are low, which bodes well for sellers. That could shift, though, as the coronavirus spreads.

Redfin, a brokerage, said home-buying demand has dropped in Seattle, which has been hard hit by Covid-19, but it

hasn't seen a falloff yet in the rest of the country. The National Association of Realtors put out a "flash survey" of its members March 9, 2020; 11 percent reported lower home buyer traffic and 7 percent reported lower home seller traffic.

But the virus's impact is changing so rapidly that we simply don't know what's coming next.

I'm closing on a house and need cash from my stock and bond portfolio. Where should I pull it from?

First, a wag of the finger. Cash needed for a down payment or other near-term expenses, like college tuition, should not be in risky securities like stocks. Generally, investments should be used for long-term goals like retirement, because you have time to ride out market dips. Money needed in less than 10 years should be somewhere safer. "It should not have been there in the first place," said Elissa Buie, a financial planner in San Francisco.

But since it's too late for that, she said — and assuming there's no other source for the cash — it likely makes most sense to draw from the bonds. Stocks have obviously plummeted in recent weeks, so you can give them some time to recover. Pull from bonds. Their prices, which move in the opposite direction of interest rates, have lately been rising.

I'm in my 60s, behind on saving and worried this market will never bounce back enough for me to retire. Should I move more to bonds?

Look at things dispassionately: Bonds are relatively expensive now, while stocks are cheaper than they were a few weeks ago. This is not an optimal time to buy bonds and sell stock.

But if you want to retire soon on the money already in your portfolio, it might be reasonable to safeguard more of it, or even consider adding a cash buffer (see the first question). High quality bonds can be a haven.

I'm in my 40s and saving the maximum amount permitted in my 401(k). But I feel like I should stop or save less for a while. Is that wise?

If you truly need the money to live, do whatever you have to do. That said, if your employer matches your contributions at some level, try to get that free money.

You'll be better off down the road if you keep salting away as much as you are permitted in that tax-sheltered account, assuming it is invested in a diversified way. So unless you face a real emergency, try not to stop saving entirely.

But if the market plunge has taught you that your risk tolerance isn't as high as you once thought it was, dialing back your stock allocation may help you ride out storms like these.

I need help! What kind of professional can I trust?

Be especially careful during periods of market turbulence. Many professionals who call themselves financial advisers are glorified salespeople, peddling stuff you don't need.

Start by asking this question: "Will you act as a fiduciary?" That means the adviser must put your interests ahead of his or her own. The pros most likely to serve as fiduciaries are certified financial planners, who are also registered advisers.

You want someone who charges an hourly rate or another type of flat fee. Avoid advisers who only earn money when they sell you something. Many pros who work that way can be found

here: XY Planning Network; Garrett Planning Network; The National Association of Personal Financial Advisors.

Should I keep my cash in a savings account instead of a money-market account? What if there's a run on the banks or a freeze-up, like in 2008?

Money-market mutual funds were always widely assumed to be safe places to store cash. But during the financial crisis, one fund told investors its shares were no longer worth $1, but a few pennies less. Investors panicked, and the government stepped in to stop a run on the funds.

Bank and money-market experts said they believed that isn't likely to happen again. Want an explicit guarantee? Stick with a traditional bank account (or a money market deposit account, which is different from a money-market fund) that is backed by the Federal Deposit Insurance Corporation, which means your money is insured by the federal government, up to certain limits.

Should I Stop Making 401(k) Contributions?

BY ANN CARRNS

YOU MIGHT BE asking yourself: "Should I stop contributing to my 401(k)?" Lots of people are.

As the stock market plummeted on fears of the spreading coronavirus, that query was among the most popular online searches. The horrid combination of a threatening virus and a shrinking retirement balance made you wonder if you should hang on to your cash instead of investing it for the future.

Totally understandable.

But because you asked, here's the answer: Absolutely not!

