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## Comparing the Polio and Coronavirus Epidemics

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Daniel J. Wilson, PhD

In the early 1950s the most feared epidemic disease was polio, which every year paralyzed thousands of children and adults. In the midst of the coronavirus epidemic, it is useful to look back and compare the two epidemics.

Both epidemics are caused by viruses, but from different families. The novel coronavirus that caused the current pandemic—SARS-CoV-2—is a respiratory virus while poliovirus is an intestinal virus. The coronavirus damages the lungs. Poliovirus begins as an intestinal virus that in a small percentage of cases migrates into the spinal cord where it destroys motor nerves, causing paralysis. Scientists still don't know why this migration occasionally occurs.

According to the CDC, coronavirus is spread through respiratory droplets produced when an infected person coughs or sneezes. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. Spread is more likely when people are in close contact with one another (within about 6 feet). The poliovirus is shed

in the stools of infected individuals and acquired through drinking water or ingesting food contaminated by the stools. Polio is most frequently found in situations of poor sanitation. Unlike coronavirus, you can't acquire polio by simply being next to an infected person—you need to drink water or eat food contaminated by their stools.

SARS-CoV-2 is a novel virus, meaning it has not previously been identified. It appears to have originated in bats and jumped to humans someplace in China. Poliovirus is exclusively a human disease and has infected humans for thousands of years going back at least to the ancient Egyptians.

The victims of the two viruses are quite different. Paralytic polio affected primarily children and adolescents, although adults such as Franklin Roosevelt also

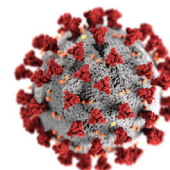
acquired it. Polio's original name, after all, was infantile paralysis. Coronavirus, like polio, can affect all ages, but it appears to be most serious and fatal in older adults and those with underlying medical conditions. Paralytic polio could be fatal if it affected the breathing muscles, but this was a small percentage of cases. More typically it left its victims with paralyzed legs and arms.

In both diseases a significant number of cases are inapparent, where the infected individual exhibits none of the typical symptoms but is capable of spreading the disease. Though we don't have a clear picture, the CDC has estimated that perhaps 25% of coronavirus infections are inapparent. In polio, over 90% of cases were inapparent and only 2–3% of infections resulted in permanent

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# Coronavirus (COVID-19) and Polio Survivors

Everyone seems to be talking about, worrying about and asking questions about coronavirus, and that includes polio survivors. As we have seen, this is a rapidly evolving situation and what we know today may change next week or next month.



Some facts that are not likely to change are:

- Polio and the late effects of polio *do not*, in themselves, cause immune compromise. Therefore, polio survivors are *no more* likely to contract a coronavirus infection or develop serious illness from it than people who never had polio!
- Most polio survivors in the United States and Canada are over 60 years old which places us in the “higher risk” category with a greater likelihood of developing severe disease after being infected with the virus than younger people.
- Polio survivors who had breathing muscle involvement with their original illness and/or now have respiratory problems of any kind are at “high risk” when they become ill with *any* respiratory infection, including coronaviruses.
- Just as it is for people who never had polio, if a polio survivor has diabetes, heart disease, severe kidney disease, or are immunocompromised due to a medical condition or certain medications, then they are at high risk of developing complications if they contract COVID-19.

**What you can do:** Follow CDC guidelines about infection control—washing hands frequently, disinfecting frequently touched surfaces, covering coughs and sneezes, and staying home and avoiding non-essential trips. If you must go out, the CDC recommends wearing a mask and maintaining at least six feet between yourself and others. Those who use wheelchairs can find additional advice at <https://mednet-communities.net/?zphgvoby.o>. If you have people come into your home to provide services, it's important that they, too, follow the recommended guidelines, including wearing a mask.

