



Bruno “Bytes”

4th Quarter, 2019

From Dr. Richard L. Bruno, HD, PhD
Bits and Tidbits from the Post-Polio Coffee House

On the topic of CBD Oil and Pain Management

Question: A friend recommended cannabis oil without THC rather than the Tylenol I take which only deadens the pain for a short period of time. What are your thoughts on this?

Answer: The research is clear that taking CBD oil without THC does not have an effect. So we're back to the basic polio survivor question: have you identified triggers for the pain you experience and have you eliminated those triggers?

On the topic of a Medication for Cold Polio Feet

Question: I did not go out today. My legs and thighs are freezing cold and nothing seems to work. My physician recommended that I increase my medication for Raynaud's (the calcium channel blocker nifedipine) but nothing is working. I'm so cold. Is there anything I can do?

Answer: Ask your doctor about carefully changing to amlodipine, which is another calcium channel blocker. Amlodipine opens arterioles (the smallest arteries feeding the skin), can increase "flow through" from arteries to veins, decrease venous pooling and thereby decrease the loss of heat from warm blood pooling in the skin blood that causes chilled, purple polio feet.

Remember. Dress right after a bath/shower and use socks and leggings made from polypropylene, a breathable plastic fiber to keep the warmth in.

Search the [ENCYCLOPEDIA of POLIO & PPS](https://www.papolionetwork.org/encyclopedia.html) to find many articles under the topic of "Temperature" in the Articles section and 12 articles referenced in the Index at <https://www.papolionetwork.org/encyclopedia.html>

On the topic of EMG's identifying where polio affected the body

Question: I got the electrodiagnostic results of my "good" right hand. The doctor said there was evidence of prior, "old" anterior horn cell disease. Does this mean that Polio affected my right arm as well?

Answer: Statistically, the poliovirus affected all of the motor neurons that activate your muscles, even the muscles that seemingly were unaffected. For a limb to be weakened by the poliovirus, let alone paralyzed, it had to lose more than 60% of its motor neurons.

EMG's can detect "old" polio damage and the death of motor neurons, which is what the physician meant by "evidence of prior, old anterior horn cell disease."

But a negative/normal EMG doesn't mean you didn't have polio. Motor neurons could have been damaged, causing paralysis, and then recovered, allowing recovery of muscle strength and leaving

no EMG evidence of damaged motor neurons. The rapid recovery of damaged motor neurons created the “polio miracles,” where a child was admitted to a hospital with paralysis and walked out a month later. See “‘Normal’ EMG’s in Polio Survivors with a History of Paralytic Polio”

https://www.papolionetwork.org/uploads/9/9/7/0/99704804/how_to_interpret_emgs_of_polio_survivors.pdf

Also, a negative EMG doesn’t mean you don’t have PPS. Of the many published studies of polio survivors not one found that a clinical EMG could identify newly weakened muscles versus muscles whose strength hadn’t changed in decades.

BOTTOM LINE: AN EMG CANNOT DIAGNOSE PPS!

Yes, EMG and nerve conduction studies can be helpful to rule out diagnoses other than PPS, e.g., carpal tunnel syndrome, ALS, (Amyotrophic lateral sclerosis) CIDP (Chronic Inflammatory Demyelinating Polyneuropathy) and even pinched nerves. But if you’re going to have an EMG see a rehab doctor, not a neurologist, since physical medicine doc’s EMG training has been found to be far superior to that of neurologists. [See](#) “Why Rehabilitative Physicians are best able to do EMG’s.”

https://www.papolionetwork.org/uploads/9/9/7/0/99704804/bruno_bytes_january_2019_.pdf

On the topic of PPS, Kidney Disease and Liver Enzymes

Question: My doctor has diagnosed me with chronic kidney disease from a blood test without a urinalysis. Can I be misdiagnosed because of the possible effects PPS can have on the kidneys? I am not sure what to do or believe. Can PPS have caused these findings in my blood work? I have looked at “kidney friendly” diets and they recommend cutting down on protein and other stuff that could help polio survivors with fatigue and bone issues.

Answer: Polio and PPS have no effect on kidney function. Kidney disease is diagnosed by blood tests for BUN, creatinine (NOT creatine), GFR plus homocysteine. A second opinion with a kidney specialist is in order. Talking to a dietician/nutritionist about diets that are “kidney friendly” is a good idea.

Additional Question: Is creatinine a liver enzyme? The last time I went to the doctor he said my liver enzymes were high and didn’t understand why. Would this be caused from PPS?

Answer: Neither kidney function nor elevated liver enzymes are related to polio or PPS. And creatinine is not a liver enzyme but a muscle breakdown product removed by the kidneys. Abnormally high levels of creatinine warn of possible malfunction or failure of the kidneys. It is for this reason that standard blood tests routinely check the amount of creatinine in the blood.

On the topic of Polio Survivors having Lower Immunity

Question: A friend of mine insists that post-polio patients have a lowered immunity. I have never heard of this.