Market crashes are nauseating, especially if you are young and have not experienced one. They are frightening. And no one can say for sure when the market will stabilize. But time is in your favor. You have years — decades! — to recover from this roller coaster ride and reap returns when the market rises again. Even if you are in your 50s or even your 60s, you are likely to spend 20 or even 30 years in retirement. So you have time to let your money bake longer in the investing oven.

Yes, there are scary red minus signs next to your online account balances. But that's exactly why you should keep contributing to your 401(k). "Stocks are on sale," said the investment adviser Dave O'Brien of EVOAdvisers. Your regular paycheck contributions are buying more shares, because

they're cheap.

And if you have an employer that matches your retirement plan contributions, you are buying shares partly with "free" money. If you're not saving enough to get the match, you should increase your paycheck contribution now. If you are already getting the match, increase your contributions. If you are putting away 4 percent of your paycheck, go to 5 percent. It's a small step, so you won't miss the money much.

So, yes. Acknowledge that it stinks to see your account balance drop. It's painful.

But keep contributing. Your future self will thank you.

Investors Nervous About Coronavirus Ask: Should I Put My 401(k) in Bonds?

BY ANN CARRNS

One personal finance question asked widely online recently was: "Should I put my 401(k) in bonds?"

Well, some — but not the whole enchilada.

If you're a young investor, and even if you're anxious about the effects of the coronavirus pandemic, most of your 401(k) should be invested in stocks, with a smaller share in bond funds — mutual funds or exchange-traded funds that invest in a mix of bond types. That's because while stock prices have more ups and downs, they generally have a bigger payoff over time and are your best tool for saving what you need for retirement. You hold stocks for growth, and bonds for relative stability.

When you buy a stock, you purchase a share of ownership in a company. Bonds are different; they are a type of debt. Think of it this way: When you buy a bond, you are lending money to the company or government that issued the bond. In exchange, the borrower pays you interest on a regular basis. If you keep the bond until it "matures" — in six months, or 10 years, or 30 years — you get your investment back. Because most bonds pay a predictable fixed interest rate, they're generally considered a more stable investment.

But they're not risk free, partly because of gyrations in market interest rates. The value of a bond generally depends on prevailing interest rates. When market interest rates fall, the prices of bonds typically rise, and the opposite is true, too. It's like a seesaw. Sophisticated investors buy and sell bonds in response to changing interest rates, rather than holding them to maturity.

When the stock market plunges, big investors load up on trustworthy U.S. Treasury bonds, to wait out the turmoil in a relatively safe haven. That pushes up bond prices and drives down returns, or "yields" in bond speak. Investors spooked by the coronavirus pandemic put so much money into 10-year Treasury bonds that yields fell to historic lows.

So right now, financial advisers say, many bonds are quite expensive. "Bonds had a nice rally, but it's not a time to buy them," said Elissa Buie, a financial planner with Yeske Buie in San Francisco. If you moved all your holdings out of stocks and into bond funds now, you would most likely be selling (stocks) low and buying (bonds) high.

Don't do it.

The best approach is to choose a mix of stocks, bonds and cash that you're comfortable with. There are various rules of thumb for how much to keep in each basket. One holds that you should "hold your age" in bonds, meaning if you are 25, you should hold 25 percent of your investments in bonds and cash. Other guidelines suggest even lower bond holdings, especially if you are in your 20s or 30s. Another suggests a 50-50 split of stocks and bonds for any investor expecting to live at least 15 more years. It all depends on how much risk you can tolerate.

If you don't want to keep track of the relative holdings

yourself, consider a target-date retirement fund, which shifts the assortment automatically according to when you expect to retire.

Learning to Live With the Coronavirus

On the March 13, 2020, episode of "The Daily," a podcast by The New York Times, a science reporter answered questions about how to protect yourself and your loved ones from the pandemic.

HOSTED BY MICHAEL BARBARO, PRODUCED BY CLARE TOENISKOETTER AND MICHAEL SIMON JOHNSON, AND EDITED BY WENDY DORR

Now that the coronavirus has gone from an epidemic to a pandemic, and both infections and deaths from the disease are surging across the world and the United States, we return to Times science reporter, Donald G. McNeil, Jr., who has covered the story from the start, to understand how to navigate this new reality.