If it can be safely done, you should try to maintain your usual activity and/or exercise levels. We realize that your normal routine has probably been interrupted by the pandemic—pool and gyms have closed; some may not feel safe walking in more densely occupied neighborhoods. Yoga for Post-Polio Patients, available for viewing on Polio Place at [www.polioplace.org/resources/yoga-post-polio-patients](http://www.polioplace.org/resources/yoga-post-polio-patients), is one example of a moderate exercise program that can be safely done in one's own home. There are other examples on [www.polioplace.org](http://www.polioplace.org) in the Living With Polio section under the category Exercise.

In the event you do develop cough or fever (temperature over 100.4°F), especially if you have had known contact with someone who has coronavirus, call your doctor for advice about what to do next. If you have increased trouble breathing, you probably need to be seen by a doctor at a hospital but have someone call ahead so that the emergency room is prepared for your arrival. Likewise, if an ambulance is called to transport you please let them know in advance that you may have coronavirus so they can take appropriate precautions.

For the latest information about the coronavirus, check the CDC's website at [www.coronavirus.gov](http://www.coronavirus.gov).

If you have any specific health questions about yourself, contact your physician. ■

## POST-POLIO HEALTH

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*Post-Polio Health International's mission is to collect, preserve and make available research and knowledge to promote the well-being and independence of polio survivors, home ventilator users, their caregivers and families, and to support the health professionals who treat them.*

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Send us your second address and dates you will be there  
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paralysis. In both epidemics, inapparent cases were a major source of new infections. When I had polio in 1955 at age five, I was the only one in the neighborhood with a diagnosed case of polio. I probably acquired the virus from someone with an inapparent case.

From 1900 to 1960 there were polio epidemics almost every summer somewhere in the United States, but they were local or regional, not national in scope. For example, if Philadelphia had a polio summer, Pittsburgh likely escaped. Although some states have been hit harder with the coronavirus, it is now present in all 50 states. Any economic impact of a polio epidemic was limited to the locality or regions where it occurred, and life could proceed normally in the rest of the country.

In addition, because polio primarily struck children, the wage earners in the house were generally spared and continued to work. Other than theaters and swimming pools, businesses were rarely closed in polio epidemics, which generally lasted only a few months at most. Many ended with the advent of colder weather. Thus, the economic impact of the polio epidemics was much less than coronavirus.

Just as hospitals have struggled to care for all those stricken with coronavirus, hospitals in the polio years could easily be overwhelmed in a major epidemic. Isolation hospitals were established, and parents were prohibited from visiting their sick children. The widely feared iron lungs were the first effective ventilators and saved many lives, but doctors sometimes had to make difficult decisions about which patients to put in the limited number of tank respirators.

We don't yet know what the long-range consequences of coronavirus will be. Will its victims suffer lingering health issues as a result of having been sick? Although most of those infected with poliovirus escaped long term consequences, that was not true for those who were paralyzed by the disease. The paralysis



Local residents line up in front of a grocery store in Columbus, Georgia, in 1961 during a polio immunization campaign.

Courtesy of CDC/Charles N. Farmer

was permanent in many cases, though rehabilitation could restore some function to affected muscles. And assistive devices such as braces, crutches and wheelchairs allowed others to function successfully, to get an education, find a job, marry and have children.

What finally ended the polio epidemics—and what will likely end this new epidemic—was the development of a vaccine. Two polio vaccines were developed: the killed virus Salk vaccine in 1955 and the live virus Sabin vaccine in the early 1960s. Both vaccines were developed with funding provided by the March of Dimes, a private philanthropy started by President Roosevelt.

While scientists rush to develop a coronavirus vaccine, the polio vaccine provides a caution. It took years for both Salk and Sabin to develop their vaccines. The successful test of the Salk vaccine in 1954–55 was cause for national celebration. However, a few weeks after its approval in 1955, a bad batch of the new Salk vaccine produced by Cutter Laboratories caused 200 cases of paralytic polio and ten deaths.

