

West Nile threats continue

College Station, Houston areas affected by the virus

By Adam Reed
THE BATTALION

Although the West Nile virus gained national focus upon its entry into the eastern United States in late 1999 and Texas in 2002, the threat is still a concern to Texans, especially those in rural areas near Houston and College Station.

Many people are under the impression that mosquitoes remain dormant or move to a warmer climate during the colder winter months. However, the insects are always present, said Dr. Jim Olson, entomologist with the Texas Agricultural Experiment Station.

"We never run out of mosquitoes — at

least in this part of Texas — we just change species with the season," Olson said.

The Center for Disease Control is aware of at least one mosquito species that is able to survive the low winter temperatures.

"One of the species of mosquitoes found to carry West Nile virus is the Culex species, which survives through the winter, or 'overwinter,' in the adult stage," the CDC Web site explained.

Like the CDC, Olson is concerned about the Culex quinquefasciatus species, also known as the southern house mosquito.

"If it warms up — with all this standing water around — we could see an early rise of the southern house mosquito," he said. "The earlier those things start to show up, the earlier we see cycling of viruses like St. Louis encephalitis and West Nile."

This year's milder southern climates have provided a comfortable home for other species as well. Many are just now reaching their population peak in Central Texas and Southeast Texas because of the abnormally wet conditions in these regions. The black and white-striped Asian tiger mosquito, or Aedes albopictus, may also be on the rise because of these conditions, Olson said.

As soon as average temperatures surpass 60 degrees during the day and overnight, more spring-time mosquito species will arrive in the Houston and College Station areas. Entomologists anticipate the arrival of the summer species as temperatures climb into the 80s. Experts have observed a correlation between outbreaks of West Nile and other mosquito-borne viruses with the arrival of the bird-nesting season, and expect the same relationship this year.

"Nesting birds are a nursery for viruses like West Nile and St. Louis encephalitis in terms of ready access to mosquitoes that feed on birds, and transmission of the disease agents from birds to mosquitoes and back to birds," Olson said.

While the Culex species is predominantly a bird feeder, it may occasionally feed on humans, Olson said.

"But, it is more apt to feed on humans when they get inside a house where they don't have the option," he said. "So it's very important to keep mosquitoes outside where they belong."

To prevent mosquito threats, yellow-colored outside lighting is recommended instead of white or mercury-type bulbs, and residents should ensure that screens covering windows and doors are secure and without holes. Mosquitoes tend to congregate and breed near areas of standing water, so it is important to remove anything that may collect water.

Olson says regional precautions are already being taken, and experts are preparing for the worst to make sure they are prepared.

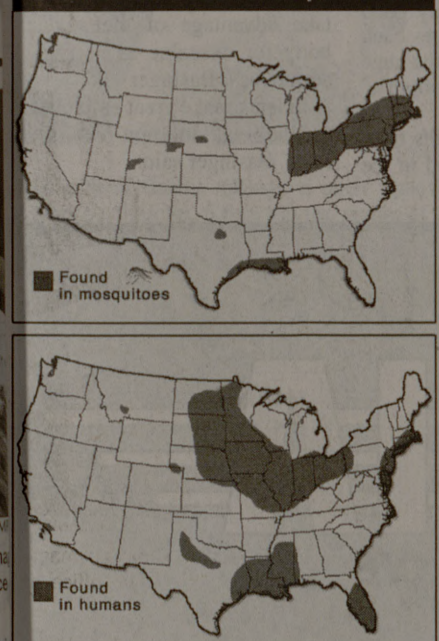
"We've got the virus now, so we're going to have to see how it builds up in the bird population and how it spreads from there," he said. "We really don't have a feel on just how much immunity we've got in the resident populations of birds, horses and humans from last year."

CDC director Dr. Julie Gerberding said national precautions are being taken in the form of pesticides, according to The Associated Press. The pesticides being used to limit the mosquito population pose no health threat to humans, she said.

"There are very, very few, if any, health consequences," she said. "Basically they're safe, and the risks they present are outweighed by the benefits of reducing the mosquito population."

The CDC offers additional helpful suggestions for protecting yourself and your property from the West Nile threat. For information on these precautions to protect humans and animals, visit the CDC Web site at <http://www.cdc.gov>.

West Nile Virus Map - 2002



SOURCE: U.S. GEOLOGICAL SURVEY
TRAVIS SWENSON • THE BATTALION

Smallpox vaccine used to fight cancer

By Lauran Neergaard
THE ASSOCIATED PRESS

WASHINGTON — The smallpox vaccine may be reborn as a cancer treatment.