MICHAEL BARBARO: Hey, Donald.

DONALD G. MCNEIL JR.: Hey. How are you?

MICHAEL BARBARO: Good. Welcome back, and thank you for letting us into your home. I know we've been hearing a lot from you lately, so let us know if we're beginning to exhaust your generosity.

DONALD G. MCNEIL JR.: OK. So far, so good.

MICHAEL BARBARO: So far. Key word. Donald, when we first started talking to you about the coronavirus, you gave us an overview of what it was, where it was headed. Since then, a lot has changed. Given the evolution of the situation, we have questions related to this new phase of the epidemic, now that it's very much in our lives. I'm working from home. You're working from home. So let's start with questions about precautions for people who don't have the virus — which, presumably, is the vast majority of us at the moment — and how we can protect ourselves from getting the virus. What kind of activities should be avoided right now?

DONALD G. MCNEIL JR.: You have to be aware not only of people around you who are coughing, but you also have to be aware that every — basically every hard surface you touch might potentially have virus on it, unless you know it's been cleaned since the last person that you don't know was there might have been on it.

MICHAEL BARBARO: Let me tick through a couple of what we imagine, from conversations with everybody on "The Daily" team at The Times, to be the kinds of scenarios I think people want to better understand how to approach. A bit of a lightning round here. Is it dangerous, at this moment, to keep going to work?

DONALD G. MCNEIL JR.: Look, some people are going to have to go to work. Doctors have to go to work. But it's not so much

the danger. The reason the government's asking people not to go to work is because it creates what they call social distancing. The less interactions there are between people, the less exchange of virus there is. If you slow down the virus, you change what is sometimes called R-naught. And if you get people to be more distant from each other, the virus is transmitted less.

MICHAEL BARBARO: Can you translate that phrase, R-naught?

DONALD G. MCNEIL JR.: Yeah. It's called the reproductive number of the virus. It's, "If I'm sick, how many people am I going to infect?" You never know the real R-naught, or the real fatality rate, or anything about a disease, until it's completely gone through the world. So we're never going to know the real answers to these things for at least a year or two, because they're going to be different in Africa than they are in New York. They're going to be different anywhere. But if you create more distance between people so that I infect, hopefully, no people, you've substantially slowed my part of transmitting the virus. And if you do that across the entire population, you really slow down the movement of that virus in the population. When a lot of people are infected, and a lot of people have pneumonia, a lot of people all need to get to the hospital at the same time. A lot of those people need to get on oxygen or on ventilators, and eventually you run out of ventilators. Then you're making the triage decisions that they're now making in northern Italy, which is to say, OK, this is Donald McNeil, 66 years old. I've got a choice between saving him or a 25-year-old mother of two. Goodbye, Mr. McNeil. Sorry there isn't any time for your family

to say goodbye to you, because we can't have visitors, but that's it. See you later.

MICHAEL BARBARO: Sheesh.

DONALD G. MCNEIL JR.: Which is the right thing to do. That's the right decision for a doctor to make. But those are really tough decisions for doctors.

MICHAEL BARBARO: Let me return to our lightning round that has not yet turned into a lightning round.

DONALD G. MCNEIL JR.: Sorry.

MICHAEL BARBARO: Based on some of what you just said, I'm intuiting where this may be headed, but — take the bus or the subway at this moment. Is that wise?

DONALD G. MCNEIL JR.: I don't think it's terribly wise. I did it yesterday to get home. I ride the subway standing up with my face close to the vent. I have one glove on my hand, one gardening glove, and I use that if I have to hold onto a rail. The other hand, I make sure, never touches a surface, and I use that for my phone. Mostly, I keep it in my pocket. And I won't get into a crowded car. I'll let the train go by.

MICHAEL BARBARO: But if you don't have to take the subway.

DONALD G. MCNEIL JR.: If you don't have to take the subway, don't.

MICHAEL BARBARO: Staying on this theme — lots of people are curious about plane travel.