The Cutter Incident derailed the plans to quickly vaccinate the nation, though vaccination did safely resume a few weeks later. While we hope for the quick development of a coronavirus vaccine, care needs to be taken to avoid a repeat of the Cutter Incident.

Very different epidemics in different eras. I am confident, however, that just as medical research ended the long terrifying decades of the polio epidemics, scientific research will much more quickly develop effective treatments and a vaccine for coronavirus. ■



# Finding Calm in the Pandemic Storm

Reji Mathew, PhD, LCSW

**F**inding calm in the pandemic storm of coronavirus is the challenge of the moment across the globe. In my journey as a clinical social work psychotherapist, I have had the privilege of being a part of mental health teams serving the public for broad health crises, such as the HIV/AIDS epidemic, 9/11, Hurricane Sandy and now the COVID-19 pandemic.

National emergencies shatter our cherished sense of normalcy and safety and thrust us all into crisis responses, both individually and collectively. As I think about what has helped on the front lines over the years, for both patients and practitioners, a few things come to mind:

## Make Inner Room for Your Emotions

Validate your feelings. When the unexpected shows up in our lives, we will have reactions. Our feelings are among the most innate parts of us; they are automatic. Expect to have a range of feelings about what is happening, and that many more may cycle through you over the course of the pandemic.

*The Guest House* by Rumi is a poem for this moment, with its idea of feelings as visitors—they will come and go—and that what can bring even the slightest bit of ease during a difficult time is the fundamental recognition of what you are feeling without judgment.

Make note of your vulnerabilities and plan for them. The challenges of coping with a prolonged crisis can be a strain on anyone. Are you someone who thrives on being outdoors and isolation would be particularly stressful for you? Do news updates elevate your anxiety to the point of not being able to focus on things that you have under your control? Be aware of these types of vulnerabilities and how best to work with them.

Build in safeguards to manage your emotions. Are you exercising? Are you getting enough sleep? Are you connecting with people who can provide support? All of these can be helpful. Try to reset each night: breathe, stretch, journal, find a mode of expression that allows you to

release the stress of the day. Releasing emotional tension each day can reset your central nervous system, activate the relaxation response and cool your mind-body and spirit.

## Notice the Signs of Safety Every Day

When a crisis happens, it is normal for our minds to go into the threat response—flight, fight or freeze—and stay there. What can help in cooling down our genetically wired internal alarm clock is to practice noticing the signs of safety every day. Examples:

- Take stock of what is working as it should. Notice things such as safe housing, our working utilities or internet access. Public health initiatives are put in place to protect and keep us safe.
- Notice the volunteerism efforts underway. For instance, the governor's office in New York recently asked for mental health practitioners, medical students and retired doctors to provide volunteer aid to a beleaguered health care system. Many people came forward to help.
- Look for community initiatives that reflect your values, and think about contributing. Historical moments of great struggle can also be moments of incredible innovation. Participating in a local community effort that aims to counter the loss of the familiar can be a grounding resource to manage prolonged stress.

## Anchor Your Day to Anchor Your Mind

Structure your day to anchor your mind to all the things that are meaningful to you. Think of it like a ship sailing in to dock—an anchor is planted to secure the ship in place and keep it from floating away.

The human brain does better when you give it something to look forward to, to count on, to be absorbed in; it likes the outside-in approach. Spontaneity has its place, but creating a healthy structure to your day can both focus your mind and give you enough room for the intervals of rest or play you may desire.

Reji Mathew, PhD, LCSW, is a freelance writer and a member of the American Society of Journalists & Authors. She is also a clinical social work psychotherapist, a clinical instructor at NASW-NYC, NYU School of Social Work, and an expressive arts advocate.

This article first appeared 4-10-20 on Next Avenue ([www.nextavenue.org](http://www.nextavenue.org)).

## Remember: Social Distancing Is Not Emotional Distancing

Public health officials have urgently asserted that social distancing is the most vital intervention we can all do to stop the spread of the coronavirus. Social distancing is a sacrifice for all of us, but it is important to remember that social distancing does not mean *emotional* distancing.

