



We hope that you and your loved ones are healthy and well.

Our goal with these updates is to provide you with timely and relevant information through these challenging times.

Portfolio

Recency bias is the tendency to overweight recent experiences. It is the risk of extrapolating recent events, or short term returns in the market, and drawing conclusions from them. One week ago investors were concerned about the market going to zero, while this week investors may be afraid about missing out on a recovery. It is important to remember that bottoming is a process. While it's true the short-term psychology of the equity market reached an inflection point one week ago today, it's also unlikely equity markets will go straight up from here. What is more likely is we are witnessing a "relief rally" or rebound following the en masse selling. As a relief rally runs out of steam, it is common to see a re-test of the prior lows. In fact, every bear market greater than 20% in the S&P 500 over the past 70+ years (save for the 2018 cyclical bear) has played out in this fashion. The key to watch for in any upcoming weakness is for the market data to be better than in the "panic selling phase". This is what we are paying attention to and we will continue to monitor risk accordingly.

Wall Street Journal Special Section – How to Navigate the Coronavirus

The article is dated March 13th so some of the details may have changed and the health care / employer material is written from a US perspective, but we found it to be a very useful read. Thank you Noelle for sending this along to us. [Please see attached](#)

2019 Client Tax Information – From the desk of Suzanne

As of March 30th, 2020, all tax slips have been posted to Gateway. T3's have been mailed from head office this week.

The following documents are now all available via Gateway:

- Contribution Receipts
- T4RRIF
- T3/R16/NR4 Trust Units
- Foreign Securities Report
- T5008 (Trading Summary)
- Realized Gain/Loss Report
- T5/R3/NR4 Regular
- Fee Letter

If you have provided Suzanne your accountant's information and have requested a duplicate tax package to be sent to them directly, these will be completed by April 20th, 2020.

Comments from BMO Private Wealth

Lesley Marks, CFA, is the Chief Investment Strategist at BMO Private Wealth. [Please see below](#)

Thank you and as always, we continue to be here to navigate these times with you.

Lesley Marks, CFA
Chief Investment Strategist

Background

Over the numerous decades that we have managed our clients' wealth, we have experienced several periods that have tested our resolve on the basic principles of investing. While each correction or bear market is accompanied by its own narrative, in all cases there is one common thread – a degree of uncertainty around how bad this can get and when will it end.

It's only natural to think that the period we are in is the worst one yet, because how exactly it will play out has not yet been defined. In other historical cases, we know how they ended and how long it took to recover from the respective market event. This allowed us to become comfortable with something that was very uncomfortable at the time – the true benefit of hindsight.

Once again, we are faced with a new uncertainty. The onset of COVID-19 has evolved into a global pandemic that none of us have seen before. But frankly, when events like 9/11 or the Global Financial Crisis occurred most of us had never experienced anything like that before either. I remember after the 9/11 attacks returning to work, and staring out to neighbouring towers in the downtown core with a lingering thought that another plane might fly into a building. In 2008, fears surrounding the survival of big-name financial institutions gripped the market with distress that was also unprecedented to us at the time.

Today, the onset of COVID-19, and the extra-ordinary measures already announced to help manage the health care requirements of this global pandemic have fuelled a continuation in market volatility and a global bear market in stocks. What started out as a health crisis has quickly moved to an economic crisis and a decimation of expectations in earnings growth. As credit markets have responded with escalating yields, fears are quickly moving towards the financial ramifications of this crisis.

While global policy-makers cannot prevent a sharp economic slowdown, they are fully committed to preventing a financial crisis from the global pandemic by supporting markets through monetary and fiscal stimulus. Examples that are already in place are the intra-meeting cuts by the major central banks, including the U.S. Federal Reserve and the Bank of Canada. A number of fiscal stimulus measures have also been announced. This is critical, since it is necessary to keep businesses afloat and provide income to the millions of impacted workers. Economists have begun to move quickly to adjust economic growth expectations despite the inability to forecast the end of the extreme social distancing measures.

During this volatility, our investment teams remain focused on their investment discipline, adjusting portfolios where they see opportunity. In the early days of a swift market sell-off, securities sell off indiscriminately where there is the most liquidity and, thus, valuations become temporarily disconnected from the fundamental value of the underlying business. For those investors that have a proven process for choosing great investments, with the benefit of time and patience, superior returns can be realized.

Looking at over one hundred years of market history, some facts are undeniable. First, the stock market typically leads the real economy by approximately six months, so stocks will begin to recover before official economic data has bottomed. Second, the market is inherently “mean reverting.” This means that excesses to the upside or downside typically lead to a powerful opposite reaction. The market has weathered countless wars, epidemics and other major shocks and has always managed to make significant new highs over time.

While it is likely that the environment will remain volatile for some time and more downside is certainly possible, the key to achieving your investment goals is to maintain a well-diversified portfolio across asset classes and geographies that aligns with your time horizon, risk tolerance and wealth requirements.

Please note: We cannot take trading instructions via email or voice mail, please contact your Investment Advisor directly.

For disclaimer details, please click here: <http://www.bmo.com/nesbittburns/popups/about-us/disclaimers>

Friday, March 13, 2020



How to Navigate The Coronavirus

As the U.S. faces a pandemic, the advice is consistent and clear: Don't panic, but be smart. Understand the risks and take the necessary precautions. This Wall Street Journal special report is designed to do just that—help you navigate through the tricky weeks ahead. What do we know about the virus and how dangerous it is? How can you best protect yourself and your loved ones? What are some tips for working from home? What's the best way to deal with quarantine? In this report, you'll find the answer to these and other questions. We encourage you to read these articles, and continue to stay informed online at [WSJ.com](https://www.wsj.com).

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Your questions answered

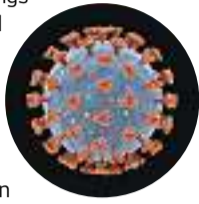
THE BACKGROUND

What is a coronavirus?

The virus behind the current pandemic belongs to a family known as coronaviruses. Named for the crown-like spikes on their surfaces, they infect mostly bats, pigs and small mammals. But they mutate easily and can jump from animals to humans, and from one human to another. In recent years, they have become a growing player in infectious-disease outbreaks world-wide.

Seven strains, including the new coronavirus, are known to infect humans, causing illnesses in the respiratory tract. Four of those strains cause common colds. Two others rank among the deadliest of human infections: severe acute respiratory syndrome, or SARS, and Middle East respiratory syndrome, or MERS.

This new virus is called severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2. The disease it causes is called Covid-19. (The number stands for 2019, the year it emerged.)



Where did the new coronavirus come from?

The new virus likely came originally from bats, scientists say. It isn't known exactly where or how it jumped to humans, though. Viruses from bats often infect another mammal first and then mutate to become more transmissible to humans. One hypothesis is that the intermediary animal for this new virus may be a pangolin, a small mammal sold in wildlife markets, prized for its meat and scales. Health officials believe the outbreak originated in a large animal and seafood market in Wuhan, China.

WHAT TO WATCH FOR

What are the symptoms of the illness and how do you know if you have it?

The virus infects the lower respiratory tract. Patients initially develop a fever, cough and aches, and can progress to shortness of breath and complications from pneumonia, according to case reports. Other reported symptoms include fatigue, sore throat, headache and nausea, with vomiting and diarrhea. Some people become only mildly ill or are infected but don't get sick. Others are mildly ill for a few days, then rapidly develop more severe symptoms of pneumonia.

Some patients haven't had a fever initially or might develop a "walking pneumonia," meaning they might spread their infection to others because they aren't sick enough to be in a hospital.

What is the incubation period?

People become ill between two and 14 days after infection, according to most estimates. One report described a person who became ill 27 days after infection. However, most start showing symptoms about five days after infection, according to a large study by disease analysts at Johns Hopkins University.

THE DANGERS



Who is most at risk?

Adults of all ages have been infected, but the risk of severe disease and death is highest for older people and those with other health conditions such as heart disease, chronic lung disease, cancer and diabetes.

The virus appears to be less serious for children, says Vanessa Raabe, a pediatric and adult-infectious-disease specialist at NYU Langone Health. Only 2% of reported cases so far have been in children, according to a new study. Children who have gotten the virus have had milder symptoms, she says, and there have been no reported deaths in children under age 9.

How deadly is it?

The mortality rate has ranged between 2% and about 3.4%, according to calculations of confirmed cases and deaths world-wide, which change daily. But the true rate won't be known until epidemiologists can determine how many people have actually been infected.

The overall mortality rate may be less than 1%, U.S. health officials suggested recently in the New England Journal of Medicine, if the number of asymptomatic or mildly ill cases is several times greater than that of reported cases. That is still deadlier than seasonal flu, which has a mortality rate of about 0.1%.

Covid-19 appears to be less deadly than SARS, which erupted in China in 2002 and spread globally in 2003. SARS killed about 10% of the people it infected. The new coronavirus is also far less deadly than MERS or Ebola.



Who's Most At Risk

What are underlying conditions? And how many people have them?

By **BETSY MCKAY**

As the new coronavirus spreads around the world, health officials are repeatedly assuring the public: Your risk of getting seriously ill or dying is very low—unless you are older or have an underlying condition.

That is a lot of people, including millions of Americans.

Data from China, where the epidemic began, show death rates that are startlingly higher than the average for people age 60 and over, as

the U.S. population. The number of Americans 65 and over rose 27% between 2011 and 2018 to 52.4 million, according to the U.S. Census Bureau, while the under-65 cohort grew 2%. Older Americans make up 16% of the U.S. population.

About 46% of American adults have high blood pressure, according to guidelines by the American College of Cardiology and the American Heart Association. About 34.2 million people, or 10.5% of the U.S. population, have diabetes, according to the U.S. Centers for Disease Control and Prevention.

China's statistics are from the early weeks of an explosive epidemic in which hospitals were overwhelmed and doctors struggled to figure out how best to care for patients struck with a new disease. Death rates in less-hard-hit parts of China have been lower, and have

Lung function declines with age, making respiratory diseases a particularly serious threat for older people.

well as for people with high blood pressure, diabetes, asthma and other chronic conditions. In one large study by the Chinese Center for Disease Control and Prevention, 14.8% of people 80 and older and 8% of people 70 to 79 died. For people with cardiovascular disease, the mortality rate was 10.5%, and 7.3% for those with diabetes. Those rates compared with a 2.3% mortality rate in the overall population of 44,672 patients studied through Feb. 11, China's CDC says.

Those categories potentially apply to a vast and growing swath of

come down for the whole country over time, according to the World Health Organization.

Precise death rates are also unclear because it isn't known how many people have actually been infected. Many have either not been ill enough to suspect they had the disease, or haven't had access to a test.

Still, the data show that people with aging or taxed immune systems have a far more difficult time fighting off Covid-19, the respiratory disease caused by the new coronavirus.

"It's very clear that this virus has greater mortality and morbidity in



What Works (and Doesn't Work) To Boost Your Immune System

As the new coronavirus continues to spread across the country, having an optimally functioning immune system is more important than ever.

Medical professionals say it is important not to rush to buy supplements and vitamins that promise to enhance your immune system; there isn't much evidence that such products do any good. Instead, they say, stick with mundane, but proven, approaches:

• **Keep your stress levels down.** It's a bit of a vicious cycle: The more you stress about the virus, the more likely you are to suffer from it. "Stress can certainly hurt your immune system," says Morgan Katz, an assistant professor of infectious diseases at Johns Hopkins University.

Andrew Diamond, chief medical officer of One Medical, a nationwide network of primary-care providers, says the stress hormone cortisol turns off cells in your immune system. He recommends engaging in activities that people find relaxing, such as meditation.

• **Exercise.** Low- and moderate-intensity exercise naturally lowers cortisol levels and helps with immune-system function, says Dr. Diamond. One Medical recommends 30 to 60 minutes of exercise a day. If you're apprehensive about germs in the gym, walk or run outside.

But it is important not to go overboard. A recent study found high-performance athletes have an increased risk of infection, says Elizabeth Bradley, medical director of the Cleveland Clinic's Center for Functional Medicine.

• **Get adequate sleep. For adults,** that means getting seven to eight hours of sleep a night. Children should get more, depending on their age.

• **Make sure your vaccines are up-to-date,** especially the flu vaccine.

• **Eat plenty of plain yogurt every day.** "It's really an easy way to boost your probiotics and help support your microbiome," Dr. Katz says. "It helps to support the good bacteria that live in your

body, which help to fight bad bacteria or viruses."