DONALD G. MCNEIL JR.: I would avoid plane travel if I could help it. I have friends who were about to fly to Kentucky to visit their son, and I said, you know what? Why don't you drive? You know where all the surfaces inside your car have been. You don't know where all the surfaces inside that plane or that airport have been. I know it's going to be 11 hours instead of two hours, but I'd say, do it. And that's what they're doing.

MICHAEL BARBARO: How about trips to familiar retail establishments — a grocery store, a restaurant?

DONALD G. MCNEIL JR.: Well, you have to have food, so go to the grocery store. Be super careful about the handle of the cart, and remember that every box you touch has been placed on that shelf by somebody who might have coughed into their hand. Now, restaurants — I did eat in a restaurant a couple of nights ago. We looked for one that was, really, pretty empty, and we sat at the bar which had just been wiped down. But as this pandemic progresses, I'll worry more, and I'll probably avoid going into restaurants.

MICHAEL BARBARO: The gym.

DONALD G. MCNEIL JR.: Yeah, the gym. I go to a gym. I play squash, which means all I have to touch in common with the other player is the ball, and I know my partner. I would be real reluctant to start grabbing a bunch of weights, not knowing

who else had touched them, grabbing a bunch of handles on machines, not knowing who had touched them. I would be reluctant to play basketball with a dozen other guys, because you can't have 10 guys handling the same ball. If one of them is spewing virus, a virus is going to get on the ball, and then everybody's got it on their hands.

MICHAEL BARBARO: How about movies, concerts — things that might be open-air, but where people are sitting quite close to each other?

DONALD G. MCNEIL JR.: Open-air is safer than enclosed, but even in open-air venues, if you're sitting on a seat, the handles of the seat might have virus on them. The railings when you walk down to your seat might have virus on them. The ticket taker, as he takes your ticket and hands it back to you — I know it's paranoid-sounding, but these are all the ways that virus can be transmitted in large gatherings. It's not just the coughing. It's the many surfaces that get touched.

MICHAEL BARBARO: In general, I'm hearing you say that going out and interacting with other people poses risks. So I wonder if you can help us understand the calculations behind your thinking in these particular categories. Does it have to do with the lifespan of the virus? Does it have to do with recommendations around social distancing? What is the underlying logic?

DONALD G. MCNEIL JR.: Yes. They're related to all these things. But I think people get way too obsessive about numbers, about exactly how many hours or days does the virus live on

a surface? Exactly how many feet do you have to stand away from somebody else? I mean, you can't run around through life with a tape measure, trying to figure out, is 3 feet safe enough? Is 6 feet safe enough? But stay away from people who are coughing. Stay away from people who look feverish. And if you have to communicate with somebody, keep your distance. That's what I'd say. Just generally keep your distance.

MICHAEL BARBARO: You've talked about social distancing. How do you socially distance yourself from your family, from your children, from your partner, your spouse, your boyfriend, your girlfriend? Does that really work?

DONALD G. MCNEIL JR.: You can't. My girlfriend and I still kiss each other. We just trust each other enough to believe we're not infected. It's impossible to socially distance yourself from your children. They're going to come up and hug you. That's why the whole idea of home quarantine — home isolation, rather — is virtually impossible.

MICHAEL BARBARO: Donald, there's a strong sense that very young people and people in their teens, 20s, early 30s, are at a much lower risk level for the coronavirus. And I think that's been borne out. Correct me if I'm wrong. So do all the recommendations that we keep hearing apply as stringently to the young?

DONALD G. MCNEIL JR.: Yes, unless you're totally selfish.

MICHAEL BARBARO: What you mean?

DONALD G. MCNEIL JR.: Do you have a parent? Do you have a grandparent? Do you want to be the vector that carries that disease to them? Do you know anybody and love anybody who's older and might be frail? You don't want your last memory of that person — being that you gave them the virus that killed them. You'll kick yourself for the rest of your life if you did that. People who were hospitalized in China started at age 30 and went up to 70s and 80s. Yes, on average, the outcomes are better. But if you want something to worry about, you might be the person who doesn't have a good outcome. You're spreading a disease to your friends, your social circle. That's something you ought to feel guilty about. It's not something you ought to feel indifferent about. People have to take this seriously.

