day • October 23 SCIENCE

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cientists develop cyanide exposure test

WORLEANS (AP) — Where there's e there's often cyanide but it kills so dy and the tests take so long that doctors check for it.

v scientists have developed a quick new cyanide exposure that could save some who now die of smoke inhalation.

test uses equipment already found in ospitals and yields results in 40 minutes, Avery Tung, the University of Chicago siologist who developed it. Doctors can minister cyanide antidotes that are either ed or injected.

ment tests for cyanide are all but useless. take up to four hours, and because most tals rely on an outside lab to perform it can take days and even weeks to actuet the results back.

ctors can't simply go ahead and adminthe antidote on the mere suspicion that a ant was exposed to cyanide. Unless there bstantial amount of cyanide to treat, the es themselves can kill.

g, who presented the test Tuesday at a in New Orleans of the American Soci-Anesthesiologists, eventually hopes to patest that can be performed at fires. ic, paint, varnish, lacquer, wool and silk release cyanide when burned. It kills by preventing cells from using oxygen.

"If cyanide is present, if you do not treat the cyanide poisoning itself, no matter how

much oxygen you give a patient he's not going to be able to use it," Dr. Paul Matera, an emergency room physician at Providence Hospital in Washington said in a telephone interview.

A study in England during the 1980s found cyanide in the blood of nearly half of the people suffering from carbon dioxide poisoning caused by smoke inhalation, said Dr. Larry Weiss, director of emergency medicine at Louisiana State University's Medical School.

Such tests are rarely ordered unless a doctor

knows that the fire burned something likely to release large amounts of cyanide.

'We don't usually test for it, because if you don't treat it immediately, it's too late," Weiss said.

Tung's test adds a chemical compound called methemoglobin to a blood sample. If there is cyanide in the blood, it changes color. A spectrophotometer reads the results to find out how much cyanide is in the blood.

Current tests are more complicated. One requires a series of three chemical reactions, Tung said. The other uses an expensive machine that measures electrical

conductivity in liquids. A quick, reliable cyanide test could make a big difference in test for it, because how patients are treated, Matera said.

"It's certainly something I would use, especially if a patient wasn't getting any better," he said. Tung said nearly all of his experiments have used blood to which he added cyanide. He said he also tried the test on a few cases of smoke inhalation, but the patients' cyanide levels were too

low to warrant treatment. Tung said he hopes to develop a strippeddown machine that ambulances could carry to fires. In addition, he said, he is working on a test that would check the amount of cyanide in a person's breath, instead of blood.

Such a test also could be used to check miners and factory workers who are likely to breathe small amounts of cyanide on the job, Tung said.

sulin pump to help diabetics stop injections

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TIMORE (AP) — A hockeyize insulin pump inserted the skin can help some diaavoid several-times-a-day ions, keep their weight and control their blood etter, researchers say

se the device, which is inin the abdomen, patients mselves a blood test to dehow much insulin is needm hold a small transmitter e pump to tell it how much er. The pump then dispensady trickle of insulin rather all-at-once dose.

manufacturer of the MiniMed Inc. of Sylmar,

Food and Drug Administration approval in late 1997.

MiniMed helped pay for the study, which was led by Dr. Christopher Saudek, chief of the Johns Hopkins Hospital diabetes center, and published in Wednesday's issue of the Journal of the American Medical Association.

Researchers studied 105 men with Type II diabetes at Veterans Affairs hospitals across the country. Half used the pump several times a day for a year; the other half gave themselves injections three times a day.

The incidence of insulin reactions, or hypoglycemia, was 68 percent lower among pump patients. Hypoglycemia, or low-blood sugar, occurs in diabetics when they receive too much insulin. It can cause panic and even coma.

Dr. William Duckworth of the Omaha VA Medical Center, co-author of the study, said the pump works better because it releases insulin slowly, without causing

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Calif., said it expects to receive the swings in blood sugar that an injection can cause.

"We don't usually

if you don't treat

it immediately,

Dr. Larry Weiss

Director, LSU emergency

medicine

it's too late."

Also, patients who received injections gained an average of .8 pounds, while pump patients lost an average of more than 2 pounds.

The researchers said that could be because the insulin reaches the liver more directly via the pump. Some scientists suspect that once injected into the bloodstream, some insulin is used by the body to store fat, and that contributes to weigh gain.

The pump is expected to cost about \$15,000 installed and must be refilled every six to 12 weeks at a doctor's office. Saudek serves on MiniMed's advisory board but has no financial stake in the companv, said MiniMed president and chief executive Terry Gregg. Type II diabetes, the most

common form of the disease, affects about 10 percent of the general population. Diabetics have difficulty processing sugar.

Although many Type II diabetics can control the disease by limiting

their sugar intake, about one third are treated with insulin, which they usually inject themselves, sometimes several times a day.

They often administer the injections just below the skin in the thigh, abdomen and the arm, varying the spot to prevent soreness. The insulin goes into the general bloodstream and eventually reaches the liver, which uses the insulin to process sugar.

One of the advantages of the pump is that the insulin is absorbed by blood vessels deep in the abdomen and reaches the liver faster, Saudek said.

Dr. Gerold Grodsky, a professor of biochemistry at the University of California at San Francisco who has studied insulin secretion for 35 years, said external pumps have proved to be a better method of controlling blood sugar levels.

The real breakthrough will come once implantable pumps can read blood levels and dispense insulin automatically, he said.

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you have any thoughts or concerns regarding student life are at A&M, I'm very interested in hearing them. I am alon Southerland, your Vice President for Student Affairs nd my office is on the 10th floor of Rudder Tower. My door always open and I encourage you to come by if I can ever of assistance. Feel free to call me anytime at 845-4728 contact me through e-mail:

malon-southerland@tamu.edu

Friday, Oct. 25, 1996 6:30-10:00 p.m. **292 MSC**

Questions? Call the APO office at 862-2525

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