With all the criticism of social media in recent years, it is striking how the digital age is saving the day in this pandemic. We have incredible access to each other, unimaginable in decades past. In the last weeks, I have learned about countless ways communities have stayed connected: virtual babysitting, virtual online support groups, theme-centered advocacy meetings, Yo-Yo Ma's "Songs of Comfort" project and so on.

Try to simulate digitally the type of social engagement that has helped you to be at your best. Or, if you are someone who was lacking in social support, start small in exploring the right platforms for you, such as Facebook, Twitter, LinkedIn, Instagram and video-chat apps, like FaceTime and Zoom. As you do this, be aware of scams or misinformation; consult with trusted friends and family who have experience.

## Acknowledge Your Gratitude

During a crisis, fear can take over, and our perspective narrows. Emergencies do spur painful losses, whether emotional, spiritual, concrete or existential. But ask yourself: What part of my world is still intact?

Think about what makes you feel grateful these days. This mindful gratitude can offer a "landscape perspective," noting what you do have and savoring it through self-validating acknowledgments: "This is what I do have today; this is what I can count on; this is who is here for me, right here, right now."

Mindful gratitude is not superficial optimism; it is about keeping the broadest landscape view of a particular

moment, which can include the inner and outer resources you may have, along with the adversity.

In this past month, while noting all of the anxiety surrounding me, I wrote to my doctor to thank her for caring for so many vulnerable patients in the community. I also called my local grocer and thanked them for the immense effort that went into making sure the store is stocked for customers.

Being mindfully grateful, in real-time, of all the people working together under taxing circumstances is one way to gain that landscape perspective.

## Dialectically Calm: It's an "And World"

In times of urgency, it is entirely understandable that we would feel like there is no reprieve from being in a constant state of emotional distress. Learning the skill of dialectical calm is an invaluable tool; this is the idea that we live in an "and world," that often we feel many ways about a given moment.

Neuroscience teaches us that a calm immune system is better than a stressed immune system. When we can activate calm, we have better access to our ability to problem-solve, be creative and make better decisions. For example, you can be both calm and anxious or overwhelmed and hopeful or afraid and calm at the same time. I think of firefighters who go in to fight a fire; they may be scared, but they have trained very hard on how to stay calm.

The next time you notice anxiety, take a deep breath and activate calm. Or when the feeling of being overwhelmed floods you, try to acknowledge the steps you have taken to gain control over your day and remember that anxiety and calm can coexist.

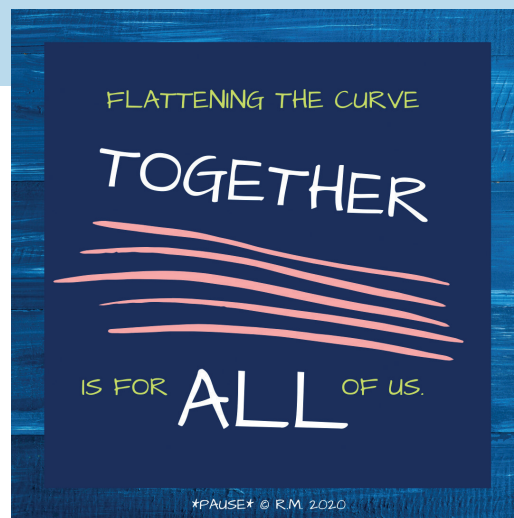
## It takes a village to care for each other.

There is no us versus them in the COVID-19 pandemic, and it will take the massive whole working interconnectedly to get through this challenge.

When you wash your hands, commit to social distancing, take care of your health—you are doing it for everyone in your circle and beyond.

A year from now, how will we want to look back at this moment in our history? How did we problem-solve, innovate, work together? How did we evolve as a nation in our response to public health needs?

