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The Better Man '06 (page 6)

The Second Thing That Ages You: Your Immune System (which will weaken if you let it)

By Mehmet C. Oz, M.D. and Michael F. Roizen, M.D.

The weakening of the immune system is heralded by one of three things: infections, inappropriate use of the immune system (autoimmune ailments), and cancer. And they're all a little bit related to one another. First let's talk about what immune cells actually do, because once you understand that, what follows will make intuitive sense.

The body needs a way to respond quickly to a foreign assault. Immune cells provide that response. When an infection invades, your body rapidly senses it: Immune cells "see" the invader, gobble it, identify it by what it's made of, and tell the rest of the immune cells what's there so they can start the "clonal expansion" of warrior cells to defend your body's borders. But that process of warning the other immune cells is really complicated. For example, if your immune system confuses a virus with cells lining your cartilage or bone, you generate friendly fire and suffer arthritis. So the body has to get the right message out. And in order to do that, it needs to have the right tools available. That's where your diet comes in: What you eat provides the building blocks of your immune system. This goes back to an earlier point: Foods are drugs. If you shape the way you eat around that understanding, it's easy to eat in a way that strengthens your immune system.

Eating For Immunity

Rule number one: If it comes out of the ground looking roughly the way it looks when you eat it, it's fine. Carrots, sweet potatoes, onions, celery, broccoli, cauliflower, all the leafy greens, all the fruits: These all contain vitamins, minerals, and antioxidants that your body needs to fight off infections. And you should eat them basically in their natural state. You might sauté them (for less than four minutes, ideally) in healthy oils or flavorful spices and herbs, but you don't process them, you don't add anything or take anything away that changes them from what they are to something they're not. Here's another way to think about it: There's no such thing as a Twinkie plant.

Rule number two: There are very few white foods that are good for you. White flour, white pasta, white rice, and, of course, white sugar—they're just empty calories with no real nutritional value. Even in moderation, they'll age you. Why eat anything that saps your energy and potency?

The best diet is the Mediterranean diet. It's actually better than a vegetarian diet. There are a lot of reasons for that, but one of the main ones is that a lot of vegetarians don't get enough of the good fats we talked about in the circulation section. So it's better to just eat Mediterranean: Greek, Turkish, Italian. The natural, colorful foods mentioned above are great for you, but what many people don't realize is that you don't absorb their benefits well without fats. Olive oil and tomatoes: That's tomato sauce. (See sidebar, page 117.) Olive oil, fish, and a ton of fresh vegetables: That's Mediterranean. These diets also use plenty of garlic, which protects your arteries by relaxing them and preventing clot formation.

A few other things related to diet and immunity:

- You need to get enough vitamin D and calcium. The majority of Americans living north of Atlanta do not get enough D during the winter months. So drink fortified OJ, low-fat milk, or lemon-flavored cod-liver oil (one tablespoon daily). You'll end up with a nimble

immune system that's carried around by strong bones.

- Vitamins B and C, folate (aka folic acid), and zinc (found in almost all seeds) facilitate our immune system's rapid response to colds by reducing the number of "typos" our bodies make when copying DNA strands during clonal expansion. All these elements (and more) will be in any men's multivitamin. Nature Made is a reliable brand available at most major pharmacies and health-food stores. Or if you prefer liquid form, try Vemma (vemmma.com).
- Finally, there's a war of the worlds going on in your intestine, so you need to keep the bacteria in your gut healthy with probiotics like Lactobacillus GG (a supplement) or live-culture yogurt, such as Why are we fixating on your gut? Because your intestine is your second brain. There's more serotonin in your gut than there is in your brain and spinal cord combined. Dannon Activia. You have a hundred trillion bacteria in your belly—ten times the number of cells—across three hundred to five hundred different species, and two hundred of these species can be lethal. So you need to make sure you have enough of the good bacteria to ward off the bad. There are actually two processes going on here. One is, the good bacteria communicate with the intestinal wall, which erects a barrier against the bad bacteria; the normal barrier wouldn't be tough enough by itself, but the probiotics help build a sturdier wall. And the second is, the good bacteria effectively talk the bad bacteria down from a fight. It's like a brewing conflict that's settled diplomatically. When the good guys are there in force and they show they mean business, the bad guys drop their weapons.

