



## **Cold and Purple “Polio Feet**

A Bruno Byte

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**Question:** Why are my feet and lower legs always ice cold and purple, especially in winter? My doctor checked my blood flow and says it sounds "clear." I've tried heavy socks and leg warmers. What's going on? What can I do to stay warm?

**Dr. Bruno's Response:** You have "polio feet," feet and legs that are always cold and purplish. Your blood flow sounds "clear" because your arteries are open. It's your veins that are the problem because they are too "open."

Polio survivors have trouble with cold because the neurons in the brain and spinal cord that cause the veins to contract were killed by the poliovirus. You are unable to stop warm blood from pooling in the veins near the surface of the skin, causing the feet to look purple or even blue. As the outside temperature drops, pooling allows the loss of heat from warm blood near the surface of the skin and causes your tissues to cool. Motor nerves and muscles--lying just below the surface of the skin--cool. Cold motor nerves conduct more slowly and may be less able to make cold muscles contract quickly and forcefully. Tendons and ligaments also get cold and become less elastic (like putting a rubber band in the freezer) making movement of weak muscles more difficult. Cold causes muscle weakness in 62% of polio survivors, muscle pain in 60%, and fatigue in 39%. It takes hours under an electric blanket or in a long, hot bath to warm cold legs and regain strength.

We found in our very first study of PPS that polio survivors lose 75% of their strength when the temperature drops from 85 to about 65 degrees. We also found that polio survivors' motor nerves function as if it's 20 degrees colder than the actual temperature. So, polio survivors should dress as if it's 20 degrees colder than it actually is. The trick is to stay warm from the get-go. You should dress right after showering when your skin is warm and red. Try heat-retaining sock liners or even long-johns made of the woven, breathable plastic fiber polypropylene (marketed as Gortex or Thinsulate). Then put on warm socks or try battery-powered socks or ski-boot insoles. Also, keep your feet elevated as much as possible during the day.

Remember that changes in season are also difficult, since your body can't figure out whether it's warm or cool. Polio survivors report more muscle pain, especially headaches, during seasonal changes. Regardless of the season, whether you're being chilled by a Northeast wind in November or by excessive air conditioning in August, dress in layers to control your body temperature, because your body can't. Try not to wear skirts, dresses or shorts between Labor Day and Memorial Day.

### **The Encyclopedia of Polio and Post-Polio Sequelae**

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