• **Watch your diet.** Stick to a healthful, balanced diet filled with lots of colorful fruits and vegetables to ensure you're getting enough zinc and vitamin D and other important vitamins and minerals. Most experts say you should be able to get enough of these vitamins and minerals through your diet, and extra supplementation isn't necessary. But because vitamin D deficiency is relatively common, experts do recommend supplementation if levels are low.

Your immune system needs fuel, so avoid ultralow-carbohydrate diets, experts say. Drink lots of water and reduce alcohol consumption.

• **Stop smoking or vaping.** Smokers and those with respiratory disease have a higher rate of serious illness and complications from coronavirus. —*Sumathi Reddy*

Ms. Reddy writes the Your Health column for Personal Journal. She can be reached at sumathi.reddy@wsj.com.



For more questions and answers on the coronavirus, as well as continuing updates, go to [wsj.com/livecoverage/coronavirus](https://www.wsj.com/livecoverage/coronavirus). Order copies of this special print section at [wsjshop.com](https://www.wsjshop.com). For large quantity reprints of articles, visit [djreprints.com](https://www.djreprints.com).

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS

The Virus and Work: What Bosses Can and Can't Make You Do

Efforts to contain the outbreak's spread are raising questions for employees and employers

By Rachel Feintzeig
and Chip Cutter

The new coronavirus's spread is taking the relationship between employers and workers into new territory—in which both sides are trying to sort out their rights and responsibilities in containing the outbreak.

Caught between trying to keep the virus out of workplaces and minimizing business disruptions, employers are issuing all sorts of edicts unthinkable just weeks ago, from worker quarantines to office-wide remote work and even personal-travel reporting requirements.

Many employees, meanwhile, are wondering just how far their bosses have to go to protect them from the outbreak's spread, and what calls go too far.

To better understand what is permissible—and required—in confronting a public-health crisis in the workplace, The Wall Street Journal consulted employment lawyers and other workplace experts. The answers often lie somewhere in the murky balance between the Americans with Disabilities Act, or ADA, which aims to safeguard individuals' privacy, and Occupational Safety and Health Administration standards, designed to protect workers' safety. But the body of labor rules and regulations suggest it's wise to stick to the following guidelines, the experts say.

Here are answers to some of the most common questions from employees:

Personal travel

Can my employer cancel my vacation time?

In most workplaces, yes. Vacation time isn't guaranteed under federal law, and most employers are within their rights to cancel a vacation and require workers to return to the job, says Kenneth G. Dau-Schmidt, a professor of labor and employment law at Indiana University Bloomington. The exception is if an employee is covered by a union contract or specific employment agreement that includes certain time-off protections, he says.

Still, most bosses know that pulling a vacation is bound to be an unpopular move. "People can get upset if vacations are canceled," Prof. Dau-Schmidt says. "That would be the major limit on it."

What if my boss tells me to cancel personal travel plans. Is that legal?

Employers can't dictate how you spend your personal time, even if they do make a recommendation against travel to certain regions, says Roberta Matuson, an executive coach and author of "Evergreen Talent: A Guide to Hiring and Cultivating a Sustainable Workforce."

Does the company have to pay for a canceled trip?

If a boss insists on an employee cutting a trip, go ahead and ask for reimbursement. Some employers will see that as a reasonable request. But legally, they aren't required to pay unless an employment contract specifically calls for it, Mr. Dau-Schmidt says.

Working remotely

I really feel uncomfortable about commuting. Do I have the right to work from home?

Employers generally don't have an obligation to allow telecommuting, says Mitch Boyarsky, a labor and employment lawyer with Nelson Mullins Riley & Scarborough. An exception is an employee who qualifies under the ADA to work remotely to accommodate a disability. Another might be if the government is ordering a quarantine, other lawyers say.

I feel totally fine and don't think I'm at risk, but my boss is insisting I work from home. Do I have to?

Yes. Employers are within their rights to ask employees to work remotely, as long as they're not applying a policy in a way that could be deemed discriminatory, says Angela B. Cornell, a clinical professor at Cornell Law School and director of the

school's Labor Law Clinic.

For example, it's OK to ask workers who have recently traveled to China, Italy, Iran or another country especially hard hit by the outbreak to work from home for a given period. But it's not all right to ask workers over the age of 70 to work from home—even if the intentions are well-meaning—because age is a protected class under federal law.

My employer has requested that I work from home. Does that mean they can order me not to run errands or go to church?

While your boss can ask you not to come into the office, they can't bar you from going to other places or, say, hopping on the subway.



On the job

My job requires me to have a lot of close contact with many customers. Am I protected if I say I can't perform my job because of the outbreak?

Workers are protected from retaliation from an employer if they refuse what they consider an unsafe work assignment, says Howard Mavity, an Atlanta-based partner in the workplace-safety practice of law firm Fisher & Phillips.

It becomes less straightforward, though, if a "reasonable" employee would otherwise deem the assignment safe, Mr. Mavity says. If a hotel housekeeper, for example, has received the necessary training to protect against Covid-19, along with proper gloves and equipment, it may not be considered



reasonable to refuse to clean a hotel room. If a hotel is known to be housing guests with Covid-19, it's a different story, and housekeepers might be able to refuse the assignment, he says.

Do I have to take that business trip?

Minnesota employment lawyer Kate Bischoff says your boss can require you to go on a business trip.

Her advice for workers: Come up with a strong case for how technology could make a virtual meeting effective.

For employers, she urges caution. "Making such an ultimatum is going to



spread like wildfire through your organization," she says, prompting lots of workers to rethink their ties to the company. "It is a strategic mistake."

It could also be a legal mistake, depending on the circumstances. Daniel Schwartz, a partner with law firm Shipman & Goodwin who mainly represents Connecticut employers, points to a case in Connecticut where the court indicated it could be illegal to require a worker to travel somewhere unsafe.

Can my employer take my temperature at work?

The Equal Employment Opportunity Commission says that, according to the Americans with Disabilities Act, measuring an employee's temperature generally is considered a medical examination, and usually beyond the bounds of what an employer can do or require. But in an especially severe or widespread influenza outbreak, such a check is permissible. That rule is likely to apply to a coronavirus epidemic as well.

What if I catch Covid-19 at work? Is my employer liable?

Unlikely—because it's usually hard to prove. Generally, a staffer must prove that the disease was caused by "conditions peculiar to the work" and there were no other opportunities for exposure, according to guidance by Fisher & Phillips to employers.

Privacy

My employer knew a co-worker contracted the virus but didn't inform the rest of staff right away. Weren't they required to?

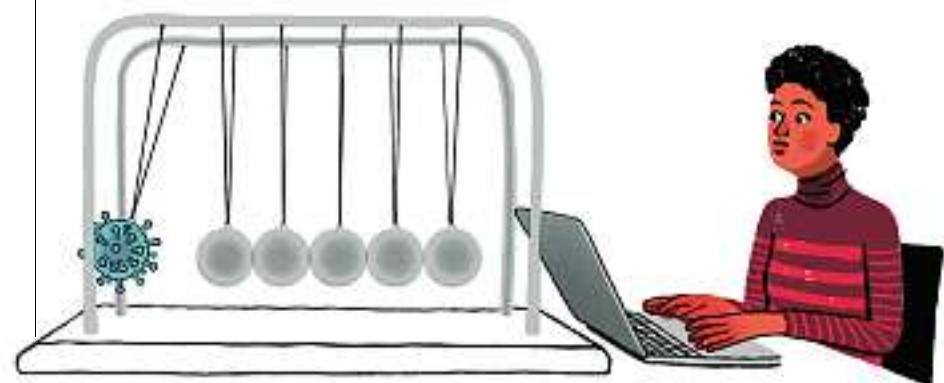
Generally, yes. Companies have an obligation to warn those who may have come in contact with someone diagnosed with Covid-19, says Ms. Cornell. Local health authorities may also want the public to know.

But it's highly unlikely a company would identify the employee in question by name. That could violate confidentiality requirements under the ADA, Mr. Mavity says. Employers are more likely to note that a staffer on a certain floor or part of the building contracted the virus. "It will take about a 12th of a second for everyone to know you're talking about Joe, but you don't say Joe," Mr. Mavity says.

If I come down with Covid-19, do I have to tell my employer? Can't I just say I need sick time?

There may not be a legal requirement, but there is an ethical one, Ms. Matuson says. If you work in an office or interact with colleagues in person, it's a good idea to alert your company so managers can tell others. If you work remotely and have had no direct contact with colleagues, clients or other people through your job, though, such a disclosure may not be necessary, Ms. Matuson says. "I would just say, 'I'm not feeling well,'" she says.

Ms. Feintzeig and Mr. Cutter are Wall Street Journal reporters in New York. Email rachel.feintzeig@wsj.com and chip.cutter@wsj.com.



Your questions answered

MONEY MATTERS

Who is paying for testing?

For now, most people with health insurance will likely have the cost of coronavirus testing covered in the way that any other type of care is covered—including whatever they may owe in copays, coinsurance or under a deductible. While tests given by public-health departments may be free, private labs or hospitals are likely to charge. A growing number of big insurers—including Cigna Corp., CVS Health Corp.'s Aetna and Anthem Inc., and Cambia Health Solutions' Regence plans—are pledging that members will pay no out-of-pocket charges for coronavirus testing.

Some states, including California, New York and Washington, have gone further.

They have said that insurers should waive charges not just for the lab tests but also for doctor or emergency-room visits that patients make to get tested for the virus.

However, the states' rules don't apply to all kinds of coverage. They don't regulate Medicare plans or self-insured employer coverage, for instance.

Federal regulators note that lab testing generally doesn't involve out-of-pocket charges for those covered by Medicare, but beneficiaries could still owe their deductibles and coinsurance for other diagnostic care related to the coronavirus, such as imaging tests.

Who is paying for treatment?

Care for those who are diagnosed with Covid-19 is likely to be covered by health insurers and programs like Medicare in the same way that other care is covered.

That could change if the big coronavirus-related legislative package that President Trump signed Friday leads to federal help with the cost of such care. The package includes \$2.2 billion for the CDC to contain the outbreak, but the details aren't yet clear. Also, the Trump administration is considering using a national disaster program to pay hospitals and doctors for their care of uninsured people infected with the coronavirus.

Meanwhile, some items, like masks used to prevent infection, may be paid for through flexible-spending and health-savings accounts, says Jody Dietel, a senior vice president at HealthEquity Inc., a provider of such accounts. But, she says, hand sanitizer and soap aren't generally eligible expenses, nor are over-the-counter medications, unless prescribed by a doctor.

Who is paying for sick leave?

The U.S. is one of the few industrialized countries that doesn't have a national law providing sick leave for workers. Kathy Dudley Helms, an employment lawyer based in Columbia, S.C., recommends that employees double-check their company policy. If they are out of sick days or working somewhere that doesn't offer sick leave, they should check the laws in their state.

Workers who are out sick for an extended period may also qualify for short-term disability coverage, says Jeff Levin-Scherz, a leader of the health-management practice at Willis Towers Watson.

Who is paying if you have to self-quarantine?

To self-quarantine is to take on potential costs for missing work, arranging child care and temporarily relocating.

Dr. Levin-Scherz says that a Willis Towers Watson survey of large employers showed that the majority kept paying salaries and benefits for workers furloughed from work in China and other parts of Asia due to the coronavirus. But if quarantines spread in the U.S., "each employer will have to make their own determinations," he says.

So far, disability insurers are also signaling that their coverage is for those who are sick or disabled, not healthy people kept at home by quarantine, he says.

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Your questions answered

THE BIG PICTURE

How worried should I be?

Most people who are infected might become only mildly ill, data suggest. But “mild” can be anything from a fever, cough and aches to pneumonia that doesn’t become too severe. So for most people it is probably not just a few sniffles. And mild or not, you’ll have to be isolated or quarantined. Of 44,672 cases in China, 81% had mild or moderate symptoms, 13.8% were severely ill, and 4.7% were critically ill, according to the Chinese CDC. All of those who died were in critical condition.

How long will this virus last and remain a potential threat?

Most forecasters are reluctant to predict—at least publicly—how this will play out over months or even years. Amesh Adalja, a senior scholar at Johns Hopkins Center for Health Security, says the outbreak is still in the first inning. It isn’t yet clear how many people have the disease, how quickly it is spreading or even how deadly it is.

The SARS coronavirus strain was gone within months, notes Dr. Poland. But that didn’t happen with the MERS strain.

