

# Why Does Resting Help?

- Dr. Richard Bruno



Q: If the accepted theory of post-polio muscle weakness is that our motor neurons are dying, why do I improve with rest after having a period of severe weakness when I overdo? Even though I can become completely lame, the loss is temporary if I rest up for a day or a week.

A: You're describing a symptom that PPS researchers have totally ignored: "transient weakness". We call it "New Year's Syndrome". Polio survivors complain that their muscles become significantly weaker in late December, more than likely because of too much Christmas shopping, but strength returns in January after they rest.

But something dangerous is happening to cause the transient weakness of "New Year's Syndrome". Remember that the poliovirus killed off at least 50 percent of your motor neurons. The neurons that weren't killed were damaged by the poliovirus but were able to sprout – send out extra "telephone lines" – to talk to the muscle fibers that were orphaned when their motor neurons died. After polio you were left with less than half of your motor neurons – neurons that not only are oversprouted, but also have cell bodies that are smaller than normal, have damaged protein-making "factories", and have been severely overworked for the past 50 years.

When you experience transient weakness, we think you have overloaded your neurons' protein-making factories and drained their reserves. After you rest, the neurons' protein supply increases and you are able to use your muscles again. But every time you drain your motor neurons, we think you are doing damage that eventually causes permanent weakness as the drained neurons die. Think of what would happen to your car battery if you left the headlights on every night. You get up the first morning and your battery is flat. You jump-start the battery and drive off. The next night you leave the lights on, jump-start the battery again, and drive away. But after about a week the battery will no longer take a charge and you won't be driving anywhere! Canadian PPS researcher Alan McComas found that polio survivors who are getting weaker over time lose seven percent on top of the 50 percent they have already lost! Prevent transient weakness – and possible permanent weakness – by resting before your muscles become weak, let alone completely lame. Remember: You can replace your car's battery, but you can't replace your motor neurons.

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