did not develop AIDS; these patients became known as "long-term nonprogressors." But once techniques emerged to measure the amount of virus in the blood, it became clear that these nonprogressors were overcoming the disease in different ways—and some of them were actually suppressing replication of the virus without any treatment. "These people were infected with HIV—the virus could be initially detected from different blood tests—but when they go for follow-up, the virus is gone, and no one knows exactly why," Cubillos-Ruiz says. "They're able to essentially suppress the virus, possibly because they have an ongoing immune response against it."

Known as "elite controllers," these patients make up about 1 percent of the 35 million people currently infected with HIV. Many scientists believe that these patients hold the key to new therapies and even a vaccine against the disease, and much work has been done investigating their individual immune cells. But until now, there had been no way to analyze blood samples for potential biomarkers. Cubillos-Ruiz's team hopes the new system, which combines techniques of nanotechnology with mass spectrometry, will delineate the differences between elite controllers and other HIV-infected patients. "We're trying to discover a new biomarker signature in the plasma of these patients that could tell us why they are able to exert superior immune response against—and superior control over—HIV," he says. Initial results, which confirmed a difference in the signatures, appeared in February, and the team is now working to confirm findings in larger sample sizes.

The main breakthrough that facilitated this work is the nanochip, says Cubillos-Ruiz, a native of Colombia who first used nanotechnology while earning his PhD at Dartmouth. The chip is made of a silica matrix featuring pores of different sizes and chemical properties. Previously, only large proteins (known as high molecular weight proteins) could be screened, obscuring anything smaller. "Now, you can tailor your matrix to selectively capture whatever you want," he says. "In this way, we can improve analysis of peptides and proteins that have never been analyzed before."

In addition to unlocking mechanisms for fighting the virus, the work could yield methods to identify elite controllers before they are infected—not only furthering research efforts but also sparing these individuals, should they become infected, from expensive and aggressive antiretroviral treatment. "It's extremely powerful because no one has ever been able to accomplish this before—to identify these people before they get infected," he says. "It's a huge project, and the avenues we can explore are pretty much endless. The potential—the clinical value of this new technology—is incredible."

— Andrea Crawford

Doc Blogger

Ob/gyn Margaret Polaneczky, MD, posts her thoughts about women's health, food, and anything else that strikes her fancy

Google most doctors, and you'll likely encounter a variety of physician-rating websites, perhaps a link to the institution where they practice. Do a search for Margaret Polaneczky, MD, and one of the top results is "The Blog That Ate Manhattan."

ABBOTT

Margaret Polaneczky, MD

The site, which the associate professor of clinical obstetrics and gynecology launched seven years ago, is an odd hybrid: Polaneczky blogs about cooking, explores women's health issues, reviews restaurants, and offers travelogues and more. Past topics have included the merits of IUDs, biking the Harlem Valley Rail Trail, the debate over hormone replacement therapy, the mushroom barley soup at the old Second Avenue Deli, and struggling with weight while married to a man who's naturally thin. "I just love to write, to speak out," Polaneczky says. "My first five or six posts were about food—that's why the blog is called what it's called—but it morphed pretty quickly into everything. When you create a blog you're supposed to find a niche and stick to it, but mine didn't follow the rules."

The Blog That Ate Manhattan (tbtam.com) has been cited by several major media websites, including the *New York Times* (which linked to her potato latke recipe at Hanukkah), the *Chicago Tribune* (in a column about the best doctor-bloggers), and the *Washington Post* and *New Republic* (both lauding Polaneczky's cogent analysis of mammography guidelines). The site gets about 1,000 hits a day, mainly from Google topic searches; it also has about 1,500 Twitter followers and several hundred subscribers via the RSS service FeedBurner. "Certain posts tend to generate the most traffic, like the ones I've done on HPV," she says. "They probably get the highest volume, followed very quickly by my husband's recipe for sautéed kale."

In addition to the pleasure of writing the posts—she publishes on average twice a week—Polaneczky sees the blog as a novel way to connect with patients. "They really like it. It's nice for them to see me as a complete person," she says, "and it's been fun to have an added dimension to my relationship with them."

The blog has also had an impact that Polaneczky never expected when she started writing it. "The enormously positive feedback on my blog post explaining new mammography screening guidelines inspired me to develop a Web-based decision aid to help women make informed, individualized decisions about mammography," she says. "The decision aid is currently being piloted at the Iris Cantor Women's Health Center, and we hope to make it widely available within the next year."

These days, Polaneczky stresses, it's essential for physicians to have a social media presence. After all, she says, the proliferation of rating websites means that doctors will appear online whether they want to or not. "If you don't have your own presence on the Web, other people are going to create it for you—and it may not be accurate," she says. "You risk having what's on the Web being only what other people are saying about you, versus who you really are."

— Beth Saulnier