Answer: Polio does not cause lowered immunity. This is only an anecdotal finding but I have always been surprised that Post-Polio Institute patients didn’t catch bugs floating around while non-polio survivors got sick. This doesn’t mean that you shouldn’t discuss with your local doc getting the flu and pneumonia vaccines.

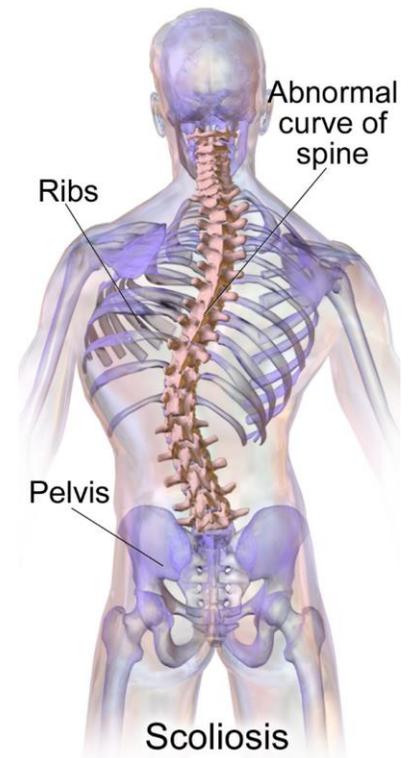
On the topic of Scoliosis

Question: I read on the internet that my scoliosis may be due to polio that I had. They said that the spine bone structure grew faster than the spinal cord. So my spinal cord is shorter than therefore causing the scoliosis. Can this be true?

Answer: Nope. Polio does not cause the spinal cord to be shorter than the spinal vertebrae (the "spine bone structure") and is not the cause of scoliosis. Scoliosis is caused by back muscles that polio did not weaken or paralyze, pulling the spinal vertebrae in their direction because muscles on the other side of the spine were weakened or paralyzed by polio and therefore were unable to oppose the stronger muscles.

Polio survivors can get a "C" curve in their lower back if right sided muscles are weaker than the left. An "S" curve of upper and lower back can be caused if right sided muscles are weaker in the upper back and left sided muscles are weaker in the lower back. There can be "opposite" "C" and "S" curves depending on which side of the spine the muscles are weaker.

A 1950s study found that about one-third of those who had polio developed scoliosis, a number that increases with age. Many young polio survivors had spinal fusion surgeries using bone chips and spent months and months in body casts to "fuse" the vertebrae together, stop spinal curves and prevent the back from curving and squishing the lungs and other organs.



On the topic of PPS and Depression

Question: Could you tell me whether depression can result from PPS?

Answer: Depression is not a PPS symptom. Sure, polio survivors can become clinically depressed. But our research on more than 1,100 polio survivors found no more Major Depressive Episodes than in the general population. Actually there were fewer major depressions but much more Adjustment Disorder with Depressed Mood that did not need antidepressants to treat, just psychotherapy. See <https://www.icd10data.com/ICD10CM/Codes/F01-F99/F40-F48/F43-/F43.21> <https://www.ncbi.nlm.nih.gov/books/NBK519704/table/ch3.t19/> and the following:

Long-standing Poliomyelitis and Psychological Health.

From Disabil Rehabil. 2015 Feb 27:1-5. Shiri S, et al.

Objective: To compare the psychological health of the individuals with long-standing poliomyelitis, with or without post-polio sequelae (PPS), to the general population and to identify the role of work as well as other variables with regard to their psychological health. **Subjects:** One hundred and ninety-five polio patients attending post-polio clinic in Jerusalem. **Methods:** Emotional distress (ED) was measured using the general health questionnaire (GHQ-12). Demographic, medical, social and functional data were recorded using a specific structured questionnaire. Each polio patient was compared to four age- and sex-matched controls.

Results:

- 1) Emotional Distress was higher in the polio population as compared to the general population.
- 2) Within the polio population Emotional Distress was higher in those who were not working
- 3) There was no relationship between Emotional Distress and the functional level of polio participants and no difference was found in general health between polio participants with or without post-polio sequelae.
- 4) Emotional Distress in the general population was related more to subjects' subjective perception of physical health than among polio survivors.

Conclusions: Long-standing poliomyelitis is associated with decreased psychological health as compared to the general population. Yet, the resilience of polio survivors is seen by their ability to stop additional decline of psychological health in spite of deterioration in their physical health. Work appears to be a significant source of resilience in the post-polio population.

Implications for Rehabilitation: Polio survivors often suffer from high emotional distress and may benefit from psychotherapy aimed at reducing distress. As active employment status is associated with increased mental health among polio survivors, encouraging participation at work needs to be a significant component of psychotherapeutic programs. Polio survivors, although physically disabled, are resilient as their mental health is less affected by physical impairments. This and other expressions of resilience may serve as a platform for increasing personal growth among them by implementing hope-oriented psychotherapy.

