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Doctors may have found a way to destroy HIV

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By Lee McGuire / KHOU-TV News



Video: Houston doctors may have found a way to destroy HIV



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HOUSTON -- There is real hope that what's happening in a Houston lab might lead to a cure for HIV.

"We have found an innovative way to kill the virus by finding this small region of HIV that is unchangeable," Dr. Sudhir Paul of the University of Texas Medical School at Houston said.

Dr. Paul and Dr. Miguel Escobar aren't talking about just suppressing HIV – they're talking about destroying it permanently by arming the immune system with a new weapon lab tests have shown to be effective.

Ford Stuart has been HIV positive for 15 years. He's on a powerful drug cocktail that keeps the disease in check.

"I'm on four different medications. Three of them are brand new, and it's the first time that I've ever been non-detectable," Stuart said. "I'm down to about – just for the HIV – about nine pills per day, five in the morning and four at night."

But Stuart knows HIV mutates, and eventually it will learn how to outsmart his medications.

"The virus is truly complex and has many tricks up its sleeve," Paul said.

But Dr. Paul thinks he's cracked a code.

"We've discovered the weak spot of HIV," he said.

Paul and his team have zeroed in on a section of a key protein in HIV's structure that does not mutate.

"The virus needs at least one constant region, and that is the essence of calling it the Achilles heel," Paul said.

That Achilles heel is the doctors' way in. They take advantage of it with something called an abzyme.

It's naturally produced by people, like lupus patients. When they applied that abzyme to the HIV virus, it permanently disarmed it.

"What we already have in our hand are the abzymes that we could be infusing into the human subjects with HIV infection, essentially to move the virus," Paul said.

Basically, their idea could be used to control the disease for people who already have it and prevent infection for those at risk.

The theory has held up in lab and animal testing. The next step is human trials.

Meanwhile, every day in Houston, three people are diagnosed with HIV.

The doctors still need funding to launch human trials. In the world of HIV research, that's often where things fall apart.

"Clinical trials are very expensive," Paul said.

"That is the worry of the researcher. This is what nightmares are made of – that after 30 years of work, you find it doesn't work," Paul said.

But so far, it is working.

"This is the holy grail of HIV research, to develop a preventative vaccine," Paul said.

"If we can get the viral loads down to a manageable level, that will preclude the need for these conventional drugs," Escobar said.

Still, even if everything goes well, it's at least five years before the research could help people with HIV.

The doctors know people like Ford Stuart are waiting.

"There are so many people struggling with the disease because it affects not only your body, but also your psyche, how you perceive yourself," he said.

If nothing else, the research is promising for the tens of millions waiting for a cure.