Flattening the curve together is for all of us. ■





# Bay Cliff's 2020 Post-Polio Wellness Retreat

Bay Cliff Health Camp in Big Bay, Michigan will hold its annual Post-Polio Wellness Retreat on September 21-26, 2020.

The program will include customized mind, body and spirit wellness activities led by post-polio specialists and set on the shores of Lake Superior. Activities will include swimming, medical updates, handicrafts, massage, physical therapy options, campfire sing-alongs, yoga, fishing sauna, accessible hikes, discussions on healthy aging strategies and more.

Registration is open though August 31, 2020.  
Companions are welcome to register and participate.  
To learn more and sign up, go to  
<https://baycliff.org/programs/post-polio-wellness/retreat>

\*Due to COVID-19 public health precautions, Bay Cliff or individual retreat registrants may need to cancel participation. In this event, reservations will be fully refunded. During the upcoming months, updates will be posted publicly on the above website and via email to those registered.





# PHI'S NEW WEBSITE IS ONLINE

PHI's completely rebuilt website is now active. To access it, you may go to the same web address you've always gone to, [www.post-polio.org](http://www.post-polio.org). We hope it will provide a more user-friendly experience and aid your search for post-polio information and resources. Here are just a couple of the great new features.

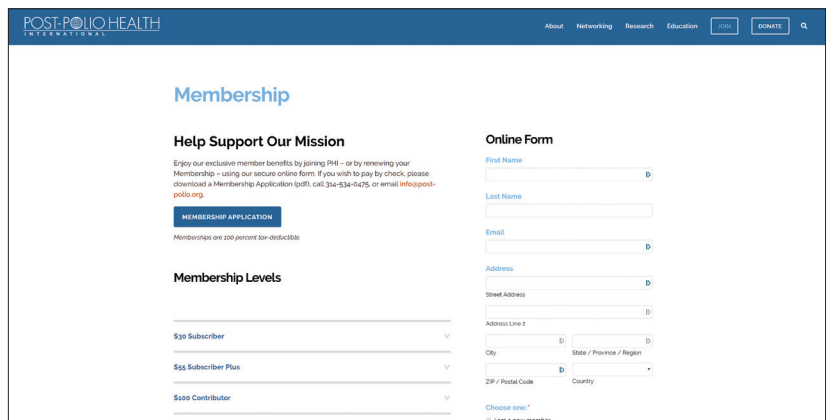
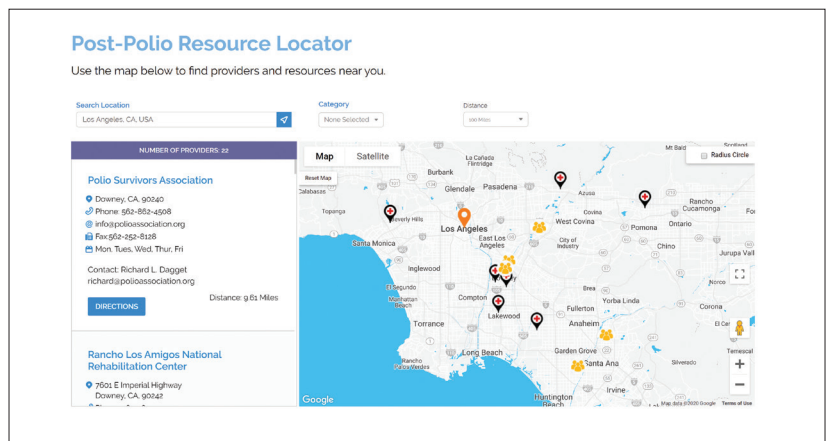
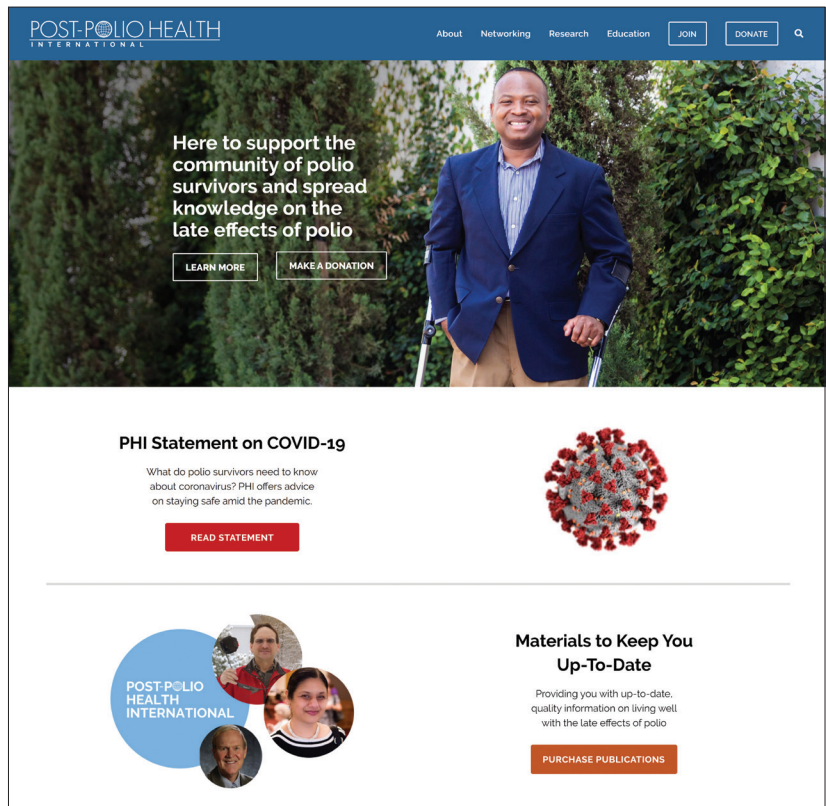
## The Post-Polio Directory