Scientists are rigging up the vaccine to carry an extra load of genes that signal the immune system to start fighting advanced tumors.

Why use such a risky vaccine to do that job? The same super-reactive characteristics that make smallpox inoculation prone to some bad, occasionally deadly, side effects are, as the altered shots' creator puts it, "an immunologist's dream." They may rev up an immune system that too often misses cancer.

Although still in very early stages of research, the smallpox-turned-cancer shots look promising. They're the latest in a long quest to create immune-harnessing vaccines to attack cancer.

"We're not there yet," cautions Jeffrey Schlom of the National Cancer Institute, a specialist on cancer-treating vaccines who created the smallpox vaccine-based approach. "But we're getting there."

Despite the name, most so-called cancer vaccines don't aim to prevent tumors. These are not classic inoculations like the flu shot or even regular smallpox vaccine, which teach the body to recognize and subdue an invading virus or germ, preventing illness.

The immune system doesn't always recognize cancer as something to attack, because tumors are made up of your own cells gone bad, not foreign

Using smallpox vaccine to fight cancer

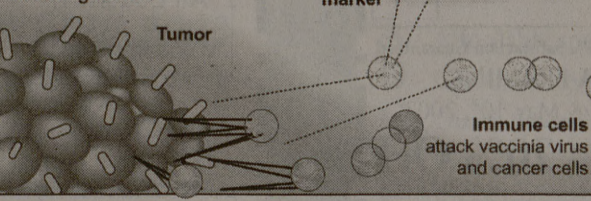
The body's immune system doesn't always spot cancer because tumors are made of the body's own cells, not foreign germs. Now scientists are using the smallpox vaccine in a treatment that causes the immune system to better recognize and attack cancer. Smallpox vaccine is made from the vaccinia virus, which is big enough to carry extra genes.

Vaccine injected

A gene that makes a marker called CEA is inserted into a weakened vaccinia virus. CEA is found on many cancer cells. In addition, three immune-boosting molecules are added.

The body responds

Heightened immune cells spot CEA inside the vaccinia, and begin to hunt it in other cells around the body, thus attacking tumors.



SOURCE: National Cancer Institute

Emily Brannan/AP

germs. The hope with therapeutic cancer vaccines is to train powerful immune-system T cells to more easily spot and attack malignant cells.

More than a dozen Phase 3 studies — of first-generation vaccines are under way. Most involve making patients custom shots using their own tumor cells mixed with immunity-boosting chemicals. Researchers frequently see a handful of people whose cancer dramatically shrinks, even disappears, for at least a while.

But those amazing responses are rare, because cancer adapts to treatments, says

NCI's Dr. Steven Rosenberg.

So scientists are trying to develop more elaborate, hopefully better, vaccines.

Enter smallpox vaccine. Schlom thought it could prove a good cancer-fighting platform because it's made with live vaccinia virus, a smallpox relative that's so large that adding different genes into it is fairly easy. Also, it's highly reactive, quickly causing a distinctive, infectious pustule that clearly signals a stimulated immune system.

Schlom took a vaccinia version engineered to be milder than today's smallpox vaccine, which can occasionally cause

deadly side effects. He added to it a gene that makes an antigen, or marker, called CEA that's found on many colon, pancreatic, lung and breast cancer cells. Because people become immune to vaccinia quickly, he created booster shots made with a less reactive vaccinia relative called fowlpox. And he added three immune-boosting molecules to the mix, calling it Tricom.

Injecting the altered smallpox vaccine plus boosters every few months significantly increased survival of half the patients in the first, small experiment at Georgetown University.

One patient saw her lung cancer disappear, and others who were expected to die within the year instead lived two years and counting.

Jeannette DuBose Williams of Alexandria, Va., is one of them. After three surgeries, radiation and chemotherapy, she had run out of options to battle advanced colon cancer that had spread into her pelvis. Today, after 2 1/2 years of Tricom shots, her cancer is still there — but it hasn't grown, and she feels healthy, spending her days golfing and visiting grandchildren.

"Cancer may be one thing you're not going to cure, but maybe you can keep it in check," says Williams, 72. "I don't know what this live virus is doing inside of me but ... I'm very grateful."

Small experiments at the Dana-Farber Cancer Institute and Columbia University also proved promising. Now Schlom hopes to begin Phase 3 studies in another year.

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