

Caution around 'HIV immunity' test

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HIV treatment activists today were expressing caution about a test being marketed by an American company which could detect whether a person is immune to HIV infection.

Independent Forensics, a company based in Illinois, is already the county's leading provider of DNA tests for criminal and paternity investigations, and also makes genetic tests for use by researchers into HIV.

The new 'CCR5 haplotype' test is a simplified, cheaper version of genetic tests that have been available to researchers for some time.

It measures a specific set of genetic variations in people that indicate whether a person with HIV is likely to be a fast, average or slow progressor – in other words whether, once infected with HIV, they will be likely to develop AIDS quickly or slowly.

The genes measured determine what kinds of the CCR5 co-receptor molecules people have on the surface of the cells that HIV likes to infect, including their CD4 cells.

These vary in their shape and number according to a person's genes. Some people have receptor molecules HIV loves to stick to, meaning their cells are easily infected. They are vulnerable to HIV infection and, once infected, may develop AIDS quickly.

Other people have CCR5 receptors that are difficult for HIV to use; this means they may be more resistant to infection and may develop AIDS more slowly.

In extreme cases they may be one of the 1-2% of people who are Long-Term Non-Progressors, people who seem able to control HIV without drugs over many years without it damaging their immune system.

This is how Independent Forensics is marketing the test; as a tool to help doctors determine if their patients are likely to get sick fast or slow, and as a guide to help them make treatment decisions.

But slipped into the company's website is the information that one genetic mutation the test can pick up is the so-called delta-32 delete mutation. If you have two copies of this gene (one each from your mum and dad) it means you have no CCR5 receptors at all.

And that means it is virtually impossible for you to be infected with HIV.

About 2% of people and 9% of people of white European origin have one copy of the CCR5 delta 32 gene – a single delete. This means they have fewer CCR5 receptors and will tend to progress to AIDS slowly.

Conversely almost no black Africans or east Asians have it.

There are theories that it may also confer a degree of immunity to smallpox or to bubonic plague, which is why it's there in the first place.

However about a tenth as many people have two copies of the gene. So an HIV negative person could take the test to find it they are among the lucky 1% who is immune to HIV.

It's not the sort of test you can do yourself – it has to be ordered by a doctor and performed by a genetics lab.

A press release from Independent Forensics released on Monday said that "results of the test can help individuals affected with HIV determine how quickly the virus will likely cause disease and, with a medical professional, decide how aggressive the treatment to pursue."

Jack Keehna, CEO of Independent Forensics, said: "We believe the CCR5 haplotype test is one of the most important things an individual with HIV can do to help in their treatment. It is part of our philosophy to 'know

thyselves, knowing your own genetic makeup will help everyone make informed and healthy life decisions.”

Treatment activists were cautious about the test and whether people would want to use it to find out if they were immune to HIV. Simon Collins of HIV i-Base said: “I’d want to know what they are looking at and how it has been validated.

“I’m not sure of the clinical use of this test, though I’m interested in the related research. If 1% of people shown a high degree of protection from HIV, then 99% of people using the test are paying a lot of money to get not much useful information.

“You will still need to make treatment decisions based on whether you get ill, and you could have other genetic factors that make you a faster progressor.”