The printable PDF will remain available, but we believe the new interactive version will make it easier to quickly find health professionals, support groups and financial resources in your area. The new online tool actually combines the *Post-Polio Directory* and PHI's newest resource, *A Polio Survivor's Guide: Funding Resources for Medical & Adaptive Equipment*.

When you navigate to the page, enter your city in the location search box (or simply let your device automatically detect your location) and the map will display a list of nearby results within a customizable range. Map markers will differentiate between health professionals, support groups and funding resources. Or if you prefer, click directly on the map to find resources in other parts of the country or around the globe.

## Membership and Donations

Rather than sending you to a separate "store," the new site features a one-step process for renewing your membership or making a donation. If you are renewing your membership, you can hit the "Join" button in the menu. You'll be taken to a checkout page with information about the various PHI Membership levels. All you have to do is enter your mailing address, select your desired membership level, enter your payment information, and hit "Submit." Prefer sending in a check? A printable membership form is available, as well. ■



**PHI:** *Are there polio-related issues during the shelter-in-place orders? What can you say about polio in the time of COVID-19?*

**Response from Rhoda Olkin, PhD:**

Staying at home? What could be easier? Then I had to take out the garbage (three cans—landfill, recycling, organic materials), and empty the dishwasher, and do the laundry—today, tomorrow, and the next day and the day after that. Without my usual assistance, or even the ability to ask someone to come over to help. I found myself on my own, trying to figure out how to get groceries, cook, maintain the household, and keep sanity.

***... would they decide my life was less worthwhile than that of someone without a disability?***

After a week at home I divided chores into two categories: things I hate to do, and things that hurt to do. Almost everything in the kitchen is in the first category, and I do those. But laundry, garbage, changing sheets, vacuuming, these I try not to do unless absolutely necessary.

There are trade-offs: would I rather wake up on dirty sheets with cat hair in my mouth, or bend to put sheets into and out of the dryer and then be in pain? Is yoghurt and blueberries a well-rounded dinner? If I eat vegetables one day does that count towards the next day? Is that spill on the carpet going to be any easier to get out if I sit down and do it now, or can it wait?