THE WAY IT TRAVELS

How is the virus spread among humans?

It transmits through “respiratory droplets” when an infected person speaks, coughs or sneezes, according to the World Health Organization. The droplets spread through the air and can land on another person’s mouth or nose, or possibly be inhaled into their lungs, infecting them. The droplets can also settle on nearby surfaces like a desk, counter, or doorknob, where they can survive for a period. A person can become infected by touching a contaminated surface, then touching their mouth, nose or eyes. Respiratory droplets are heavy and don’t travel far in the air, so transmission is believed to occur mostly through close contact, meaning within 6 feet of an infected person.

How easily does the virus spread?

Disease-modeling experts have estimated that, on average, each infected person has transmitted the virus to about 2.6 others, though the range is between 1.5 and 3.5. Those rates are higher than for seasonal influenza but far lower than measles, in which one infected person can transmit the virus to 12 to 18 other people.



Do’s and Don’ts Of Washing Hands

Most people don’t do it the right way. That is, if they do it at all.

BY KATIE CAMERO

Public-health officials across the globe are urging people to wash their hands, calling it one of the best methods to prevent further spread of the new coronavirus.

But decades of research tell a sobering truth: People need to learn a thing or two about personal hygiene. Many don’t know proper handwashing technique. They do it for too little time, or they don’t do it at all.

Proper handwashing means scrubbing hands with soap and water for at least 20 seconds, according to the Centers for Disease Control and Prevention.

Yet just 5% of people spent more than 15 sec-

new virus. Respiratory droplets from coughs and sneezes can also spread these germs, as can touching surfaces like doorknobs and phones where those droplets may have landed.

“I don’t think we need to panic,” says Elaine Larson, professor emerita of nursing research at the Columbia School of Nursing, who has helped the World Health Organization develop handwashing guidelines. “But we do need to be reminded about basic hygiene.”

The virus’s fate is in your hands—literally—so experts say it’s time to start practicing what science is preaching.

Use soap

Before applying soap to your hands, run water over them. Soap and wa-

The CDC says studies haven’t shown that soaps with antibacterial ingredients provide any health benefits or remove more germs than plain soaps.

onds washing their hands after using the restroom, and 10% didn’t wash their hands at all, in a study of 3,749 college students published in the *Journal of Environmental Health* in 2013.

Hands are villages to thousands of germs—including bacteria and viruses. All it takes is a friendly handshake to spread respiratory diseases like Covid-19, the disease caused by the

ter together, with rubbing, is what helps rinse organisms off your hands and down the drain. Don’t worry about removing hand jewelry, Dr. Larson says. Those need to be washed, too.

Soap acts as a surfactant: a substance that helps release bacteria’s



Tips for Sanitizing Your Home

For many people, staying safe from the new coronavirus means staying home. But infectious germs can live in your house, too.

To minimize the risk of getting sick, the Centers for Disease Control and Prevention recommend taking action to disinfect high-touch surfaces, such as countertops, doorknobs, cellphones and toilet flush handles, since some pathogens can live on surfaces for several hours.

However, many people don’t disinfect properly, says Brian Sansoni, head of communications for the American Cleaning Institute, a Washington trade group that represents product manufacturers. First, you might need to clean—removing grease or grime—before you disinfect. Second, the disinfectant needs to remain on the surface, often for several minutes, before it dries or is wiped off. “Check the label for wait times to make sure the virus kill is effective,” Mr. Sansoni says.

In recent days, bleach and other clean-

ing products have been in short supply. Mr. Sansoni says manufacturers have cranked up production to keep up with demand. That said, he cautions against overusing chemical cleaners and, worse, mixing cleaners in hopes of boosting their effectiveness.

“There is no need to panic-clean,” he says. Just read the labels on everyday products to clean and disinfect the right way. “They’ll do what they’re supposed to do.”

Here are some other tips for staying safe at home:

◆ The CDC recommends washing hands vigorously with soap and water for at least 20 seconds. As a backup, use hand sanitizers that are at least 60% alcohol.

◆ The Environmental Protection Agency recently released a list of approved disinfectants to kill coronavirus. For surface cleaning, look for products such as wipes, sprays and concentrates that say “disinfectant” on the label and in-

clude an EPA registration number. These are required to meet government specifications for safety and effectiveness.

◆ For a homemade disinfectant, the CDC recommends mixing a quarter-cup of household chlorine bleach with one gallon of cool water.

◆ After disinfecting food-prep surfaces such as cutting boards and countertops, rinse them with water before use.

◆ For laundry, use detergent and bleach (for white loads) or peroxide or color-safe bleach (for colors) to kill germs. (Be sure to read clothing labels to avoid damaging garments.) To boost the effect, some washing machines have sanitize or steam settings that kill germs. Drying laundry on the dryer’s hot cycle for 45 minutes also is effective.

◆ If possible, operate dishwashers on the sanitizing cycle. Machines certified by NSF International (formerly the National Sanitation Foundation) must reach a final rinse temperature of 150 degrees and achieve a minimum 99.999% reduction of bacteria when operated on that cycle.

◆ Household air purifiers and filters that advertise the ability to kill or capture viruses can be useful but shouldn’t be a substitute for cleaning. Some purifiers use ultraviolet light, which has been shown to have germicidal effects, but their overall effectiveness can vary depending on their design, according to a 2018 technical summary of residential air cleaners by the EPA. While some filters advertise the ability to capture things like viruses, smoke and common allergens, they don’t necessarily kill microorganisms. —Beth DeCarbo

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grip from your hand when water is added. The study of college students, however, showed only two in three people used soap. The rest just rinsed their hands.

Dr. Larson suggests half a teaspoon of liquid soap is enough, or a glob about the size of a quarter, although bigger hands might need more. Health experts say that too much soap can remove your skin’s natural oils, which have helpful antibacterial properties.

The CDC says studies haven’t shown that soaps with antibacterial ingredients provide any health benefits or remove more germs than plain soaps. All soaps, however, can deactivate a coronavirus so it can no longer infect you.

The new coronavirus, coined SARS-CoV-2, is a spherical structure with spiky proteins attached to a membrane, or envelope, that protects the pathogen’s genetic material. Once it comes into contact with soap, this envelope dissolves, leaving behind a dysfunctional virus.

“The envelope is a machine that allows the virus to sneak into human cells,” says Jonathan Abraham, an assistant professor of microbiology at Harvard Medical School. “Without it, the virus cannot infect you.”

Scrub all surfaces of your hands

People on average wash their hands for only about six seconds, according to several studies. Twenty seconds is what’s recommended—or, the length of the “Happy Birthday” song sung twice—though it depends on what you touched and how often.

And even 20 seconds “is not helpful if you’re not washing the right places,” Dr. Larson says. “It’s about quality, not quantity.”

The most vulnerable parts of your hands are your fingertips, between your fingers, the backs of your hands and under your nails. Rubbing these surfaces with enough force is critical, health experts say. People who have longer nails should be extra cautious, they add.

Scrubbing too hard or too frequently can damage your skin by making it dry and more susceptible to cracking, Dr. Larson says. Cuts and cracks give germs the perfect spot to set up shop. To avoid skin damage, Dr. Larson recommends using a moisturizer after washing.

Studies have shown that water temperature doesn’t affect how many germs are removed. The CDC says warm or cold water will do, but some experts warn that when water is too hot, it can also damage skin.

After a thorough scrub with soap, remove all suds by rubbing every surface of your hands under running, clean water to ensure that pathogens get washed away, Dr. Abraham says. Leaving some soap behind may also soak up moisture from your hands, leaving them dry and more likely to crack.

Dry your hands completely

Now it’s time to dry your hands as thoroughly as you can, because moist hands give living organisms a better chance of surviving and spreading to others, Dr. Abraham says.

The CDC says there is not enough data to confirm whether a significant amount of germs are transferred from the faucet knob to your hands. Some experts suggest using a paper towel to turn the water off, while others discourage it because it wastes paper towels.

Automatic blowers and paper towels both dry hands well.

Alcohol-based sanitizers in a pinch

If you’re on the go, alcohol-based sanitizers are great alternatives to soap and water. They cannot kill all viruses, like the norovirus, which lacks a dissolvable envelope. But a sanitizer can kill any coronavirus on your hands as long as it’s made up of at least 60% alcohol, health experts say. Plain rubbing alcohol also works, but sanitizers maintain a balance of alcohol and other ingredients to help keep skin healthy and moisturized.

It’s important to use enough sanitizer to cover the entire hand. Dr. Larson suggests half to one teaspoon.

Sanitizer also works only when it’s still wet, so health experts advise against using paper towels to dab your hands. Give the product at least 10 seconds to complete its job, then rub your hands together or let them air-dry.

Ms. Camero is a reporter for *The Wall Street Journal* in New York. She can be reached at katie.camero@wsj.com.

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Protection Without Getting Fleeced

As products become unavailable, here's how to cope

By NICOLE NGUYEN

As retailers struggle to keep disinfecting supplies in stock, prices are soaring online for in-demand goods like masks, sanitizers, isopropyl alcohol, cleaning wipes and even toilet paper, as opportunists seek to profit from the panic.

How can people protect themselves from the virus and avoid getting fleeced during the pandemonium?

If you can wait, wait. Products will eventually be back on shelves, so there's no need to overpay, says Chuck Bell, programs director at Consumer Reports. "This situation will go on for many months. If there are shortages, one can reasonably expect that manufacturers will respond."

He also notes that panicked shoppers should keep in mind the people who need prioritized access to certain supplies.

Soap can be more effective than sanitizer. According to the Centers for Disease Control and Prevention, washing hands with soap and water is more effective than hand sanitizer for removing certain kinds of germs. Sanitizer also loses its effectiveness when hands become soiled or greasy, the CDC says.

Shop local—but don't trust websites showing "in-store" inventory. Prices at brick-and-mortar retailers haven't skyrocketed the way they have online, so you could get a better deal on products in person—if you can find them.

When I used the "in-store" filter on some major retailer websites, Walmart, Target and Walgreens showed items in stock locally, while The Home Depot indicated "limited availability." Over the phone, however, in-store staff delivered the disappointing news: There were no products on shelves, and the websites weren't up-to-date.

A Home Depot spokeswoman clarified that, while a store's stock is updated on the app within minutes, "limited availability" indicates that inventory is very low, so in-store pickup is disabled. The Home Depot app does let you sign up for email alerts when the item is restocked.

Not sure which retailers sell what? Try a comparison shop-

ping service. BuyVia and Google Shopping (also available as apps) are designed to help shoppers compare products and prices across multiple retailers. BuyVia is better at comparing offerings from online sources like Amazon and Chewy. Google Shopping reveals brick-and-mortar stores that might have what you're looking for. Select "Available nearby" for results from retailers near you.

Instacart can show up-to-date information on what's in stock.

I did, finally, chase down some hand sanitizer, at a Safeway across town. I found it using Instacart's grocery-delivery app. The app notified me that the item was running low and preemptively requested an approval for a replacement.

A \$10 minimum was required for checkout and the sanitizer was only \$5.79, so I decided to trek to Safeway myself. Indeed, there was a 32-ounce bottle on the shelf.

Instacart says it uses real-time shopper input, plus historical purchase data, to keep its catalog as up-to-date as possible. During peak shopping times, that data offers a good picture of hour-by-hour changes.

If you must buy online, consult price trackers to avoid being gouged. CamelCamelCamel shows an item's price history and emails you when there's a price drop on Amazon. One issue: You'll receive an alert only

for that specific item, while there might be hundreds of listings for the same or similar products.

Keepa has a browser extension that displays an item's price history right on the Amazon product page.

Sign up for Amazon product-availability alerts. For some out-of-stock products on Amazon, a sign-up button will appear where the "Buy" button typically is. It's important to note that the alert doesn't reserve the product for you, so you'll need to act quickly when you receive it. You can view your product availability alerts in your Amazon Account settings.

Before you checkout, take note of shipping costs. In one Amazon listing for an 8 oz. bottle of Purell, the cost of shipping (\$14.49) was nearly as much as the product itself (\$15).

Watch for how Amazon sellers represent (or misrepresent) stock and quality. An item might appear available, but take a look at its shipping time, below the price. One Amazon listing for Wet Ones showed "In stock on April 9, 2020." And even that is sometimes wishful thinking on the seller's part.

A product page may also say an item is "by" Purell, Clorox or Lysol, but that only indicates the product's brand, not the listing's seller—a confusing but important distinction.

