



DiETING and PPS: Red Herrings and Low Blood Sugar

A Bruno Byte

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Question: I have been having more weakness and fatigue so I went to an orthopedist. He said that I'm "too fat," that I should lose ten pounds to take weight off my legs and I would get stronger. I am at the ideal body weight for my height. Would losing ten pounds cure my weakness and fatigue?

Answer: Weight loss is the "red herring" of PPS treatment, not the herring you eat but the herring doctors who know nothing about PPS try to feed you. Many polio survivors have been told that if they'd only lose weight their PPS symptoms would disappear. In her study of 125 polio survivors, Margaret Campbell found that weight was not related to any PPS symptom. A four-year study of US and Swedish polio survivors found that Americans were ten pounds heavier to begin with and gained eight pounds over the four years, compared to Swedes gaining one and one-half pounds. Still Americans had no greater loss in strength or increase in any PPS symptom as compared to the lighter Swedes.

Sure, if you're 5 foot nothing and weight in at 250 pounds, you need to drop some weight. But losing weight is not the cure for PPS. However, eating well is a front-line treatment for PPS. We asked polio survivors to list what they usually ate for breakfast and rate their symptoms on our 1998 International Post-Polio Survey. We found that the typical post-polio breakfast consisted of coffee, a slice of toast – and, sometimes, cold cereal -- which provided only about 9 grams of protein. The polio survivors weighed 160 pounds on average which means that their bodies needed to take in 75 grams of protein each day -- 25 grams at each meal -- to maintain that weight. So polio survivors in the study were missing 16 grams of protein at breakfast. We found that the more protein polio survivors were missing at breakfast the more fatigue, muscle weakness and pain they reported during the day plus the greater the number of cups of caffeine- loaded coffee or tea they drank.

We then brought polio survivors into our laboratory to measure blood sugar and attention. We found that the lower the blood sugar, the worse polio survivors did on attention tests. Attention was about 20% below normal even though their blood sugar was in the normal range. In fact, polio survivors ability to pay attention was actually *worse* than in diabetics who had been given too much insulin! So, polio survivors' brains act as if they were *hypoglycemic*.

Why might this be true? There are receptors on the surface of your neurons that latch onto sugar molecules to pull them inside. These receptors are vital because blood sugar is your neurons' only fuel. And here's where the problem likely lies. Sugar receptors are made of protein. Studies have found that protein factories inside neurons are breaking apart in polio survivors who have new muscle weakness. So polio survivors may not make enough protein to manufacture all the blood sugar receptors they need to take in the amounts of sugar required for neurons to function properly.

What should polio survivors do to treat their hidden hypoglycemia? They need to eat three to five times a day and have protein at every meal, especially at breakfast. We recommend that polio survivors eat immediately after they get up, since they need to break their fast and fill their tanks for the day ahead before stressing hungry neurons by bathing and dressing. (For some breakfast and snack ideas go to the [POST-POLIO "DIET"](#) in the PPS [Encyclopedia](#). We aren't recommending an "all protein, no carbohydrate" diet -- or a "diet" at all -- but for polio survivors to take in the amount of protein their bodies need to function properly.

Our patients do worry that eating protein, stopping exercise and resting more will cause them to gain weight. One patient proved the exact opposite. Abby, a programming whiz at AT&T, charted on his computer the number of grams of protein he ate and weighed himself once a week. We had given him braces, crutches, a scooter and told him to rest. He religiously ate protein at breakfast and for snacks, limited portion sizes and reduced carbohydrates and fats. Abby lost 1 1/2 pounds each week. Other patients have had similar results, or their weight has not increased when they slowed down. (But please check with your doctor and have your cholesterol, thyroid and blood sugar measured before changing your eating habits or trying to lose weight.)

And just a reminder that exercise isn't the answer for polio survivors wanting to lose weight. Folks don't realize how many calories they burn by doing everyday things. Look how many calories those without polio burn during 20 minutes of activity: sleeping or watching TV (21); talking or writing (42); typing (54); dressing or washing (74); walking slowly (80); preparing a meal (92).

Washing and dressing, walking around the house, answering e-mail, napping, making three meals, talking to a friend, balancing your checkbook and watching TV burns 500 calories each day — exactly the amount you must lose each day to drop one pound. If you want to lose weight, up your protein intake, talk to more people, send more e-mail and take a nap!

The Encyclopedia of Polio and Post-Polio Sequelae

contains all of [Dr. Richard Bruno's](#) articles, monographs, commentaries and "Bruno Bytes"
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