I have anxieties specific to being a disabled person. The first is whether, as a polio survivor who spent a brief period in an iron lung as an infant, I was more vulnerable to complications from COVID-19. According to my doctor the answer was maybe, because polio is both a physical and a neurological disorder, but not a lot more at risk, not like asthma or diabetes or heart conditions.

Second, if I showed up at an emergency room with breathing problems and they were rationing ventilators would they decide my life was less worthwhile than that of someone without a disability? (Is this just me? Have you had that thought?)

These are anxious times. Some elements may re-trigger us to previous traumas. But I know this. I will get through this, you will get through this, and we are survivors.

**Response from Stephanie T. Machell, PsyD:**

In the realm of memory, like calls to like. Because we remember by making connections and associations between similar events, the current COVID-19 pandemic may stimulate memories of your polio experiences. Along with the new fears we are all experiencing to some degree and fears specifically related to your own current risk status for developing severe disease, old fears may be revived.

Living through a global pandemic is a potentially traumatic experience. The



**Dr. Rhoda Olkin** is a Distinguished Professor of Clinical Psychology at the California School of Professional Psychology in San Francisco, as well as the Executive Director of the Institute on Disability and Health Psychology. She is a polio survivor and single mother of two grown children.



stresses involved can cause high levels of anxiety, intrusive thoughts or memories, irritability, difficulty concentrating, vivid or unusual dreams, disturbed sleep, or feelings of unreality or disconnection from themselves or others. For most people, these symptoms will be transient and manageable.

But for those who have or have had Post-Traumatic Stress Disorder (PTSD), including for those whose PTSD is related to their polio experiences, this is a challenging time. Symptoms may return or worsen. New memories may surface, or old ones may take on a new life. Fears from the past of being in an iron lung may layer on current fears of being put on a ventilator—or being deprived of one due to disability.

If any of this is happening to you, know that regardless of social distancing you're not alone. Don't suffer in silence. Silence reinforces trauma. For mild transient symptoms, talking to supportive friends and family via phone or your preferred videochat platform may be enough.

Research has shown that journaling about stressful experiences helps. Practicing good self-care, creating and following routines, and limiting exposure to news and social media are all helpful.

The above are helpful for those with more severe symptoms as well. But if your symptoms feel overwhelming or unmanageable, you may need more. If you're not currently in therapy, you may want to return to treatment or seek out a trauma-trained therapist. Most insurers, including Medicare, have relaxed rules about telehealth. It might feel awkward to start therapy this way, but the extra support will help.

**Dr. Stephanie T. Machell** is a psychologist in independent practice in the Greater Boston (MA) area. She specializes in working with those affected by polio and other physical disabilities. Her father was a polio survivor.

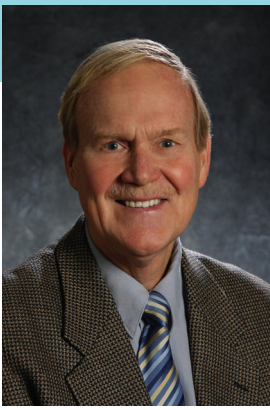
As I noted, many polio survivors are remembering their experiences. For example, for one of my clients social distancing triggered memories of the loneliness of recovering from polio and later surgeries. While this is easily recognizable as memory, often memories of early life experiences can arise as emotions, sensations or images detached from context. This can also happen when a memory is especially intense or threatening.

***Practicing good self-care, creating and following routines, and limiting exposure to news and social media are all helpful.***

As uncomfortable as it can be, remembering can be healing. Keeping a memory out of awareness drains psychological energy, something no polio survivor can afford. If what you are remembering feels too overwhelming and painful to cope with on your own, remember that help is available. And there is nothing weak about asking for it, especially right now.