Look for small text that reads, "Ships from and sold by." If the seller is a third party, it'll say, "Sold by [seller's name] and Fulfilled by Amazon." Click the link attached to the third party's name to read its reviews. Is it a mix of very positive and very negative reviews? (A potential red flag.) No reviews at all? (A definite red flag.) Do reviews mention

that received items were expired or appeared counterfeit? (Walk away.)

You'll need to apply the same level of vetting on Walmart's website, which also carries items from third-party sellers. A Walmart.com listing will indicate the product is "Sold & Shipped by" a specific seller. Clicking on the seller name will reveal its return policy, reviews and shipping costs.

Be extra careful on eBay. Because many transactions on eBay are user to user, it's hard to know the source of the product you're buying. Plus, many listings on the site don't include the item's expiration date, and many sellers aren't offering returns for consumable products like hand sanitizer.

An eBay spokesperson said the site is working on removing listings for items like masks and sanitizer, to avoid violating price-gouging laws in states that have declared a state of emergency. On Sunday, there were over 2,000 listings for sanitizer on the platform.

Don't fall for ads making coronavirus-related medical claims. Facebook and the Advertising Standards Authority in the U.K. recently banned these kinds of exploitative advertisements, but there are still promotions hawking medical face masks and miracle cures floating around the ether.

"If there's a breakthrough in treatment, we can expect to hear about it from the CDC or other reliable health organization—not through a banner ad on the internet," Mr. Bell says.

Ms. Nguyen is a Wall Street Journal technology columnist in San Francisco. If you've found creative ways to track down hard-to-find germ-zappers, email her at nicole.nguyen@wsj.com.

American shoppers have seen a lot of empty shelves for some items recently.

An item might appear to be available, but take a look at its shipping time.

Working From Home? There Are Ways to Stay Sane and Productive

What's the best way to work effectively from home? That has suddenly become an urgent question as employers around the world tell staffers to work remotely in an effort to stem the spread of the new coronavirus.

Here's some advice.

—Make sure you have all the tools you need: The right laptops, network access, passwords and instructions for remote login.

—Minimize distractions and noises from others in your household. Separate your workspace from your personal space as much as possible. Use noise-canceling headphones. On conference calls, mute your microphone when you aren't speaking. If videoconferencing, be mindful of what the camera is picking up behind you.

—Use digital collaboration tools to communicate with colleagues. Schedule group meetings by videoconference and set up group chats via programs like Slack or Mi-

crosoft Teams. If email is leading to a misunderstanding, pick up the phone and have a conversation.

—Talk with your manager about child-care challenges.

If you're asked to work from home and your children's school or day-care shuts down, that might affect your ability to do remote work during normal business hours. In some cases, children may be old enough to fend for themselves. But younger children will need more attention. One possibility might be to set up shifts at home, where one parent works remotely and the other parent cares for the child, and then they switch.

—Take steps to improve your internet speed. You may encounter slowdowns during periods of heavy use, like when you're trying to work from home while your children are watching videos or playing games. Switch to Ethernet if you can. If not, move



as close as possible to your Wi-Fi router.

—Fight the feeling of isolation. While you want to minimize distraction from your family members or roommates, you also want to avoid feeling like you are alone all day. Maintaining social connection is tricky while trying to create social distance to stave off the virus. But there are ways to maintain your mental health: Call people on the phone or videochat, and break up the day with some exercise. Some employers have also begun offering online resilience training to address the challenges of working from home during the outbreak.

—Joanna Stern, Rachel Feintzeig, Chip Cutter and Te-Ping Chen

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Your questions answered

How should I treat packages from China? Is it possible to transmit the virus through the mail?

The Centers for Disease Control and Prevention has said there is likely very low risk that the virus can be spread from products or packaging shipped from China, because of poor survivability of coronaviruses on surfaces, a spokesman for the U.S. Postal Service says. Also according to the CDC, he says, there currently is no evidence to support transmission of the coronavirus associated with imported goods, and there have been no reported cases of the virus in the U.S. associated with imported goods.

What steps can we take to minimize the risk of transmission of Covid-19 on public transportation?

Experts say keeping your distance from people who are coughing and sneezing may help. Wiping down a subway or bus pole is something that can be done, says William Schaffner, a professor in the division of infectious diseases at Vanderbilt University Medical Center in Tennessee. Better yet, if it's a short enough distance, walk and get some fresh air and exercise. The best advice, experts say, may be to avoid touching your face as much as possible while on public transport and washing your hands or using hand sanitizer as soon as you're off.

IF I HAVE SYMPTOMS...

What do I do if I am coughing or have a fever and wonder if it might be the new coronavirus?

Contact your doctor if you have concerns. Right now, the odds are greater that your cold or fever is caused by influenza or another respiratory disease, says Gregory Poland, director of the Mayo Clinic's Vaccine Research Group in Rochester, Minn.

When should I go to the hospital?

Experts say you should go to a hospital if you're sick enough that you think you should be admitted. The tell-tale sign is difficulty breathing or shortness of breath combined with a fever of 101 degrees or higher, says Wilbur Chen, an associate professor of medicine at the University of Maryland School of Medicine.

If my child or anyone else in my household is coughing or has a fever, should I keep them home? For how long?

Absolutely. Of all times to keep children at home when they are ill, now is the time, says Cameron Wolfe, associate professor of medicine in the division of infectious diseases at Duke University Health System. "The younger the child, the less capable they are of keeping their own secretions and snot to themselves, so parents have to be mindful of that," says Dr. Wolfe.

Dr. Raabe at NYU Langone Health says for any illness, children should be home until there is no sign of infection, which is when their symptoms have resolved and they are fever-free without any medications for at least 24 hours.

What, if any, precautions should be taken by pregnant women?

Experts say pregnant women fall into the vulnerable category of people more likely to get seriously ill with the new virus. Avoid large public gatherings if you're in an area with new coronavirus cases, says Dr. Poland. "The precautions should be heightened."

Dr. Wolfe says to make sure you have an influenza shot if you are pregnant and reach out to your doctor to see if they have contingency plans if new coronavirus cases escalate, such as conducting a virtual visit through telemedicine when possible.

WHAT SUPPLIES YOU NEED

Should I buy a mask or gloves?

Not unless you or someone in your household comes down with the new coronavirus. Dr. Raabe says there's no evidence that masks help if you're healthy. While the N95 masks used in hospital settings can be effective, experts say they need to be fitted for the individual. That occurs for health-care workers in hospitals but not when people buy such masks online or over the counter. You could consider wearing a mask, Dr. Raabe says, if you're sick or in close contact with an ill child or loved one.

Gloves also are only useful if you're taking care of an ill child or loved one and are in contact with bodily fluids. Wearing them day to day for prevention is not helpful, as we touch our hands, eyes, and mouth frequently.

Coronavirus vs. Flu: A Comparison

They have some similarities. But some major differences.

By BETSY MCKAY

The new coronavirus and the seasonal flu are similar in many ways. Both are respiratory diseases that spread through droplets of fluid from the mouth and nose of someone who is infected. Both are contagious, produce similar symptoms and can be deadly.

But there are some major differences. While both produce many of the same symptoms—fever, cough and muscle aches—and are particularly hard on the elderly, they come from two different families of viruses. People have more protection from the flu because there is a vaccine and they are exposed to flu viruses every year.

There is no vaccine yet to protect people against Covid-19, the disease caused by the new virus.

"I think what we're seeing with Covid-19 is what influenza would look like without a vaccine," says

mates have ranged between 1% and 2%.) That's because current calculations are based on tallies of people who were ill enough to be tested, they wrote.

Epidemiologists say they are certain there are many more people who were infected but didn't receive a test—either because they weren't ill enough to get one or didn't have access to a test. Problems with a test developed in the U.S. means many people haven't been able to get one.

Studies suggest there are also people who were infected but had no symptoms—a common occurrence with many viral infections.

"We don't know the proportion of mild or asymptomatic cases," Marc Lipsitch, professor of epidemiology at Harvard T.H. Chan School of Public Health and director of the Center for Communicable Disease Dynamics, said in a recent teleconference.

In addition, the mortality rate has differed by region and by intensity of transmission, according to a report by an international mission to China of experts led by the WHO. It was 5.8% in an explosive initial outbreak in Wuhan. But in other, less-hard-hit areas of China, which had more time to prepare to care for patients, it was 0.7%. The rate in China

said. That would show how many people had been infected, he said.

Two blood tests have been licensed in China to conduct such studies, according to the WHO.

The new coronavirus, called SARS CoV-2, infects the lower respiratory tract. About 80% of people in a cohort of nearly 56,000 people in China had either mild or moderate illnesses, according to the report by the experts who traveled to China. Those illnesses started with a fever, dry cough, fatigue and other flulike symptoms, but sometimes included shortness of breath and progressed to a mild form of pneumonia, according to the report.

An additional 13.8% became severely ill, requiring oxygen, and 6.1% were critical, meaning respiratory and organ failure, according to the report. People over the age of 60 and those with underlying conditions such as cardiovascular disease, chronic lung disease, diabetes and cancer were at highest risk, the report says.

There are contradictory reports of how transmissible Covid-19 is. The disease does not seem to spread as easily as the flu, according to the WHO, which found that most of the spread in China was through close contacts like family members. Other disease modeling suggests the new virus is more transmissible than the flu.

Experts say the new coronavirus may appear to be more transmissible than flu right now because people have at least some immunity to seasonal flu viruses, since the flu goes around every year, and there is a flu vaccine.

About 34 million people in the U.S. have had the flu this season, which isn't over yet but is starting to ease, according to the latest flu report from the Centers for Disease Control and Prevention. Of them, about 20,000 have died.

Flu strains change slightly every year, and the number of deaths depends on how severe the strains that are circulating that season are, according to the CDC. The most severe flu pandemic in recent history killed tens of millions of people in 1918 and 1919, meaning more than 2.5% of those it infected, according to CDC research.

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has come down over time, the report said. In South Korea, which has had more than 7,000 cases, the mortality rate is 0.7%.

To calculate the "infection fatality rate"—meaning an infected person's risk of death—will require large-scale studies to determine how many people in an area where there has been an outbreak have antibodies to the virus in their blood, Dr. Lipsitch



What Can You Do to Help Contain Coronavirus?

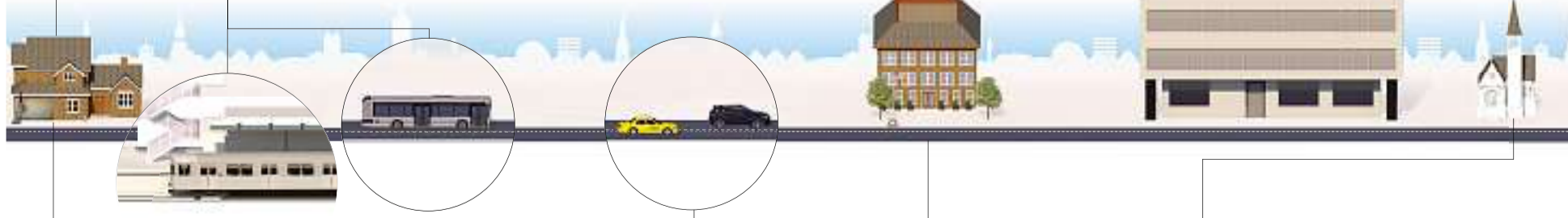
With the new virus at pandemic levels, public health experts say healthy individuals can help prevent the spread with good hygiene and some social distancing in their everyday lives.

Home

- Wash your hands often with soap and water for at least 20 seconds.
- Cover coughs and sneezes.
- Avoid touching your face.
- Disinfect frequently-touched surfaces and objects.

Public transportation

You can try to avoid rush hour, or walk if it's a short trip. You could wipe down the subway pole before holding on. But experts say the best advice may be to wash your hands or use hand sanitizer once you're off (and, seriously, try not to touch your face).



If someone you live with gets sick, avoid sharing food and other personal items. Have them use a separate room and bathroom if possible.

Keep a few weeks' worth of medications and other supplies, in case you need to stay home.

Cars and taxis

If you are diagnosed with Covid-19 or think you may have it, you shouldn't use ridesharing apps, taxis or any type of public transportation.

If you're a parent or caretaker, arrange child care in case schools close. If classes are suspended, students should also cancel extracurricular activities and other gatherings.