MICHAEL BARBARO: We've been talking about precautions for people who don't have the virus and want to keep it that way. I want to turn, now, to what happens if you think you might have the virus. Based on your reporting, and based on the publicly available information, what are the first signs of illness that have been reported and that people, therefore, could be looking out for?

DONALD G. MCNEIL JR.: What the Chinese found in the large study of the first 45,000 cases is that it's not like a cold. Fever is the number-one sign. High fever, a dry cough, and then, after that, fatigue. Runny nose was only 4% of cases, and those people might have had flu or a cold at the same time. But there's something I wanted to say that was important. I described, in our first interview, that 80% of all cases were mild, and the other 20% were either severe or critical. And that stuck in too many

people's minds as if, oh, 80% of cases are practically nothing. You don't even have it. Maybe it's asymptomatic. No. That's wrong. The Chinese study that was based on — everything was either mild, severe, or critical. Mild included everything from "barely any symptoms" to pneumonia, but pneumonia not needing hospitalization or oxygen. Once you stepped over into needing oxygen, then you were severe. Once you were in organ failure, you were critical. So if people think this is a mild disease, get over that idea. I'm sorry if I contributed to the spread of that idea. I should have been much more careful in describing the whole range of symptoms that came under the term "mild."

MICHAEL BARBARO: Right. In other words, "mild" doesn't necessarily mean mild.

DONALD G. MCNEIL JR.: Nothing like what we mean by a mild cold.

MICHAEL BARBARO: When is it recommended that, no matter how mild or severe the symptoms are, a person be tested? Is there a threshold?

DONALD G. MCNEIL JR.: I don't know if the authorities have set a threshold yet. I know what happens in pandemics is that, ultimately, you have to assume that a lot of people have the disease. And that really when you reach the point where almost everybody has it, you end up stopping even bothering to test them. You ultimately are going to assume that everybody has it, because it's the most popular virus going around. If you have no trouble breathing, if you have got a fever that you can

handle at home, then stay home and take care of it. Although that's not the way the Chinese handled it. The Chinese said, if you think you have symptoms — and I hope we get to this point. The Chinese said, if you think you have symptoms, if you think you're getting sick, get directed to a fever clinic, where somebody who is in protective gear can see you, and they will see you and sort out whether you have bacterial pneumonia, or flu, or whether you have coronavirus. And if you have coronavirus, you're going to go into isolation with a lot of other people who have coronavirus. Even if you have a very mild case, you're going to go in with all the other mild cases, because they know cases can crash. It's a pretty common phenomenon that people are going along OK with some breathing difficulty, and then in the second week, they crash. Their oxygen saturation drops, and they need oxygen. And in those cases, in the isolation centers in China, when you might be in a gymnasium with 1,000 other people, when you crashed, they recognized it right there. There was no wait, and they would move you to a hospital.

MICHAEL BARBARO: This is a bit of an ethics question, but let's say you get into a cab, and you're on your way to get tested for the coronavirus, or you hitch a ride with a friend. Should it be disclosed that you think you might have the virus? Should basically anyone you come in contact with be aware of your status?

DONALD G. MCNEIL JR.: Yes. You're carrying a potentially lethal disease, so you've got to warn other people. There's no ethical question about this. Unfortunately, this has been the story of I don't know how many pandemics. How many people have lied about having a sexually transmitted disease, especially in the

five minutes right before they thought they were going to get lucky, and if they disclosed what they had, they were going to ruin the moment? Unfortunately, that's how a whole lot of sexually transmitted diseases, including H.I.V., get passed on. It takes a lot of courage to be that ethical, and I hope during this epidemic, people will.

MICHAEL BARBARO: And the test itself, it remains somewhat scarce, but to the degree you know it, can you describe the test? Is it a saliva swab?

