



Post-Polio Protein Power: Eat Well, Be Well

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"Breakfast? Sorry, don't have the time. In the morning there's too much to do, like showering and dressing and getting to work. I grab a cup of coffee (or two or three) and maybe a donut at work..."

"Lunch? Don't think so. I'm still catching up from my late start in morning. I grab a cup of coffee (or two or three) and maybe wolf down half a Big Mac..."

"Dinner? I'm either too tired or hungry as Patton's Third Army. I either defrost a piece of pizza and drag myself into bed or eat everything that isn't nailed down!"

"So why am I totally exhausted but can't stop gaining weight?"

Americans are not very good at taking care of themselves. American's with disabilities are no better, and maybe a little worse, at self-care because it takes so much time to do things non-disabled folk do in a flash, like showering and dressing. There's hardly any time or energy left for planning meals, shopping, cooking ... or even eating.

However, people with disabilities pay a higher price for lack of self-care than do people without disabilities. For those who use wheelchairs good eating habits and proper nutrition are essential, not only for general good health, but also to prevent bowel and urinary problems, to prevent weight gain, and to maintain a decent level of energy.

One group of people with disabilities shows the consequences of poor eating habits: North America's 1.8 million polio survivors. Nearly 76 percent of polio survivors experience Post-Polio Sequelae (PPS). PPS requires polio survivors to slow down and to rest during the day. The problem is, polio survivors are Type A, hardworking, pressured, perfectionist super-achievers who have pushed themselves beyond their physical limits and allow no time for self-indulgent luxuries -- like food. Polio survivors are afraid if they're less Type A people won't need them, but also because they are afraid of gaining weight if they become more sedentary. But they shouldn't be afraid. Food is good! Eating properly doesn't lead to becoming fat and actually reduces PPS symptoms.

Research at the Post-Polio Institute found that polio survivors with blood sugar levels in the low normal range have as much difficulty paying attention and paying attention as would diabetics with blood sugars as low as if they had taken too much insulin. Polio survivors' "Type A diet" -- three cups of coffee for breakfast, skipping lunch and eating pizza for dinner -- is actually starving their nervous systems' and causing PPS symptoms. The relationship between diet and PPS was seen in the 1998 National Post-Polio Survey: the less protein polio survivors had at breakfast the more severe their daily weakness and fatigue.

Why do polio survivors function as if they have low blood sugar and report more symptoms when they don't eat protein at breakfast? Because polio survivors are running their nervous systems on "half a tank of gas" since about 50% of all brain stem and motor neurons were killed decades ago by the poliovirus. What's worse, the metabolic apparatus, the internal power plant, of the neurons that survived the original poliovirus infection was severely damaged and we believe less able to take in blood sugar, their only source of fuel. So polio survivors have been running their full-tilt, Type A lives on half the normal number of neurons, neurons that are less able to use blood sugar. We found that even normal levels of blood sugar were not enough to fuel the remaining poliovirus-damaged, metabolically impaired neurons. That's where protein at breakfast comes in.

Protein: The fuel that keeps on giving. Protein provides a long lasting, "slow release" supply of blood sugar throughout the day. Polio survivors who had protein for breakfast reported a reduction in PPS symptoms because their fuel tank stayed full longer. They didn't need to "fill up" throughout the day with short-lasting sugar fixes, like soda or candy bars. When we ask our post-polio patients to eat protein every day at breakfast, and have small, non-carbohydrate snacks throughout the day, they report an almost immediate reduction in nearly all the symptoms of PPS, especially fatigue. But this "protein power diet" is neither a fad nor a miracle: it's just common sense. No engine can be expected to run without gas. That's why it's a good idea to

eat breakfast before showering and fill your tank before your neurons need the fuel.

Our patients worry that having breakfast as they start using a wheelchair and resting more and will cause them to get fat. A four year follow-up study found that U.S. and Swedish polio survivors, living their typical "use it or lose it" lifestyles without using new assistive devices or resting, lost equal amounts of leg muscle strength, about 2 percent per year. However, when subjects from the two countries were looked at separately the Swedes gained only 6 ounces per year, while the Americans gained over 2 pounds; that's 220 percent more weight!

Although weight gain alone is not responsible for the progression of muscle weakness in polio survivors, it is Americans' high fat, "Big Mac" diet that causes them to gain weight. You can fuel your neurons, feel stronger and less fatigued without gaining weight if you choose low fat, low cholesterol sources of protein. In fact, as many of our patients slow down, sit more and use a scooter, lose weight (about a pound per week) if they eat more protein, reduce portion size and limit carbohydrates.

We aren't recommending an "all protein, no carbohydrate" diet. We aren't recommending a "diet" at all, but a method for eating healthily every day. We suggest 16 grams of protein at breakfast (that's about 1/4 of the daily protein requirement (70 grams) for a 150-pound person). Always check with your doctor, especially if you have kidney problems, before changing your diet and ask to have your cholesterol measured at your yearly checkup.)

Look at the list protein-rich foods (below) and select different breakfasts so you can have a variety throughout the week. Remember, you want foods that have more grams of protein than they do fat.

Eat Well and Be Well: PROTEIN-RICH FOODS:

You need 16 grams of low-fat protein at breakfast. Note: measures in grams.

<u>Great:</u>	<u>Protein</u>	<u>Fat</u>
Cottage Cheese (lite, 1 cup)	8.0	2.3
Salmon (3 ounces)	17.0	5.4
Yogurt (8 ounces)	12.0	4.0
Tofu	10.0	5.9
2% Milk (1 cup)	8.0	3.0
2 Egg Whites	6.8	0
Bagel	6.0	1.4
Egg Beaters (1/4 cup)	5.0	0

Higher Fat:

Swiss Cheese (1 ounce)	8.1	7.8
Lite 'n' Lively Cheese (1 ounce)	6.4	4.3
Hard Boiled Egg	6.1	5.6
Cream Cheese (Lite, 1 ounce)	2.9	4.7

Lower Protein:

Quaker Life	5.2	1.8
English muffin	4.5	1.1
Oatmeal (1 package)	4.4	1.7
Cheerios (1 1/2 cups = 1 oz)	4.3	1.8
Shredded Wheat (1 ounces)	3.1	0.6
Total (1 cup)	2.8	0.6

<u>Not Great:</u> Bacon (3 strips)	5.8	9.4
Egg McMuffin	17.0	32.0
Peanut Butter (1 Tbs)	4.6	8.2
Coffee	0.1	0

Protein Power Breakfasts:

12 minute breakfast: 2 hardboiled eggs (12 g) and an English Muffin (4.5 g)

8 minute breakfast: 3 scrambled egg whites (10 g) and a bagel (6 g)

6 minute breakfast: Toasted bagel (6 g), lite cream cheese (3 g) and 1 glass 2% milk (8 g)

4 minute breakfast: Yogurt (12 g) and 1 ounces of low-fat cheese (6 g)

2 minute breakfast: 1/2 cup low-fat cottage cheese (14 g)