Office

If you can, work remotely or in staggered shifts. But many people can't work from home. In that case, stop shaking hands and stay home if you're sick. Use disposable wipes to clean frequently-used surfaces, such as keyboards and desks.

Community events

Be prepared to postpone or cancel events and services. If you're older or have underlying health conditions, you should stay home if there's an outbreak in your community. Try to avoid public places and gatherings.

Sources: Centers for Disease Control and Prevention; Joël Mossong (Laboratoire National de Santé)

Research: Vivien Ngo and Francesca Fontana/Graphic: Alberto Cervantes/THE WALL STREET JOURNAL



How Vulnerable Are Children?

So far, kids seem to be relatively safe. But they are key transmitters.

By SUMATHI REDDY

As the new coronavirus spreads, many parents are worried about keeping their kids safe. So far, children seem to be surprisingly less vulnerable to severe infection.

But scientists suspect children could play a key role in transmitting the disease: Reports have shown children have the virus in their secretions for up to 22 days. So it's still vital to try to prevent them from getting it and spreading it to others.

Only 2% of the patients in a review of nearly 45,000 confirmed Covid-19 cases in China were children, and there were no reported deaths in children under 10, according to a study published in JAMA last month. (In contrast, there have been 136 pediatric deaths from influenza in the U.S. this flu season.) Three percent of Covid-19 cases occurred in people over 80, while 87% were in those 30 to 79 years-old.

About 8% of cases were in people in their 20s. Those 10 to 19 years

old accounted for 1% of cases and those under 10 also accounted for only 1%. A separate study looking at the number of infants hospitalized for Covid-19 in China between Dec. 8 and Feb. 6 found only nine infected babies.

"You would think [children] do worse as they do with seasonal influenza but that hasn't been reported yet," says Gregory Poland, director of the Mayo Clinic's Vaccine Research Group in Rochester, Minn.

In the JAMA China study, mortality rates were higher among the elderly: Of confirmed cases, there was a 14.8% fatality rate in patients who were older than 80 and an 8% rate for patients in their 70s. The overall rate was 2.3%. The mortality rates for patients 10 to 19 years old was 0.2%, and it was 0.2% for patients in their 20s and 30s, as well. It was 0.4% for people in their 40s, 1.3% for those in their 50s, and 3.6% for people in their 60s.

A World Health Organization report on China concluded that cases of Covid-19 in children were "relatively rare and mild." Among cases in people under age 19, only 2.5% developed severe disease while 0.2% developed critical disease.

"At this point the evidence suggests that children have a reduced risk of developing symptomatic infections," says Karen Kotloff, head

of an infectious disease specialist at NYU Langone Health, says there's not enough data to say that's the case.

As people age, their immune systems typically weaken, so that could play a role, says Dr. Raabe. Children also don't smoke, which appears to be a risk factor for those experiencing serious illness.

However, even if they're not suffering severe symptoms themselves, children may "shed" large amounts of virus and may do so for many days, case reports have found, says James Campbell, a professor of pediatrics at the University of Maryland School of Medicine. Children had virus in their secretions for six to 22 days, or an average of 12 days.

Shedding virus doesn't always mean you're able to transmit the virus, he notes. But prolonged shedding, high viral loads and children who have no or few symptoms make for a potentially risky combination as families may be unaware their children are contagious.

Some of the best ways to limit the spread, experts say: Make sure kids are washing their hands frequently, keep them out of school and away from other people if they are sick, and clean surfaces often.

With influenza, children are a major source of transmission in the community. Studies have shown that if school-based vaccination for the flu happens, there is a decrease in the rate of infections among adults, says Dr. Kotloff. "We don't have a broad enough experience testing people, especially kids who don't have symptoms, to have any idea whether that's true" for Covid-19, says Dr. Kotloff. "But it's possible that that could be a role that kids play and that has implications."

If they produce a lot of virus they could "be a powerful vehicle for transmission," says William Schaffner, a professor in the division of infectious diseases at Vanderbilt University Medical Center.

School is a breeding ground for spreading infectious diseases. Children, even if they aren't severely sick,

Reports have shown that children have the coronavirus in their secretions for as long as 22 days.

Typically with the flu and other respiratory viruses, children under 2 are at risk of suffering from complications such as bronchitis or pneumonia because their airways are narrow. These viruses typically cause swelling and inflammation of the airways, says Dr. Poland.

Even though respiratory diseases, such as asthma, are an underlying medical condition that pose a greater risk of serious illness, there haven't been any reports so far of asthmatic children being hospitalized or dying of Covid-19.

Dr. Poland said some experts speculate that children may not have the same density of the receptors to the virus that adults have. There has also been speculation that children may have more protection due to exposure to other coronaviruses. But Vanessa Raabe,

could spread Covid-19 to more vulnerable populations. That is why closing school is an effective strategy to try to contain the virus, experts say.

"You're trying to decrease the chain of transmission," says Dr. Poland. "Children are still transmitting the virus to people who have a higher likelihood, based on age and other conditions, of having a severe case or even dying of it."

Typically if you don't have a lot of symptoms, you're less likely to infect someone else since you aren't coughing or sneezing as much, Dr. Raabe says. But children aren't as good at covering their nose or mouth when they sneeze or cough. "So it's concerning that they could be transmitting," she says.

Ms. Reddy writes the Your Health column for Personal Journal. Email sumathi.reddy@wsj.com.

A security member checked the temperature of a passenger at an airport in Palma, Colombia, this week.

Below, a child is checked with a thermal scanner at an airport in Dhaka, Bangladesh, on March 11.



SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Your questions answered

What else can I do to protect myself?

The most important thing you can do is wash your hands frequently, for at least 20 seconds each time. Wash them regularly when you are at the office, when you come home, before you eat and other times that you are touching surfaces. You can also use an alcohol-based hand sanitizer. Don't touch your eyes, nose or mouth—viruses can enter your body that way. Maintain a distance from people who are sick.

Wipe down objects and surfaces frequently with household cleaner, which will kill the virus. Dr. Poland says if it is a surface exposed to sunlight outside, the virus likely only lives for a few minutes or up to an hour. But if it is indoors and a dry environment, germs can live up to a day or two.

If someone at home is sick, the CDC recommends cleaning surfaces that are touched frequently, such as doorknobs and countertops, every day. Regular household disinfectant wipes and cleaners should suffice. Anything with alcohol or bleach works.

Get a flu shot, if you didn't get one already. Stock up on some supplies in case you have to stay home, infectious-disease experts say. To avoid cleaning out store shelves, just buy a few extras on your regular orders or trips to the store. Items to consider include shelf-stable foods like cans of beans, packages of rice and pasta, and beverages; pain relievers and other common medications; extra prescription medications; and hygiene and cleaning products.

AVAILABLE TREATMENTS

Are there drugs to treat the new coronavirus?

There aren't any drugs or vaccines approved specifically for the new virus. But several are in development or being studied. Two clinical trials in China and one in the U.S. are evaluating remdesivir, an antiviral drug from Gilead Sciences Inc. that was also tested for Ebola.

A hospital in Wuhan is conducting a clinical trial using a combination of two drugs for HIV that had been tested on MERS patients in Saudi Arabia. The therapy, sold under the brand name Kaletra in the U.S., is normally used to treat HIV patients and belongs to a class of drugs known as protease inhibitors, which block a key enzyme that helps viruses replicate. In addition, a few vaccine makers are developing products targeting the virus.

Is there a test for the virus?

Yes, there are diagnostic tests, which are the only way to confirm for certain whether a patient has the new coronavirus or another infection. Right now in the U.S., a test is hard to get. Because symptoms of Covid-19 are like those of the flu, the tests are given only to people who doctors or public-health officials believe may have the disease. More tests are being distributed, and the CDC says doctors may decide whether a patient should be tested.



STAYING OUT OF CIRCULATION

What if I have to self-isolate?

If you are told to self-isolate, you will need to stay at home and avoid contact with others for 14 days. Try not to stay in the same room with others at the same time, the U.K.'s National Health Service recommends. Stay in a well-ventilated room with a window that can be opened. Don't share towels, utensils or dishes with others, and wash them thoroughly after use. Clean bathrooms and surfaces regularly. Wash your hands before and after contact with pets.

Don't go out to public places; ask family members or friends to get groceries, medicines and other supplies for you. Ask delivery people to leave items outside.

—Betsy McKay, Sumathi Reddy, Julia Carpenter and Anna Wilde Mathews



How Best to Clean Your Smartphone

Then again, some people say not to even bother cleaning it

By JOANNA STERN

The world is on fire, but don't you worry, I'm here to tell you how to clean your smartphone.

That is, if you really want to clean your phone. Three people I spoke with over the past week said they did not clean their smartphones—and they're all leading experts on microbiology and infectious disease.

WAIT! WHAT? I thought smartphones were dirtier than a toilet bowl. Heck, even academic studies, like one from the February issue of the *Journal of Hospital Infection*,

infectious Diseases at Brigham and Women's Hospital. "People should keep their phones close to themselves. There is very little risk involved then."

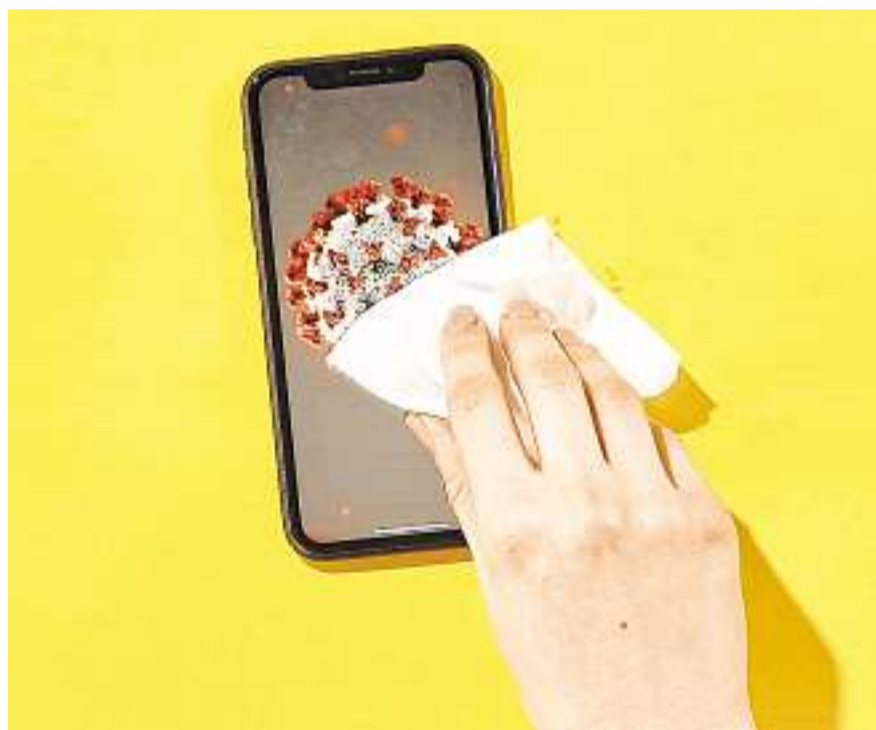
"My phone is the least of my concerns," says Alex Berezow, a microbiologist and vice president at the American Council on Science and Health.

After days of disinfecting my phone like a surgical tray, I was shocked. Phone cleaning is certainly not as cut and dried as you thought. After hours of research, I've come up with some basic lessons for what you can do—and not do—with that petri dish phone of yours.

Should I clean my smartphone?

Let's be very clear: Even when there isn't a pandemic sweeping the globe, your phone can get dirty.

Generally, that filth is not an is-



have found considerable amounts of bacteria, including fecal matter, on phone screens.

And yet all these experts said some variation of the same thing when I asked about combating coronavirus: thoroughly clean your hands; don't touch your face; don't worry about your phone.

Sure, except what if you're one of those people where your smartphone is basically an extension of your hand? What if I touch a dirty subway pole, then touch my phone, then my phone touches my face?

What if I'm the kind of person who licks my phone? (Don't judge.) A recent study found that, on surfaces such as metal, glass or plastic, coronavirus can survive for anywhere between two hours and nine days.

"It's possible, theoretically, for this to live on a smartphone. If you had it out and someone sneezed or coughed on it and then you handled the phone, you could pick up infection that way," says Daniel R. Kunitzkes, chief of the Division of In-

sue, says Emma Hayhurst, a microbiologist at the University of South Wales and co-author on the aforementioned *Journal of Hospital Infection* paper. "We were trying to avoid mass panic about mucky phones. When you are healthy, it's really not a problem."