DONALD G. MCNEIL JR.: The point is to get a sample of where the virus is, so there are different ways of getting that swab. Typically, for a while, they were doing nasopharyngeal swabs, which is, basically, pushing a Q-tip so far up your nose that it feels like it's going into your brain. But I've seen swabs that were just taken from the back of the throat. And I know that there are some times, when people are coughing hard, they try to get them to cough up sputum so they can test that. You want to get a sample that's got virus from where the cells are infected. Originally, it attaches deep in the lungs, so you're trying to get a sample from there. But once it moves up into your nose and throat, maybe you can get a sample from there. So it's very dangerous for the person who's trying to get the Q-tip in, or the sputum sample out, to be standing right in front of them as they do that. They have to be really protected in order to do that safely.

MICHAEL BARBARO: How long do the results generally seem to be taking for these tests?

DONALD G. MCNEIL JR.: I was told that, in China, when they had the on-the-spot labs and the fever clinics, they could give you an answer in as little as four hours, but that's ideal. There were others of seven hours. Other times, they had to send it off someplace overnight. Until recently, we've been having to send every sample to Atlanta. So that's several days.

MICHAEL BARBARO: Right. To the C.D.C.

DONALD G. MCNEIL JR.: Yes, to the C.D.C.

MICHAEL BARBARO: Which is the least efficient version of this, it would seem.

DONALD G. MCNEIL JR.: It's the least efficient version, but for a while, it was the only accurate version, and a positive wasn't considered a positive until the C.D.C. had confirmed it. We've got to solve this testing problem. We've got to have it so that tests are literally right there, because you've got to diagnose people and then isolate them so they don't go home and give the virus to the family, and they don't go back to work and give the virus to their coworkers.

MICHAEL BARBARO: And we are not at that phase just yet, are we?

DONALD G. MCNEIL JR.: Right now, we're not even talking about that phase. That's how they did it in China. Right now, we're still talking about home isolation, and the W.H.O., the Chinese, and the South Koreans would say, that doesn't work. That's too

dangerous. There's no way you can isolate at home without infecting your family.

MICHAEL BARBARO: The final phase of questions, Donald, are, what happens when a person has been diagnosed with the virus? You've told us that there really is no cure for the coronavirus. It's going to run its course. Are there useful over-the-counter medicines that would help somebody get through this virus?

DONALD G. MCNEIL JR.: This is kind of crazy, because I don't think it's safe to think of it as something you can happily stay home with and treat like, oh, I've got the flu. You've got to be aware that there is the possibility of crashing. You've got to have a number you can call. The state should be aware that you're a patient, that you're in home quarantine, and there should be somebody checking in on you each day, or you should be checking in with somebody so that they say, how high is your fever? How fast are you breathing?

MICHAEL BARBARO: How long can a person expect to be sick, once diagnosed?

DONALD G. MCNEIL JR.: Mild cases typically resolved themselves in two weeks. People who were on ventilators and in severe situations were usually three to six weeks.

MICHAEL BARBARO: That's a long time.

DONALD G. MCNEIL JR.: Yeah. That's a long time. It's a long time

for one of your ventilators to be in use. Even the severe and the critical cases — most of the time, they ended in good outcomes. But for some people, death took several weeks, too. People didn't just immediately crash and die. It would be a somewhat slow process.

MICHAEL BARBARO: Donald, once you have this virus, does it confer immunity on getting the coronavirus again in the next couple weeks, next couple of years, forever?

DONALD G. MCNEIL JR.: Nobody knows about forever. Virtually all doctors assume that having recovered from this confers immunity, because that's the norm. When you recover from a disease, you normally have immunity at least for a while.

MICHAEL BARBARO: Once a person recovers from the virus, is there permanent damage? Do we know?

DONALD G. MCNEIL JR.: Some people who have gone into severe pneumonia or A.R.D.S., adult respiratory distress syndrome, yes, will have permanent damage. They'll live, but they'll have permanently damaged lungs. That can definitely happen.

