Waste Management

Dr. Richard Elion interprets Sean 0. Strub's nutritional status

February 1, 1996 By Bob Lederer

Laboratory analyses of blood and other medical measurements, which help health practitioners make diagnoses and detect toxic effects of medication, can also help people with HIV track their health. Nutrition is a crucial issue for PWAs, yet one often ignored by physicians. Fortunately, most doctors know at least some basics of measuring nutritional status. Translating that information into practical diet advice, however, is another matter, often requiring the help of a trained nutritionist or other alternative therapist. ***Richard Elion, M.D.****, is a clinical practitioner and researcher in Washington, D. C. who has worked with people with HIV for 12 years and is also trained in nutrition and Chinese medicine. He examines the question of nutrician status tests and their relationship to diet for* POZ *founder Sean 0. Strub.*

Study after study shows that nutrition is one of the most important factors in determining how long people with HIV stay well. Those whose nutritional status goes downhill are at highest risk for wasting, opportunistic infection and death. But this decline can be slow and insidious, sometimes starting before any serious AIDS-related symptoms, so it's very important to keep careful track of where you are on the nutritional continuum. How can you monitor your status? There are three key indicators to watch: Overall body weight, body cell mass and blood chemistry measures.

Every person with HIV should get weighed at least monthly and keep a log. Sean's weight has been constant at about 155 for many months now, but anyone experiencing more than a 10 percent loss of body weight over a 12 month period (an eight-pound loss in Sean's case) should get a complete medical workup to rule out any opportunistic infection. You should also consider eating more and better food; if needed, try an appetite stimulant such as marijuana, Marinol or Megace; or a protein-building strategy.

Unfortunately, most physicians stop at measuring weight. But weight measures can distort one's perception of nutritional status: You can maintain stable body weight while gaining fat and steadily losing muscle and even organ tissue. This is a loss of body cell mass. Measurement of this value is extremely important because its decline can flag a serious loss of immune function.

The most precise measure of body cell mass -- and one of the best predictors of survival for PWAs -- is the bioelectrical impedance analysis (BIA). This cheap test ($60, reimbursable by private insurance and Medicaid) uses a radio current to measure the proportion of body weight made up

of muscles and organs. A few hospitals, weight-loss centers and gyms have these devices, but doctors have been slow to recognize their usefulness. You may need to prod your physician to purchase one; the machines quickly pay for themselves.

The BIA evaluates nutritional status as a snapshot in time. It doesn't comment on the direction of wasting but rather compares one's values to a reference group of equivalent gender, race, age, height and weight. To flag dangerous downturns, I believe everyone with HIV should have a baseline BIA and then get updates every four to six months if above 200 CD4 cells and every three months if below. Sean recently had his first such measure, which found his body cell mass to be 42 percent of total body weight. This is a little low for someone his size but not bad. Most important will be to follow the trend on his future readings; for accurate comparisons, it's best each time to get the BIA before breakfast.

An alternative, but far cruder, tool for measuring body cell mass is a set of skinfold measurements, done by a professional using calipers and measuring tape.

There are several ways to push the body to increase its cell mass. One approach involves using hormones such as DHEA, testosterone and other androgens. Another way is to take one of the nutritional (caloric) supplements that provide carbohydrates and fats. Maintaining a good diet is a more natural, less expensive way. I recommend a high protein diet with increased fat, which also helps boost the unduly low cholesterol levels common among PWAs. But this need not mean more animal fat; for some people, animal fat can be difficult to digest. Nuts, nut butters, tahini, cold pressed oils and avocados are among the best plant-based sources of fat.

When increasing protein and fat, the only caveat is that many PWAs have absorption problems, sometimes due to enzyme deficiencies. The most common measure of absorption is the dxylose stool test. If you find deficiencies in lactase (the dairy-digesting enzyme) or other pancreatic enzymes -- which I often do among my patients -- you'll want to add those enzymes (available through prescriptions, buyers clubs or health food stores). And if you show evidence of malabsorption, you might want to take a significant amount of your calories, say 600-700 a day, as medium-chain triglycerides in the form of a formula or a nutrition bar.

Blood tests for changes in nutritional competence also provide a window on your risk for wasting. As part of the CHEM I2 PROFILE (also known as the CHEM SCREEN), TOTAL PROTEIN is an important reflection of the body's protein stores. The normal range is 6.08.0 grams per deciliter (gm/dl). Although Sean has a reading of 8.1, it is just borderline high, but that's actually good -- it shows that his nutritional stores are pretty adequate.

Another key measure is of ALBUMIN, a protein (the same as in egg whites) produced by the liver as a carrier for other nutrients. Studies suggest that survival for people with HIV is directly associated with maintaining albumin level. The normal range is considered 4.0-5.0 milligrams per deciliter (mg/dl). At 4.4, Sean's albumin is in the low range of normal, but it's decent for a PWA. A reading below 3.5 would indicate thatthe liver is either damaged or diverting its energy to synthesize more vital nutrients. In that case, I would suggest some of the steps mentioned before.

There are other important blood values to look at in assessing nutrient status, including some of the CBC (COMPLETE BLOOD COUNT) measures and micronutrient levels, but we don't have time to discuss them here.

One blood value in Sean's report is not directly related to nutrient status but of serious concern. His AMYLASE reading is, at 409, three times the normal value and much higher than ever before for him. Amylase is a pancreatic enzyme that breaks down starch, and a high value strongly indicates pancreatitis -- a serious inflammation of the pancreas. Since this organ helps digest fats, carbohydrates and sugars, pancreatitis impairs your ability to absorb these vital nutrients. To confirm the diagnosis, put your hand between your ribs underneath the breastbone. If it's painful, you probably have pancreatitis. Sean's been having this pain for months, and reports it gets aggravated after eating animal fat, a common scenario.

An amylase test has to be ordered separately, which I do for everyone on antiretrovirals because those drugs can cause or aggravate pancreatitis. In Sean's case, the most obvious culprit is ddI, which he started about six weeks before this test. Other drugs that can cause this condition include ddC (commonly), d4T (infrequently), AZT (unusually), pentamidine and various antibiotics (uncommonly) and alcohol. Nondrug causes, often hard to diagnose, can include CMV, gallstones or -- if there's diarrhea -- cryptosporidiosis or microsporidiosis.

After receiving these results, Sean's doctor had him stop ddI and asked him to retest for amylase levels two weeks later to see if that was indeed the culprit. My advice to Sean is: 1) don't add any new medications that could cause pancreatitis, 2) replace his pancreatic enzymes, 3) avoid alcohol and fried or fatty foods (animal or vegetable) and 4) watch blood sugar closely to make sure he's not becoming diabetic. He may want to consider a less toxic antiretroviral, like d4T, 3TC or a protease inhibitor. I would also encourage him to explore natural approaches, such as micronutrients and Chinese medicine, to help heal his pancreas and strengthen his immune system.