Translation: You should clean your phone—just not compulsively.

How should I clean my smartphone?

All my new infectious-disease friends say that to effectively kill the virus on a surface, you need disinfectant solution—for instance, something with at least 55% isopropyl alcohol.

On Monday, I reported that Apple now gives the OK to use a 70% isopropyl alcohol wipe or Clorox disinfecting wipe on the surface of all Apple products. Google also confirmed that it's OK to use isopropyl alcohol or Clorox wipes to clean its Pixel devices. Of course, the big

question right now is, where do you BUY the wipes?

Samsung advises Galaxy owners to dampen a cloth with a disinfectant or alcohol-based solution and wipe gently. It says not to apply liquid directly onto your phone.

Can you use soap and water on your phone, as many have asked me? Sure, but avoid using rough paper towels or sponges on the screen. And never use bleach.

Can I damage my smartphone by cleaning it?

The big cleaning-solution fear cited by smartphone makers is damage to your phone screen's oleophobic layer. This is a protective coating on your screen that repels both water and oil.

Using a brand-new iPhone 8, I wiped the screen 1,095 times with Clorox disinfecting wipes. I figured that's the equivalent of wiping down your phone every day for three years. The only thing showing any wear after all that wiping? My poor, wrinkly fingers.

When cleaning with disinfecting wipes, however, avoid getting liquid in the ports. Even if most phones are now water resistant, that resistance wears over time.

What about my phone case?

Apple provides good advice on cleaning the various materials its cases are made of at support.apple.com. (Search for "How to clean your Apple products.") Even if you don't have an official Apple case, these tips can be helpful.

When I was at a hospital last week, I met a nurse who had a phone case especially for work. (She still cleans it every day.)

A dedicated phone-cleaning gadget. Really?!

If you're not into getting your phone and hands all wet, you can try a UV sanitizing gadget like the \$100 PhoneSoap Go. Pop your phone in the tiny tanning bed for 10 minutes and the company claims to kill 99.9% of bacteria and germs on it.

Why use this instead of a wipe? Well, because apparently we suck at cleaning. People don't cover the whole phone well with disinfecting solutions, according to PhoneSoap chief executive and co-founder Wesley LaPorte. Plus, if you don't let the cleaning solution sit for a while—Clorox recommends four minutes on its container—some bacteria might survive.

"This disinfects in a consistent manner," Mr. LaPorte says.

The microbiologists I spoke with said UV light can be an effective way to kill bacteria.

Samsung is fine with you using PhoneSoap or its competitors—and is even offering free UV cleaning at select Samsung stores, if you feel like venturing out. Apple doesn't explicitly offer in-store cleaning, but store employees are known to clean gadgets using wipes with 70% isopropyl alcohol.

Our anxieties are at an all-time high, understandably. If cleaning makes you feel better, grab some wipes and go to town. Wipe for hours—even days. Your phone will be just fine. Just remember, you really don't need to. Unless you're one of those crazy phone lickers.

Ms. Stern is The Wall Street Journal's personal technology columnist. She can be reached at joanna.stern@wsj.com. Kenny Wassus contributed to this column.

At the Gym, Keep Apart, Wipe the Equipment and Clean Your Hands



The gym, an escape and haven in the day-to-day lives of millions, has become yet another source of anxiety in the age of coronavirus.

As cases of Covid-19 rise in the U.S., health officials are urging people to practice social distancing. That could make spin classes and yoga sessions seem more harmful than healthy. Yet many fitness fanatics crave exercise more than ever and are forging forward, while taking precautions.

Tony Maloney, the fitness-center manager at the National Institute for Fitness and Sport in Indianapolis, says people should be exercising now more than ever. "When endorphin levels go up, it can counteract the

stress response that is so damaging to the immune system," he says.

Madison Mitleness still braves the treadmill at her gym in New York, but says she won't touch the dumbbells or weight machines for fear of germs. Her logic—that the more people touch shared objects, the higher their risk of transmitting a virus—isn't unfounded.

But according to the U.S. Centers for Disease Control and Prevention, coronavirus spreads more easily between people standing within about 6 feet than through contact with contaminated surfaces. Cleaning and disinfecting surfaces appears to lower the



chances of transmission.

Gregory Poland, director of the Vaccine Research Group at the Mayo Clinic in Rochester, Minn., says the gym isn't necessarily riskier than any other communal area, but people should remain vigilant. His tactic at the gym has been to use hand sanitizer—at least 60% alcohol-based—liberally every time he touches a piece of equipment. In general, things like gym towels, he says, are less risky, since

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SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Take disinfecting wipes, cold medicine and a thermometer in case you get sick.

If You Really Need to Travel, Here's How to Do It And Protect Your Health

By SCOTT MCCARTNEY

Travel exposes you to crowds of people, increasing the risk of exposure to coronavirus. In addition, travel transports the virus, increasing the risk for communities. The widespread reduction in travel is painful for those who work in the industry and those who rely on moving around for livelihood and pleasure. But it also seems to be good public-health strategy.

But what if you need to travel—for your job or your family? Here are some tips, based on advice from the Centers for Disease Control and Prevention, public-health experts, medical studies on aircraft disease-spread and ventilation, and common sense:

Packing

Take extra supplies of any medications in case your travel gets disrupted and you can't get home or end up getting quarantined.

Take lots of hand sanitizer, some in travel-size bottles and some in your checked luggage or TSA liquids bag.

Take disinfecting wipes, cold medicine, a thermometer and health-insurance documentation in case you get sick, and extra work, reading and entertainment in case you get delayed.

At the airport

Sanitize or wash hands immediately after going through the Transportation Security Administration check-

point, and certainly before you touch your eyes, nose or mouth.

Be wary of the many risks of exposure at the checkpoint. Airline officials have pointed out that TSA isn't cleaning its checkpoints nearly as aggressively as airlines are cleansing airplanes. You hand your ID or boarding pass to the agent wearing gloves. What if the traveler five people in front of you sneezed on his license, transferring virus to the agent's gloves? Think about those X-ray bins and the benches for getting your shoes back on as collection points for sneezes and coughs. TSA checkpoints are public spaces where people are in close quarters and sharing surfaces.

Three TSA screeners working at Mineta San Jose International Airport in California have tested positive for Covid-19, the disease that results from the new coronavirus. Co-workers they came in contact with are quarantined at home for 14 days.

On the airplane

Open the air vent and aim it in front of your face. Air on planes runs through hospital-grade filters that capture 99.9% of contaminants, including viruses. You may freeze, but you want to be breathing that air. It may be the cleanest air you get all day.

Wipe down surfaces like tray tables and arm rests to disinfect. Airlines have stepped up cleaning of airplanes, but much of it comes overnight. That doesn't protect you if the plane you are boarding has just landed.

Wash or sanitize hands after touching public surfaces like bath-

room doorknobs, sink handles and overhead-bin latches.

Consider a window seat. Some research shows passengers in window seats stay put more than people in aisle seats, and so are exposed to fewer people. Also, there's a risk of someone infected walking down the aisle and sneezing or coughing on the person in the aisle seat.

Medical studies show the hot zone on an airplane is two seats around you in any direction. If someone near you is coughing or sneezing, move—there should be plenty of empty seats.

At the hotel and elsewhere

Practice all of the CDC-recommended precautions as frequently as you can.

Wash hands with soap for at least 20 seconds (sing the alphabet song to make sure you wash long enough).

Use hand sanitizer that's at least 60% alcohol. Avoid touching your eyes, nose and mouth with unwashed hands. Avoid close contact with people who are sick.

More questions answered

What if I have tickets but don't want to travel?

There are ways you can recover airline change fees and cancellation penalties. It does get complicated—each airline or travel seller may have its own rules and fees. But here are some general guidelines:

If you bought your ticket before March and planned to travel in March or April, most big airlines will waive cancellation or change fees. Delta, United and American began doing this March 9. In most cases, you'll get a voucher good toward future travel. Pay close attention to when the voucher expires. It may be one year from when you bought the ticket, which by now may not be much time.

If you bought a ticket before March and plan to travel in May or later, most airlines have not yet is-

sued waivers from fees. Sit tight. There will be time to cancel, unless you face other deadlines for cruises or hotel bookings. If the pandemic continues for several months, waivers will be coming. If it subsides, you may well feel safe traveling this summer.

If you buy a ticket now, almost all airlines are selling tickets without change fees or cancellation penalties. (Southwest does all the time, which gives you the most flexibility.) If you change your mind, you likely won't get a refund, just a voucher.

Does travel insurance cover you?

Not for coronavirus cancellations. At this point, the threat is well-known, so not insurable. Besides, most policies exclude pandemic, and the World Health Organization has officially made that classification.

The one insurance product that experts say still offers some coverage is Cancel for Any Reason insurance. You have to buy it within a week or two of your first payment on a trip. It costs more and it typically covers only 60% to 70% of your losses. But it's the only travel insurance for fear.

How can I get a refund on a nonrefundable ticket?

If an airline cancels your flight (and you still have a ticket for it), the airline has to refund what you paid. It's simple: The airline isn't delivering the service you bought.

If an airline changes its schedule and you don't want the new flights, you will be entitled to a refund in most cases. At American, for example, a schedule change of 61 minutes or more gives you the option to get a refund. (Alternatively, you can choose to accept the new flights offered, of course.) At United, rules are changing: United has gone from a two-hour threshold to now saying that the schedule has to be "significantly" different to get a refund.

Mr. McCartney writes The Middle Seat column for The Wall Street Journal. He can be reached at middleseat@wsj.com.

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fewer people touch them.

"If someone with the virus has coughed or sneezed and then touches an inanimate object like a dumbbell or even the pen for a sign-in sheet, there is an increased chance of transmission, but no more than the flu," he says.

If you live in a city with an outbreak, Dr. Poland suggests skipping the studio and getting your endorphin fix at home through an online class or app. Outdoor exercise also is safe, he says, as long as you keep a distance from people. "A triathlon where you are jammed up with others wouldn't be smart," he says.

However, if you live someplace that hasn't experienced an outbreak, he suggests taking the same precautions you would during flu season. He recommends getting a flu vaccine and working out in areas with a minimum of 3 to 5 feet between pieces of equipment or other people.

And don't just rinse your hands. Wash them for at least 20 seconds. "I have never seen a lay person wash their hands properly," he says. "You put your fingertips, not your palms, in your eyes, nose or mouth. No one washes their fingertips."

Gyms and fitness studios across the country have stepped up hygiene messaging and measures to give members peace of mind.

Barry's Bootcamp advised clients to avoid "kissing, hugging and the sharing of cups and water bottles" at the gym. And Equinox says it is disinfecting all clubs with a hospital-grade solution three times a day. It has asked instructors to eliminate skin-to-skin contact such as adjustments in yoga.

Nathan Reyna, a member of Elite by NYSC, an upscale offshoot of New York Sports Club, says he feels that his gym's management is taking the coronavirus threat seriously.

"Not only have they emailed tips on how to combat the virus, but they have amped up deep cleans," he says.

TIPS TO KEEP HEALTHY AND FIT

Gyms and fitness studios are urging members to follow the CDC guidelines for preventing the spread of Covid-19, the disease caused by the coronavirus.

Beyond washing your hands often with soap and water for at least 20 seconds and not touching your eyes, nose and mouth with unwashed hands, here's what fitness companies and health experts are suggesting people do to stay clean while exercising:

- ◆ If you or someone in your household is sick, stay home from the gym.
- ◆ Cover your cough or sneeze with a tissue, then throw the tissue in the trash.
- ◆ Avoid the sauna and steam room. Those with colds often use them to break up congestion.

◆ Use the disinfectant wipes available at the gym to wipe down equipment before and after each use.

◆ For surface cleaning, check with your gym to see if its products say "disinfectant" on the label and include an EPA registration number.

◆ Use hand sanitizers that are at least 60% alcohol.

◆ Bring your own yoga mat to class.

◆ Avoid contact such as hands-on assists, passing over membership cards at check-in or high-fives.