MICHAEL BARBARO: And what do we know about how the virus, long-term, affects people who I think would be, justifiably, quite anxious at this moment — pregnant women?

DONALD G. MCNEIL JR.: The small numbers of women that have been studied in China who were pregnant during this relatively short time period — there was a study that came out just a

couple of days ago. Nine women all delivered healthy babies. Something like six of the women were delivered by cesarean, which doctors may have chosen to do just for the extra safety of knowing that the baby wasn't going to be infected in the birth canal. But some of the babies were born naturally, too, and all the babies were healthy.

MICHAEL BARBARO: That's reassuring.

DONALD G. MCNEIL JR.: That's good news. It's a very small sample, but it's good news from what we know from the small sample. It's really different from some other diseases.

MICHAEL BARBARO: Finally, Donald, we want to tackle a few questions that we've observed from friends, family and from the internet that may be in the territory of rumor or half-baked theories, but that are gaining some currency. So basically, a true-or-false section here. First off, are there multiple strains of the coronavirus, and are some more dangerous than others?

DONALD G. MCNEIL JR.: No. There are slightly different variants of the coronavirus — really, variances by a couple of nucleotides. There is no evidence that one is more infectious than the other, or one is more lethal than the other. Not so far, anyway.

MICHAEL BARBARO: Next. This is a seasonal virus, and it will more or less be gone in a few months.

DONALD G. MCNEIL JR.: That would be lovely, but we don't know that. This is a new virus. We've never seen it in summertime,

so we don't know how it's going to behave in summertime. Respiratory viruses like influenza tend to disappear in the summer. We don't know what this virus is going to do in the summer, so it's not a good idea to make predictions. That's just wishful thinking on the part of people who say, oh, it's all going to disappear in the summertime.

MICHAEL BARBARO: And the last of these true-of-false questions, Donald. Are the media — we hear this a lot — blowing the scale of this out of proportion, given the relatively small number of infections compared with the overall populations in any given country?

DONALD G. MCNEIL JR.: Look. I ask myself this question every day, because I'm the media in this case. Normally, I get to blame the other jackals of the press for blowing things out of proportion, but this time —

MICHAEL BARBARO: Not this time.

DONALD G. MCNEIL JR.: — it's on my shoulders. I'd like to think there's nothing to worry about. I never worried about Ebola coming to New York. I never worried much about SARS spreading in New York. I worried, in the beginning, about H1N1 flu in 2009, but then, as the mortality data got clearer, I stopped worrying. I knew we'd mostly get it, but I knew it would be, mostly, not a problem. This one, same as I said two-plus weeks ago, really flips me out. This one reminds me of 1918 — a dangerous virus that transmits easily between people. Yes, 80% of the cases are mild, but as I described, "mild" is a term that

the Chinese use describing all the way up to pneumonia. That's not mild. We don't know what the fatality rate is. It got as high, in some weeks in Wuhan, as 5%. That was during the chaos period in Wuhan. We don't know what it is in Italy now, and we won't know, until it's all over, what the total fatality rate is going to be. I'd love to be told I was wrong, I was an alarmist, I should eat my hat. But we'll see. So far, I've been right about every scary thing I said about this disease. I've been worried, ever since I looked at the numbers, about how fast the epidemic was doubling in China, and how fast people were going to hospitals. I sat down and wrote down on a piece of paper about how fast this could double, and I came into work the next day and said, this is going to go pandemic. Originally, nobody believed me, and I had to call 12 different experts and count which ones believed me and which ones didn't believe me. It came out, basically, eight to two to two. Eight thought it had the potential to go pandemic, two thought it was overblown, and two didn't want to comment, didn't want to take a guess.

MICHAEL BARBARO: It sounds like you're saying, so far, we haven't blown it out of proportion, and you have been a relatively successful prognosticator of this virus. So that's why we're going to keep talking to you about it. I want to tell you how much I appreciate you giving us your time and your wisdom. Thank you.

DONALD G. MCNEIL JR.: Thank you for inviting me.

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