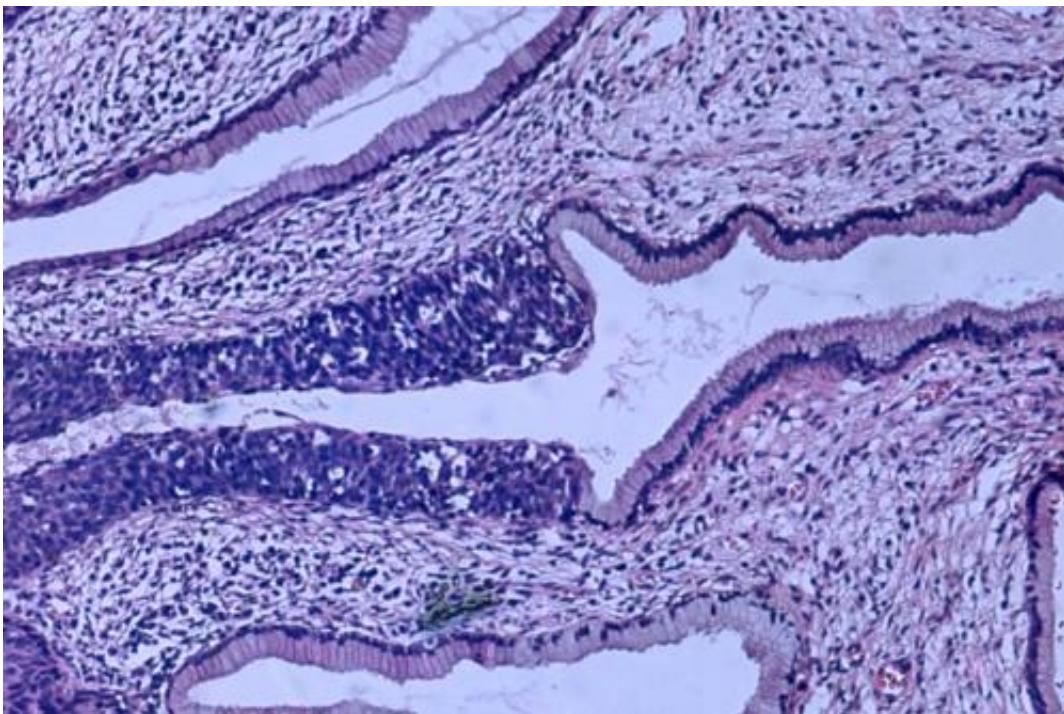


# New therapy wipes out cervical cancer in two women

June 2 2014, by Kerry Sheridan



High grade dysplasia (carcinoma in situ) in the uterine cervix. The abnormal epithelium is extending into a mucus gland to the left of centre. This disease can progress to invasive cancer (squamous cell carcinoma) of the cervix. Credit: Haymanj/public domain

Aricca Wallace knew she was nearly out of time. For more than three years, she had suffered cramping and irregular bleeding, which her doctor thought was a side effect of her birth control implant, known as an intrauterine device, or IUD.

Her annual Pap smears were always normal, so no one suspected cancer.

Except it was cancer, and by the time the 34-year-old mother of two had the IUD removed and was finally diagnosed, her tumors had reached stage three and the disease was spreading through the lymph nodes in her abdomen and chest.

"I was told by a specialist that there wasn't any chemo that could kill it," Wallace told AFP. "And that I'd be gone in a year."

That was in February 2012. A few months later, Wallace's doctor told her about an immunotherapy trial at the National Institutes of Health Clinical Center, a research hospital just outside the US capital.

Wallace enrolled. Doctors removed one of her tumors and collected some of the [immune cells](#) that were surrounding it. They selected specific T-cells that would attack human papillomavirus.

HPV is a common sexually transmitted disease, and most adults get it at some point in their lives. While HPV is often harmless, some strains can cause genital warts or lead to cancers of the cervix, anus, head, neck and throat.

Some 70 percent of cervical cancers are caused by HPV types 16 and 18.

The idea behind HPV-targeted adoptive T-cell therapy is to boost the body's immune response to HPV in the tumors.

## **Worst fever ever**

Wallace first endured a week-long regimen of strong chemotherapy to knock out her immune system. Then came the infusion, which aimed to rebuild her defenses with more than 100 billion of her lab-grown T-cells

that targeted the tumors.

After that, she was given two doses of aldesleukin, which helps the immune cells grow.

The treatment can lead to serious side effects like bleeding, vomiting, low blood pressure, fluid retention, confusion, fever and infection.

"It was the worst fever I ever had," recalled Wallace.

But it worked. Her tumors grew steadily smaller. Four months after the infusion, all the tumors were gone.

On May 29, Wallace visited the NIH Clinical Center again for scans, which showed no disease, marking 22 months since the start of her experimental treatment.

"It is a miracle, honestly," said Wallace, now 37.

Immunotherapy is a promising field that has shown some early successes against the deadly skin cancer melanoma and a handful of other cancers.

Wallace is the first person with cervical cancer on whom this novel approach has worked.

A second US woman has also seen her metastatic [cervical cancer](#) disappear completely and is still disease-free one year later.

## Two of nine patients

But they are just two of nine patients in total. A third woman responded for a short time, but then her cancer returned. The treatment did not help the other six women in the study.

"With only nine patients, we can't even say with any reliability how well it works," said Christian Hinrichs, Assistant Clinical Investigator at the National Cancer Institute.

"All we know is that it can work," added Hinrichs, who presented his research to reporters on Monday at the American Society for Clinical Oncology annual meeting in Chicago.

The technique is based on a state-of-the-art personalized medicine approach developed by his boss, Steven Rosenberg at the National Cancer Institute, to expand tumor infiltrating lymphocytes against metastatic melanoma.

Hundreds of cancer patients have been treated with some kind of adoptive T-cell therapy, or ACT, but success rates have varied widely.

Some 40 percent of patients with [metastatic melanoma](#) who underwent the process are showing no signs of cancer after seven years, according to research published late in 2013.

The technique is still a long way from becoming everyday practice in medicine, and researchers have yet to figure out why it works in some but not in others.

"With the refinement of adoptive T-cell therapy and reduction of potential significant side effects, this can offer hope for improvement of survival for patients with advanced cervical cancers," said Linus Chang, professor of obstetrics and gynecology at Icahn School of Medicine at Mount Sinai. Chang was not involved in the study.

Cervical [cancer](#) infects some 530,000 women each year and kills more than 270,000 around the globe, with most deaths occurring in the developing world, according to the World Health Organization.

Despite the rapid and complete responses that two of his patients have seen, Hinrichs said it is far too early to declare them cured.

But Wallace said she does not care about the terminology.

"You can't argue with the scans," she told AFP.

"It's not there and I feel good. I don't have to hear the word 'cure.'"

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