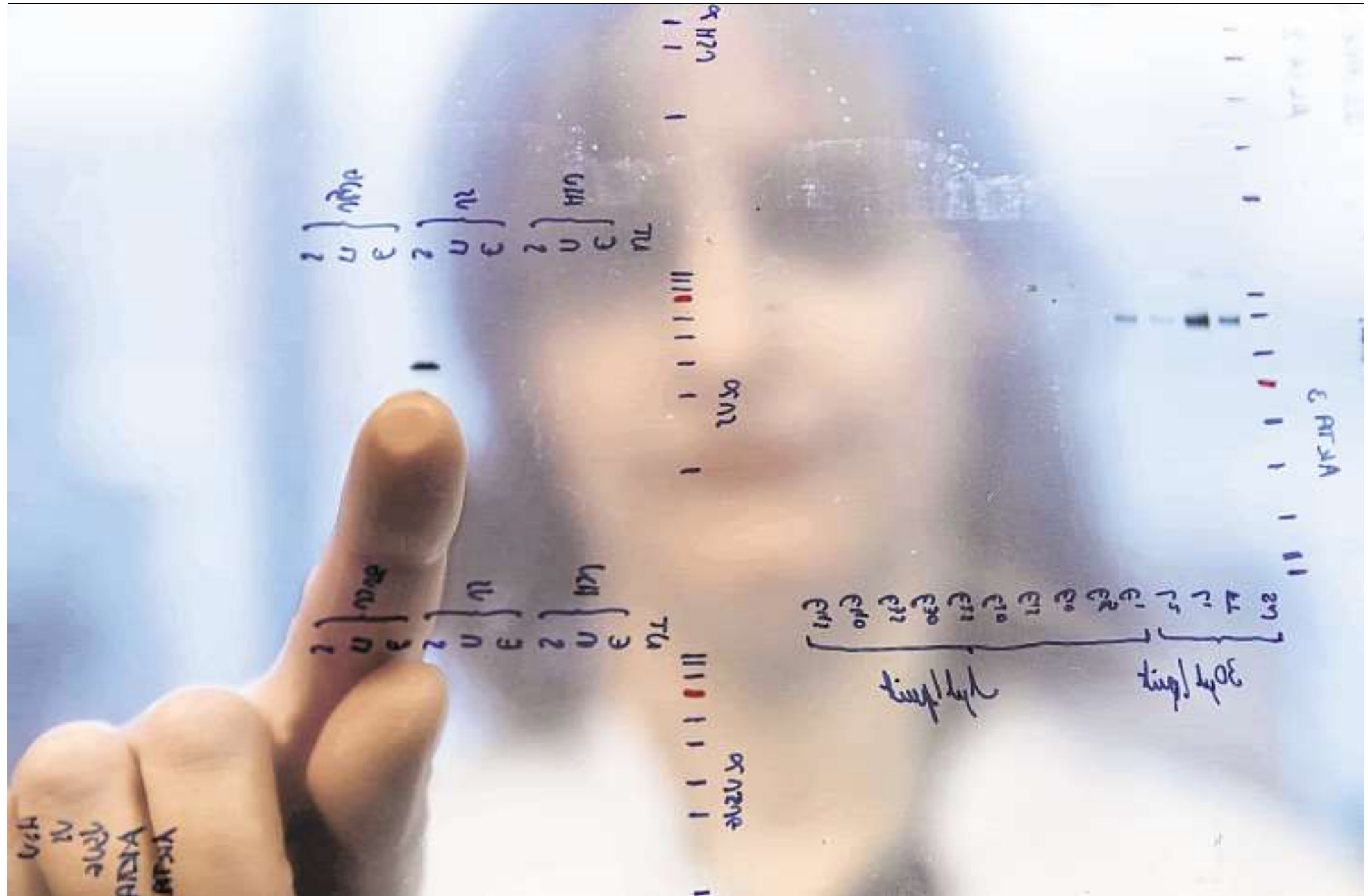
◆ Avoid packed classes where students are shoulder-to-shoulder. Try to maintain 6 feet of distance from other people.

◆ Work out at home using a jump rope or an app or streamable workout.

—Jen Murphy

Ms. Murphy is a writer in Boulder, Colo. Email her at reports@wsj.com.

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



As the Virus Spreads, Drugmakers Hunt for Effective Treatments And Vaccines

By JARED S. HOPKINS

Dozens of drugmakers are scrambling to develop vaccines that could prevent people from contracting the new coronavirus, or therapies to treat people infected with the respiratory disease it causes.

Testing of several potential drugs and vaccines has already started, and more trials are in the works. Additional studies could follow if researchers find that products approved for other uses, or even ones they discarded, show promise in their labs tackling the virus.

“You’re seeing the industry wheel into action,” says Jeremy Levin, chairman of the Biotechnology Innovation Organization trade group and chief executive of Ovid Therapeutics Inc.

The development process will be slow, however. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, has said it would take at least 12 months to 18 months to know if a vaccine is safe and effective. Industry officials agree that the time horizon for any indication of the drugs’ effects is months away. And in drug development, most therapies fail before reaching the market.

Battling the unknown

There aren’t any drugs or vaccines approved for Covid-19, the respiratory disease caused by the new coronavirus. Industry and academic researchers ramped up their discovery efforts in January, after scientists in China provided the virus’s genetic sequence.

At least 35 potential vaccines are under development by companies or academic researchers, according to the World Health Organization. More than 40 life-sciences companies have virus-related projects, Dr. Levin says. There are nearly 400 global clinical trials related to the coronavirus under way, according to the WHO.

The newness of the virus is complicating research efforts. Researchers face the challenge of properly designing trials in a short period for a relatively unknown virus, industry officials and analysts say. That makes it harder to determine what measurements will indicate a patient’s response to a therapy, says Yaron Werber, an analyst at Cowen Inc. Already, finding patients eligible to undergo testing hamstrung one trial in China.

“We’re trying to run large randomized studies in a very quick period in a disease that we barely understand,” says Michael Yee, an analyst at Jefferies LLC.

Inovio Pharmaceuticals Inc. plans to begin testing its experimental vaccine in healthy volunteers next month and publish its human clinical-trial data this fall. Healthy volunteers in the Seattle area have begun enrolling in a trial testing Moderna Inc.’s experimental vaccine.

Emergent BioSolutions Inc. said Wednesday it is trying to develop treatments, one of which would be derived from the blood of coronavirus patients who have recovered. “Everyone recognizes that a vaccine will really not be available for the next year to year and a half, and the quickest path to a product that is going to provide some benefit is some type of therapeutic product,” Chief Executive Robert Kramer said in an interview.

Some of the most advanced programs are exploring whether drugs discovered for other uses might be effective treatments for Covid-19. Among them: an antiviral therapy from Gilead Sciences Inc., called remdesivir, that was developed to treat the Ebola virus but then scrapped after proving less effective than rival drugs during testing.

Researchers revived the drug after the Covid-19 virus was found to belong to a family of coronaviruses. In mice, remdesivir had worked against Middle East respiratory syndrome, another coronavirus.

Researchers in the U.S. and China have started testing remdesivir in people infected with the coronavirus. The company says it will start its own late-stage studies this month. Gilead has given the experimental drug—though it hasn’t been proved to work—on a compassionate basis to several hundred patients with confirmed, severe Covid-19 infections in the U.S., Europe and Japan, a company spokesman says.

Other approaches

Also under study are some approved HIV drugs, like Kaletra from AbbVie Inc. and Prezcobix from Johnson & Johnson, to see whether they could work against new-coronavirus infections. In January, both companies supplied their drugs to Chinese authorities for testing. Media in China have reported that AbbVie’s Kaletra is proving effective, but the company says it can’t confirm the reports without access to data from the trial. A J&J spokesman says the company didn’t have an update on the China research.

Regeneron Pharmaceuticals Inc. and Sanofi SA are taking steps to start studying in patients whether their drug Kevzara, approved to treat rheumatoid arthritis, could treat symptoms of new-coronavirus infections.

Roche Holding AG is exploring conducting U.S. studies of its similar-acting rheumatoid-arthritis drug, Actemra.

Researchers in China have already

begun a study, according to a spokeswoman for Roche’s Genentech subsidiary. Pfizer Inc. and Merck & Co. say they are assessing whether their assets may be potentially worth using toward coronavirus. J&J aims to begin a trial later this year with its experimental vaccine candidate, while Sanofi hopes to potentially enter trials with its own within a year and a half.

Recent history suggests that drugmakers will have a rough road ahead. In epidemics such as severe acute respiratory syndrome, Ebola and Zika, researchers and companies mobilized for vaccines and treatments, although the results were mixed.

For companies spending heavily on Covid-19 drugs and vaccines, one issue that could affect responses to future pandemics is the return on investment, especially if the pandemic has run its course by the time a product has been approved for real-world use.

If Covid-19 ends up being a seasonal or recurring disease, there could be a stronger commercial opportunity for companies, which might be inclined to charge higher prices, Mr. Yee says, though he expects the opportunity to be minimal for now given the public-health emergency.

He says Gilead is likely to employ a “humanitarian approach” with a price to merely recoup its development costs. Gilead said it hasn’t yet set a price for its drug and is focused on responding to the coronavirus outbreak.

Mr. Hopkins is a Wall Street Journal reporter in New York. He can be reached at jared.hopkins@wsj.com.

At least 35 potential vaccines for the virus are under development by companies and academic researchers.



The Internet Can’t Save Us From Loneliness In a Pandemic

I’ve worked remotely for most of my professional life, collaborating exclusively through screens, and I know a few things about how lonely that can be.

All of us sense that the internet is no cure for loneliness, and research supports our intuition. But what are we to do when connecting with people online is our only option? With the arrival of the coronavirus, studying and even relaxing with friends remotely

seems, for millions of people the world over, the only option.

It is beyond debate that these remote collaborations may be less fruitful than in-person meetings; the learning less effective than what we absorb in hands-on environments; and the socializing markedly less satisfying than the alchemy of face-to-face connections. But why these online-only connections don’t quite cut it remains something of a mystery to social scientists.

For anyone who has ever been reassured by a text from a friend, laughed at a colleague’s joke in Slack or had their mind changed by an exchange on social media, it is clear that the richness of a medium isn’t the sole determinant of how it makes us feel.

If the richness (or lack) of a medium can’t explain why the quest for connection on the internet can be so fruitless, perhaps another, older theory does. In 1956, sociologists Donald Horton and Richard Wohl coined the phrase “parasocial interaction.” It characterized the emotional ties millions of people had developed with performers and personalities through the then-new medium of television.

The problem was that all these relationships were one-sided. Parasocializing with our favorite news anchors or sitcom

characters didn’t confer the same benefits as socializing with real people. With the advent of the internet, all relationships, even ones with people who know us, gained the potential to become parasocial.

Social media makes it easy to hang onto and follow along with “friends” with whom we rarely or never speak. With social media, our primate brains generate the illusion that we are participating in our friends’ lives, just as our parents instinctively felt a closeness to the voices in the little box. Communicating through the internet also necessitates the construction of a digital self, which is by nature incomplete and often false.

The internet also creates a mental equivalence between everything and everyone on a given network, one that erases the boundaries between our interpersonal relationships and parasocial ones.

The antidote to the slow poison of parasocialization is, of course, socialization. Live and in the flesh. And unfortunately millions of us are about to find out just how long we can survive without it.

—Christopher Mims

Mr. Mims writes The Wall Street Journal’s Keywords column. He can be reached at christopher.mims@wsj.com.

FROM TOP: ADRIENNE SURPRENANT/BLOOMBERG NEWS; PEP; MONTSEBERRAT

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



Workers Worry Their Sick Time Won't Be Nearly What They Need

By KATHRYN DILL

As the coronavirus spreads, Walmart and many other companies are rolling out special sick-time benefits to workers.

Millions of American workers have no paid sick time, and millions more who do are wondering if they will have enough to cover a severe illness. While some of the country's biggest companies are adjusting their policies because of the coronavirus, there are still many employees who worry that falling ill will leave them in a precarious financial position.

The incubation period for confirmed cases of coronavirus can be up to 14 days, a significant stretch of time to take off from work. Many hourly and blue-collar jobs offer no paid sick leave at all, and even in industries known for high salaries or union regulation not all workers are covered, according to the Bureau of Labor Statistics. That means many workers may feel they have no choice but to come to work even when they are ill.

Robert Samples, who works as a graduate assistant at the University of Connecticut, gets three paid sick

days per semester. He says he was shocked by an email from his human-resources department explaining that people who needed more time off would have to exhaust other accrued leave, like vacation days.

"They offered no assurance that people with confirmed Covid-19 cases would receive paid leave," Mr. Samples says. "If you're an academic, and you think you might lose your vacation benefits, if you've got the sniffling, you might come to work, and that's a dangerous precedent to set."