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On the topic of PPS Fatigue

Question: The most annoying aspect about fatigue is its variability. Every day is different and my reserves aren't consistent. Some days I achieve a huge amount without any subsequent fatigue and at other times a fraction of that effort will have me crashed out for days. I've noticed that today's over exertion doesn't always cause tomorrow's crash. My body's reaction can be several days later or it can be an accumulation of several weeks' worth of tiny exertions. I consciously try to listen to my body, limiting my efforts but every now & then (and increasingly), without warning my body says NOT TODAY!!

Answer: You are actually defining the predictability of Post-Polio fatigue: "... today's over exertion doesn't always cause tomorrow's crash. The body's reaction can be several days later or it can be an accumulation of several week's worth of tiny exertions."

You describe the "48 Hour Rule:" Fatigue after exertion often takes 48 hours to reveal itself. This is why it's so important to measure steps and keep a daily [log](#) of activities and symptoms to reveal the triggers for fatigue.

You will find the PPS Fatigue Log and many [articles](#) about PPS Fatigue in the comprehensive [Encyclopedia of Polio and PPS](#).

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On the topic of PPS being Progressive

Question: I've just read Mia Farrow's [Post-Polio Letter](#) again, but I still can't get my head around PPS not being progressive. I find that confusing. The alternative is that is stable and doesn't get worse. I think we have all experienced decline and progressive weakness and pain. Can you explain what you mean please? As it stands, if I give this to any doctor with little or no understanding of PPS, I fear they will immediately hone in on the 'not progressive' and close the door to possible or further decline.

Answer: PPS is the result of overuse and exercise damaging already damaged neurons. There is no "disease" underlying PPS that progresses. *PPS symptoms progress if you don't listen to your body and stop activities before your neurons stop you.*

Of course, after age 60, everyone loses about 1% of motor neurons every year and has lost a greater percentage of brain activating neurons just due to aging. If you start out with only 40% of your motor neurons after polio, losing even a few percent more is going to have some effect on muscle strength.

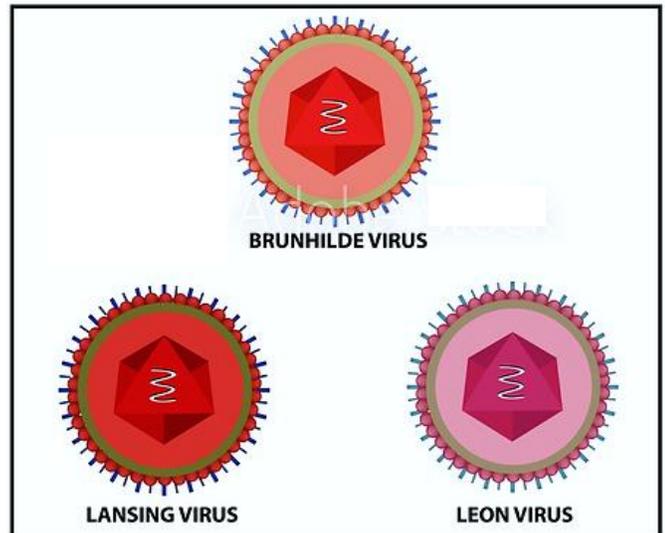
As for doctors homing in on the "not progressive," they should be focusing in on your symptoms, activities and need for assistive devices to *prevent*, not close the door to, further decline.

On the topic of there being Three Types of Polio

Question: If a person had polio can that person get it again or be a carrier?

Answer: Can you get polio more than once? Yes. There are THREE polioviruses. You could get Type I (Brunhilde), then Type II (Lansing), then Type III (Leon). (Type I poliovirus was the epidemic strain that caused most cases of polio.)

Each of the three types of poliovirus is genetically different and therefore each requires a different polio vaccine to get the body to generate the specific antibodies needed to counteract each type of virus.



If you had polio and were infected again you'd almost certainly have enough antibodies (if not immunocompromised) to prevent the poliovirus from growing in your body and would *not* be a carrier who would shed poliovirus nor would you get polio symptoms.

Unfortunately, there is much confusion about the "three types of polio." With regard to the poliovirus, there are three types. But people wrongly talk about there being "three types of polio" depending on symptoms and body areas affected:

- **Spinal Polio** indicates the virus affected your spine and would cause limb paralysis;
- **Bulbar Polio** indicates the virus affected your brain stem and would cause trouble swallowing and breathing;

• **Bulbar-Spinal Polio** indicates the virus affected both your brain stem and your spine, which would cause limb paralysis and trouble swallowing and breathing.

Anatomically, there is no such thing as “three types of polio,” spinal bulbar and bulbar- spinal. Everyone who had paralytic polio had some degree of damage to their brainstems and spinal cords. So anyone who had paralytic polio, and many who had no symptoms at all, had “bulbar-spinal polio.”

This is all covered in detail in [The Polio Paradox](#).

[The Encyclopedia of Polio and Post-Polio Sequelae](#)

contains all of [Dr. Richard Bruno's](#) articles, monographs, commentaries, “Bruno Bytes” (Questions & Answer articles) and his Video Library.

The Encyclopedia of Polio and PPS is also available by a direct link from www.postpolioinfo.com

Are you looking for a specific topic?

The Encyclopedia Index (By Subject) is available by clicking [HERE](#)