

Polio Feet: *There's a reason you have cold feet - but you can keep warm and stay cool*

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The process that cause "Polio Feet" to turn blue and cold and become difficult to move when it's only cool is the same process that caused paralysis after the original polio.

The Polio virus got into the spinal chord and either destroyed or damaged the anterior horn cell motor neurons that transmit the message to move from the brain to a muscle. When those neurons were damaged, or especially when they died, they disintergrated and the muscle fibers that used to be turned on by those cells no longer were.

There is another kind of motor neuron that was affected by the virus - the motor nerve that controls the muscle around your blood vessels. When these muscles died, there were no motor nerves to tell the blood vessel to contract; if the blood vessel cannot contract, blood 'pools,' especially in the veins. When the blood pools in the veins, it is going to be blue, because venous blood is not oxygenated.

Polio feet are caused by warm blood that should be in the center of your body, flowing out into the hands, arms, and especially the legs (since gravity is pulling the blood down). The warm blood pools in the surface of your skin, and because the blood vessels cannot contract, the result is "polio feet." The venous pooling causes your blood to radiate heat into the environment. People who had polio keep the world warm, unfortunately at their own expense. The price of this is a thorough cooling of the limbs and all tissues of the limbs.

When heat leaves the veins, the motor nerves that lie near the surface of the skin start to cool. The muscles that lies just a bit below the surface starts to cool. The connective tissue that connects muscle to muscle, and muscle to bone starts to cool and stops being elastic so it is harder for it to move.

When the motor nerves aren't functioning well, the muscles aren't going to function well; if the muscles don't function well, there is going to be muscle weakness. We think that muscle weakness and the loss of body heat are causing fatigue; and we think that people who lose all their body heat into the environment are burning calories to maintain their body temperature, so there are fewer calories to keep moving.

People who had polio should dress as if it is 20 degrees colder than it actually is, but you should dress in layers so you can control your body temperature and not pass out from a rapid flow of blood away from your head as your arteries warm.