



The Vaccine That Could Save Your Life

A string of promising studies has found a surprisingly simple way to help fight cancer.

By Cheryl Platzman Weinstock



“ONCE I FELT the tiny lump, I knew it was cancer,” says Debra,* remembering the day, four years ago, when she noticed the pea-size tumor in her neck. A trip to the oncologist confirmed it: At the age of 40, Debra had stage IV non-Hodgkin’s lymphoma. As a busy physician living in Los Angeles with three children under the age of 9, she was horrified when her doctor told her she’d likely be so sick from chemotherapy she wouldn’t be able to

get out of bed—and in any case would probably be dead within four years.

Debra is one of more than 79,000 Americans diagnosed each year with some form of lymphoma. Chemotherapy remains one of the first lines of treatment, but Debra, now 44, wanted to try something—anything—else. “I feared the chemo would be a temporary solution until the cancer killed me,” she says. “I had to live, for my family.”

At a colleague’s recommendation, Debra

enrolled in a small clinical trial at Stanford University in 2010—and became one of the first 60 patients to test a new cancer vaccine for lymphoma. The vaccine would introduce into her body a small piece of synthetic DNA that looked and acted like a virus; if all went well, her immune system would be fooled into thinking the tumor was an infection and spring into action to target and destroy the cancer cells.

Decades ago cancer immunotherapy was considered by some to be voodoo medicine. “Initial studies were not very effective, and many doctors thought it was a lot of hype with very few results,” says James Gulley, MD, PhD, director of the clinical immunotherapy group at the National Cancer Institute (NCI). All that began to change in 2010, when the FDA approved the cancer vaccine Provenge to treat metastatic prostate cancer. The results from the clinical trials on Provenge were remarkable, giving patients an extra four *(continued on page 110)*


Feeling Good



months, on average, to live. And they didn't just live longer; they felt better, too. The findings were early proof that the body's own immune system could be a powerful weapon against cancer. Today potentially more effective and longer-lasting vaccine immunotherapies are being tested in more than 600 clinical trials as treatments for many of the deadliest cancers, including those of the ovaries, lungs, and breast.

Debra is one compelling reason why scientists believe they may be onto something big: After ten weekly injections of the lymphoma vaccine, more than half of the tumors surrounding her kidneys and other organs had disappeared. One year after her last injection, there was no evidence of disease at all, and three years later she remains in re-

oncologist Drew Pardoll, MD, PhD, director of the cancer immunology program at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins School of Medicine, where the vaccines were invented. "Until now, we expected people with inoperable pancreatic cancer to succumb quickly to the disease."


Of course, it's still too early to know the long-term benefits of the vaccines currently being tested, but doctors remain hopeful that some of the new drugs will earn FDA approval. "Immunotherapy has led to responses that have never been seen with chemotherapy in patients with advanced cancer," says Pardoll. And while increased survival is the ultimate goal, the vaccines have another appealing upshot: minimal side effects. Soreness


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mission. Other patients have had similarly impressive results with the vaccine, and a new version of the drug is now being tested at the Icahn School of Medicine at Mount Sinai to see if it could in fact be a cure for certain types of lymphoma.

Vaccines' ability to lead to remission is still rare, but in many cases they seem to slow the progression of the disease. In a 93-patient study presented in June at the annual meeting of the American Society of Clinical Oncology, when people with inoperable pancreatic cancer received a combination of two vaccines, they survived, on average, 50 percent longer than those who didn't receive both vaccines, with some still alive more than a year after entering the trial. "Surviving that long with this type of cancer is virtually unheard of," says

at the injection site and short-term flu-like symptoms pale in contrast to the collateral damage chemotherapy can cause. "Immunotherapy has been easy compared with everything else I've been through," says Judith Gaffney, 65, of Avon, Connecticut, who has participated in two vaccine trials after undergoing rounds of chemo when her pancreatic cancer metastasized to her lungs in 2011. "Not only has the vaccine helped buy me extra time but I'm well enough to enjoy it." 

Cheryl Platzman Weinstock is a science writer who specializes in women's health issues.

For info on joining clinical trials using vaccine immunotherapy, visit clinicaltrials.gov.



THIS WOMAN WANTS YOUR DNA

Lateefah Simon is on a mission to save her husband's life—and she just might save yours, too.

When Lateefah Simon's husband, Kevin Weston, was diagnosed with a rare and aggressive type of leukemia last year, she learned that his best chance for survival hinged on a bone marrow transplant that would replenish his body with new, healthy blood stem cells. Yet finding the right match can be tricky: The ideal donors are often people with an ethnic background similar to the recipient's, but Weston's half-siblings were less-than-optimal matches, and African Americans account for just 7 percent of donors in the National Marrow Donor Program's registry (bethematch.org). Miraculously, two matches did turn up, but as luck would have it, neither donor was available for a transplant.

Simon knew she had to do something to help save Kevin and others like him. (It wasn't the first time in her life she'd faced a daunting challenge. She'd worked her way out of poverty in San Francisco to run a nonprofit for at-risk young women, earning a MacArthur "genius" fellowship at the age of 26—and landing on *O's* Power List in 2009.) Since January she has organized 27 drives with the help of friends, registering roughly 1,600 potential donors, 91 percent of whom are black. (Joining is as easy as swabbing your mouth for DNA.) Though a match still hasn't materialized for Weston, doctors are now planning to use stem cells from donated umbilical cord blood, which can work as well as those from a full bone marrow match. But that hasn't stopped Simon's campaign—so far, three donors who signed up have been matched to people in need of transplants. Says Simon, "If someone you don't know can save your life, that's truly an amazing gift."

—LAUREN SMILEY