Scrubbing For Immunity

Think that guy in your office who won't touch doorknobs with his bare hands is crazy? You're right. He is. But the guy who washes his hands hourly is completely sane. A lot of infections are passed by hand—almost all infections, actually, especially during flu season. You get sick in the wintertime not because of the weather but because you're in a closed environment. You hear your coworker coughing and you think, Great, now I'm going to get sick, too. But for the most part, it's the germs on surfaces, not the germs in the air, that are the problem. The guy with the flu pours himself a cup of coffee; now everybody who touches the coffeepot gets his germs on their hands, and the next time they eat something—well, you can see where this is going. So it's important to wash your hands systematically—before lunch, before your coffee break, and after every handshake.

A Few Unpleasant Scenarios

Let's go back to what we were discussing at the beginning of this section: the three things that can break down your immune system.

If you don't give your body the building blocks it needs (i.e., the right quantity of the right foods), your immune response will be weaker and slower—you'll get sicker and stay sick for longer. The wrong building blocks can inflame the body's delicate machinery, leading to an immune reaction that's nonspecific, that's all over the place. That's often what's happening to people who are chronically sick or under the weather. It's not that they're seriously ill with anything; it's that their bodies respond to every little invasion as if it were a full-blown infection.

If your immune system simply can't focus on foreign cells in the body, then you can get an autoimmune or immune-suppressed disease, like AIDS, Lyme disease, rheumatoid arthritis, or irritable-bowel syndrome, which affects 5 percent of the population. These diseases are the result of weird civil wars taking place in the immune system.

Finally, there's the ultimate palace coup—your own cells becoming, in a sense, alien invaders in your own body. In other words, cancer. And to understand cancer, we need to explore one final aspect of how your body's immune system works.

We talked about clonal expansion; another thing that's amazing about the body's systems is that they can just as rapidly turn themselves off. The way your body shuts down its systems is called apoptosis—cellular suicide. Apoptosis causes programmed cell death, and it happens all the time, all over your body, when cells have done their duty.

More specifically, apoptosis is about making sure the right cells turn off and the necessary cells don't. If the wrong brain cells turn off, you get dementias. If the wrong heart cells turn off, you get heart failure. And if a cell simply doesn't turn off—if it loses its apoptotic ability— you get cancer. Cancer cells are rogue cells that don't kill themselves. They're sociopathic. The key for you is to prevent the events that irritate cells so they don't become sociopathic, or to strengthen your immune system so it can find those sociopathic cells and take them out. That's why things like folate (400 micrograms a day), aspirin (two baby aspirin a day), and vitamin D are so effective, because they help your immune system stay on top of those cancer cells. The folate helps prevent genetic typos during clonal expansion. The aspirin turns off proteins in cells that stimulate inflammation and shake the typewriter. And the vitamin D helps your proofreader genes fix any misspelled genes.

You know, we all have cancer right now. All of us have cancer cells. But our immune system, if it's healthy, is able to sense the cancer and kill it. That's why if you're going to do things that aren't good for you—and we're all going to do them every once in a while—then having a healthy immune system to cope with it is invaluable.

The Better Man '06: Contents

Introduction

What's Your BQ? -- Take the Body Quotient Quiz

The First Thing That Ages You: Your ARTERIES (which will rust if you let them)

Things a Man Should Know About Fats

The Mediterranean Miracle: Tomato Sauce

How to Cure (or at Least Shorten) A Cold

The Future of Medicine: SNPs

The Third Thing That Ages You: Your WORLD (which will grind you down if you let it)

Portion Control: Why You Should Buy Smaller Plates

Find Out How Old You *Really* Are--Take the Free RealAge Test