Be kind to yourselves and stay safe. ■





Frederick M. Maynard, MD

## Ask Dr. Maynard

Send your questions for Dr. Maynard to [info@post-polio.org](mailto:info@post-polio.org).

See other questions at [www.post-polio.org/edu/askdrmay.html](http://www.post-polio.org/edu/askdrmay.html).

**Question:** *I am a polio survivor, age 76, in good health, active, and still working as an RN (not in hospital). I suspect I might have had COVID-19 in late January, with mild symptoms lasting only a few days—no fever but felt weak, fatigued, had a mild sore throat and a dry cough at the end. I was surprised since I rarely get a cold or flu. What I most remember is that my joints and muscles were very sore and achy which made me think this is what arthritis would feel like.*

*I didn't think much about it then, but I still have pain and some joint stiffness in specific areas: my right shoulder and surrounding muscles, my left hip, adductor muscle, and maybe inguinal ligament, all worse at night and early morning. I use infrared heating which helps some and exercise regularly, but it's still there. Some days are better than others. I avoid ibuprofen but two Tylenol at bedtime lets me sleep.*

*Could this be associated with post-polio in the muscles that might have been affected initially but were without symptoms or loss of function? When Dr. Stanley Yarnell did an EMG in 2001, he found areas in my upper arms and my left leg that were affected. My right leg was the primary location of weakness and loss of function, and all the other areas were asymptomatic and have remained so.*

*Given the ongoing stress and pain I'm having (I'm unable to do my yoga stretches due to tightness in these areas), it occurred to me that perhaps these areas had been affected by the virus. There's no way of knowing at this time if I had it or not because of lack of PCR or antibody testing. But I'd like to hear your thoughts.*

**Dr. Maynard:** Thank you for your timely inquiry. At the present PHI has heard very few reports of polio survivors developing COVID-19. We remain concerned because many polio survivors are in a high-risk group for this pandemic viral infection because of older age and co-morbidities (e.g., ventilatory impairments, hypertension, obesity, etc.) even though a history of having polio does not directly make them more vulnerable. Please see "Coronavirus (COVID-19) and Polio Survivors" on page 2.

Regarding your question of continuing new muscle pains after your likely viral infection in January, possibly due to mild COVID-19, this is a possibility. Severe viral infections with marked flu-like aching and fatigue can be followed by persistent muscle aching and fatigue that is similar to Chronic Fatigue Syndrome and Fibromyalgia. The similarities between PPS and these other post-viral conditions was first reported as early as 1987 at the Second Research Symposium on the Late Effects of Polio held at Georgia Warm Springs.<sup>1</sup>

Given that medical reports of people with symptomatic COVID-19 almost always report severe muscle aching associated with fever and dry cough, I would think it likely that some survivors will have persistent muscle aching afterwards. A polio survivor who develops COVID-19 may be at higher risk for this persistent symptom. Recommended treatment of this symptom would be the same as for those with Fibromyalgia: exercise, gentle stretching and localized techniques of heat, massage and applied counterirritant



creams. You should be expected to improve slowly over time. I would also refer you to a discussion of this topic in a book chapter that can be found on Polio Place ([www.polioplace.org/resources/postpolio-syndrome](http://www.polioplace.org/resources/postpolio-syndrome)).<sup>2</sup> ■

1. J. Monroe, R. Choy, M. Loveday, The Post Viral Syndrome and Polio Study: Long-term Effects of Viral Disease. In Halstead LS and Weichers DO (eds). *Research and Clinical Aspects of the Late Effects of Polio*, White Plains NY, MOD Birth Defects Foundation, 1987, pp 183-187.

2. FM Maynard and AC Gawne, Joint and Muscle Pain. In Silver JS and Gawne AC, *Postpolio Syndrome*, Hanley and Belfus, pp 61 to 75.

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Thank you for recognizing your friends and loved ones with contributions to the activities of PHI and IVUN and for your generous Membership contributions.

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