A university spokeswoman says the school has the flexibility to allow sick leave beyond what union contracts guarantee in a coronavirus case, and that the email was sent to emphasize that anybody who was sick should stay home.

Adjusting policies

In 2019, more than 33 million U.S. workers had no access to sick leave, federal data show. Many of them are food and cleaning staff who are more likely to get infected or be a vector for disease—and don't have the option of working from home.

The consequences of going into work while sick can be huge when infectious diseases are involved. A report by the Institute for Women's Policy Research estimates that employees who went to work while sick with H1N1, also known as the swine flu, caused the infection of as many as seven million co-workers in 2009.

As the coronavirus outbreak intensifies, companies from Walmart and Trader Joe's to Darden Restaurants Inc., which operates roughly 860 Olive Gardens in the U.S., are rolling out special sick-time benefits to their workers, who number in the millions.

Trader Joe's encouraged workers to stay home if they are sick, saying those days wouldn't come out of employees' paid sick-day bank. The move isn't a permanent change to policy, the company says.

Walmart Inc. says it is waiving its attendance policy through the end of April, telling workers who are sick or feel uncomfortable coming to work to stay home using their paid time off. Any employees required to quarantine, either by Walmart or a government agency, will receive up to two weeks of pay. If a Walmart associate tests positive for coronavirus—as a store worker did in Cynthiana, Ky, last week—that person will receive up to two weeks of pay. After that, if the employee can't work, that person may receive pay for up to 26 weeks, the company says.

Darden, the Florida company that runs Olive Garden and LongHorn Steakhouse, says its 180,000 hourly workers would accrue one hour of

paid sick time for every 30 hours worked. It is granting workers a bank of paid leave based on their most recent 26 weeks worked, and the benefit can be used immediately.

Different tiers

Paid sick time breaks down along wage lines. Among workers with salaries that put them in the top 10% of earners, 93% have paid sick days, according to an analysis of federal data by the Economic Policy Institute. For people who are in the bottom 10% of earners, that falls to 30%.

Even among salaried workers, sick policies can vary significantly. Roughly 4% of U.S. private-sector workers with paid sick time have an unlimited number of days to use, federal data show. An additional 32% have days that can be used for any purpose, which can mean making the choice between taking a sick day or going on vacation; 65% are granted a fixed number of sick days a year. And, with many white-collar workers, time off can vary based on an employee's relationship with a manager.

Employers are aware of the pitfalls of their bespoke arrangements with workers, says Rich Fuerstenberg, senior partner at Mercer LLC, a consulting firm. Some have pushed to reduce variations in how paid time-off policies get applied, but coronavirus is forcing them to evaluate situations individually, he says, and build in contingencies for emergencies like this one.

"One of the things that the coronavirus response requires is to be, number one, flexible—which is something that corporate America tends not to be very good at," Mr. Fuerstenberg says.

Workers without paid sick days are faced with a dilemma—go to work sick, or risk losing wages or even their job if they stay home—but some localities have tried to build a safety net.

Eleven states and Washington, D.C., as well as 22 cities and counties, have laws that require employers to give workers paid sick days, usually between five and seven days a year, that accrue over time and can be used to recover from an illness, care for a sick family member or seek preventive medical care, according to the Center for Law and Social Policy.

Workers in Seattle, where Dick's Drive-In Restaurant operates a popular burger chain that employs 310 people, are covered by both city and state sick-time regulations. The company's hourly employees are eligible for paid sick leave, and managers mandate those feeling ill to stay home, says Jasmine Donovan, the company's president.

If employees use up their sick time, they may also be able to tap into vacation time or unemployment benefits if they are forced to quarantine, Ms. Donovan says, adding that it remains unclear.

"We're charting that territory as we speak," she says.

Ms. Dill is a Wall Street Journal reporter in New York. She can be reached at kathryn.dill@wsj.com. Te-Ping Chen, Chip Cutter and Heather Haddon contributed to this article.

33

million U.S. workers had no access to sick leave in 2019

Are You Safer Carrying More Cash—or Less?

AS THE NUMBER OF coronavirus cases in the U.S. continues to rise, anxiety is prompting some people to make emergency preparations for possible shutdowns. Besides stockpiling cleaning products and canned goods, some might wonder if they should have some extra cash on hand.

After all, according to a 2019 study by the Federal Reserve, cash continues to be used extensively for small-value purchases, representing nearly half of all payments under \$10, and 42% of payments less than \$25.

When it comes to cash, though, the virus fears cut both ways: There are those who also worry that the cash itself could be a source of transmission.

Experts say such fears are understandable—but overblown.

Though many transactions are now cashless, the desire to hold more physical cash during a time of crisis may give some people a sense of control over the situation, says Shelle Santana, a professor at Harvard Business School who researches the psychology of money. "Cash provides a certain level of control and certainty that digital and electronic payments don't," she says.

According to financial advisers, online outages at financial companies such as Robinhood, Vanguard and Fidelity in recent weeks are also causing some people to feel disconnected to their savings.

Still, while the coronavirus outbreak is pressuring financial markets and global growth, it isn't currently expected to affect banking operations the way natural disasters can.

For those who seek the reassurance of paper money anyway, health experts say they need not be concerned that the money itself is dangerous.

"I wouldn't expect coronavirus to travel far and wide on money," says Emily Martin, an associate professor of epidemiology at the University of Michigan School of Public Health.

How much to withdraw is a personal choice, financial advisers say. Meir Statman, a professor and behavioral-finance researcher at Santa Clara University in California, says the important thing is not to panic, because that can lead to bad financial decisions.

When one of Jennifer de Thomas's clients expressed concern about having enough cash at home because of coronavirus, the Portland, Ore., financial planner told her she should have cash available, but not because of the virus. Aim to have

enough cash on hand to be self-sufficient for a few days under any circumstance, Ms. de Thomas says.

Consumers also may prefer to pay with digital wallets, such as Apple Pay or Google Pay, to avoid touching bills and coins during the outbreak.

Most smartphones already come with some form of a digital wallet already installed, making the process easier.

Most phones will allow you to enter your credit- or debit-card details manually, or take a photo of your card, and will automatically fill in the required information.

—Veronica Dagher



Ms. Dagher is the host of The Wall Street Journal's Secrets of Wealthy Women podcast. She can be reached at veronica.dagher@wsj.com.

SPECIAL REPORT | NAVIGATING THE CORONAVIRUS



The author's children initially cheered upon learning about Hong Kong's school closures, thinking that meant an extended holiday. It didn't work out that way.

How One Family Is Dealing With Life, Disrupted

In Hong Kong, they face closed schools and facilities, shortages of some necessities—and a small apartment

By SERENA NG

HONG KONG

I never realized how much I enjoyed sending my children off to school and going to work in the mornings until I could no longer do either.

Hong Kong's government closed schools on Feb. 3 as the spread of the coronavirus was accelerating in mainland China, and they have yet to reopen. The semi-autonomous city had fewer than 20 confirmed cases in early February, but they were enough to trigger closures of government offices, tourist hot spots and many public facilities. Dow Jones, the parent company of The Wall Street Journal, followed government advisories and closed its Hong Kong, Shanghai and Beijing offices for a month. Employees were told to work from home and avoid congregating.

It is an experience many in the U.S. are now facing, to one degree or another: sudden school and office closures, event cancellations, shortages of toilet paper and clean-

ing supplies, and fears about being exposed to the contagious respiratory virus. Parents are worrying about how they'll manage child care and remote-work arrangements, and how long all this could last. And we are all learning that we will have to be very adaptable for the foreseeable future.

Finding the space

Living under the new restrictions meant spending a lot of time at home—and making it serve as an office and a school, as well as a living space. It wasn't an ideal fit: a 650-square-foot, two-bedroom flat, a cluttered space shared by two adults, two rambunctious boys and a cat.

The children initially cheered upon learning about the school closures, thinking that meant an extended holiday. We all sighed when the American international school my sons attend said that virtual lessons would be conducted over the course of each school day.

There would be live teaching via Google Hangouts, assignments that students had to complete in set time frames, and online music, art and physical-education classes. Parents were told to download education and reading apps and were given links to folders with slide presentations, video recordings, online meetings and numerous worksheets.

My sons—ages 5 and 7—couldn't take part in live lessons concurrently from our single family computer, so I went out and bought an iPad and a printer. At the shop, a salesman said he had sold more than a dozen printers that same day “to people just like you, who have kids that will be schooling at home.”

Then there was the question of workspace. With no space for study desks in the bedrooms, the children have been using the dining table, couch and coffee tables for virtual school lessons on weekdays.

Initially, I thought I could set up my work laptop in a common area in my apartment complex with tables and chairs after cleaning them with disinfecting wipes—but that venue was also closed

by the building's management

On the first day of virtual school, I felt my stress level rising as my kids called out for me to help them as I tried to answer emails and messages from work. “Leave them to me,” said my husband, a full-time dad, and I left the apartment to find an alternative venue. I texted a co-worker and asked if I could come to her flat to work. She obliged, though I felt like I was contravening office rules about working remotely and worried that I might unknowingly infect her if I caught the virus on the subway en route to her home.

As a stopgap measure, my company rented two small rooms in a hostel and set up screens and workstations for staffers who couldn't work from home. I spent several days there, before the rooms were abruptly closed when Hong Kong's health authorities said there was a confirmed coronavirus case in a nearby building.

I eventually found another location—the studio apartment of an-

other co-worker who was out of the country. It was a quiet respite from my home, but hunching over a small laptop and working in isolation for days on end, with contact with co-workers limited to emails and phone calls, brought its own difficulties. Many, including myself, struggled with concentration and the lack of face-to-face interactions. We organized several online group meetings so that people could share experiences and stay in touch with each other.

stores last month, I bought a half-liter bottle of hand sanitizer from a neighbor who had stocked up on it during a work trip in Finland. My husband went to the supermarket every few days at its 8 a.m. opening time to buy rice, toilet paper and wipes before panic buyers came and cleared the shelves. During this period, my second-grader had to use “scrounge” in a sentence for phonics class. He wrote: “I have to scrounge for T.P.!”

(That turned into a delicate subject. I gave a few rolls of toilet paper to co-workers who were unable to buy them. One gave me Purell wipes that she had bought from Amazon.com in return.)

Dow Jones partially reopened its Hong Kong and China offices at the beginning of March, bringing back a sense of normalcy for staffers. Employees have to use a sign-up sheet to reserve spots, go through daily temperature checks at the office reception, and wash or sanitize their hands upon arrival.

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I also felt guilty that my spouse was shouldering the burden of getting the children through their schoolwork, so I stayed in some mornings to help. But trying to get a 5-year-old to sit in front of a screen and watch his teacher talk for more than 10 minutes is a challenge in itself. One day, I let him paint a picture while he listened passively to a 45-minute online music lesson (we turned off the iPad camera so that the teacher couldn't see him).

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Sticking to the familiar

With libraries, gyms, museums, theme parks and most sports facilities closed, in our leisure time we have been going hiking, hanging out at the beach and cycling in the sun. We still eat at our favorite restaurants on weekends. I carry hand sanitizer and wipes everywhere, but have accepted that I can't keep all our hands clean all the time. (My children have also refused to wear masks, complaining they are uncomfortable.)

We've had to make other adjustments. When food and cleaning supplies were in short supply in

The earliest date Hong Kong schools will reopen is April 20. The city likely has to go through at least 14 days without a new coronavirus infection before the government will let students and teachers congregate again. That has yet to happen; Hong Kong this week reported more than a dozen new infections, raising its total cases to around 130. Friends who lived in Hong Kong during the 2003 SARS epidemic predict that schools won't reopen until the next academic year begins in August. It is a prospect I dread, but we will probably go on doing what we're doing.

As our new normal has set in, I've learned to appreciate the small freedoms we still have and how resilient my children have been. I previously had only a vague idea about what they were learning in school, and now I can see every detail of every lesson. Last week, the boys wrote poems, came up with alliterative sentences, sketched animals, and submitted math worksheets and recordings of themselves reading to their teachers.

A few days ago, my 7-year-old figured out how to email me at work during his virtual school day. “hi mom don't forget to send things!” he wrote in a string of emails, to which I replied with emojis and asked him to focus on his lessons. At 3 p.m., the email chain concluded with his last message: “END OF SCHOOL!!!!!!!!!! YAY!!!!”

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The dining table, couch and coffee table are virtual schoolrooms.