Busybody. A new study suggests HSV-2, seen here as orange particles, is constantly active even when patients don’t have symptoms.

Credit: Dennis Kunkel Microscopy Inc./Visuals Unlimited, Inc.

Genital herpes comes and goes—at least that’s what it looks like to patients. But a mathematical model published in the 18 November issue of *Science Translational Medicine* suggests that herpes never slumbers. Instead, nerve cells continuously pump out the virus in minuscule quantities over a sufferer’s lifetime. If the findings hold, it may be much harder to stop patients from passing on the infection than researchers thought.

As many as one in five people is permanently infected with herpes simplex virus 2 (HSV-2), the most common cause of genital skin ulcers. The virus is transmitted during sex; after infection, it retreats into nerve cells that have their endings in the genital skin. HSV-2 causes no problems in up to 80% of those infected, but a minority suffers from blisters and sores once or twice a month. For decades, most scientists believed that the virus was simply "off" in the intervals between outbreaks, says William Halford, who studies herpes at Southern Illinois University School of Medicine in Springfield.

But that view has come under fire the past decade or so, as researchers showed that the virus is sometimes present in the genital skin even when no lesions are apparent. The new work, by infectious diseases researcher Lawrence Corey and his colleagues at the University of Washington and the Fred Hutchison Cancer Research Center, both in Seattle, goes even further.

Joshua Schiffer, a clinician and mathematical modeler in Corey’s group, constructed mathematical models from a large amount of virological and patient data—including the amount of virus present in the skin of patients who took four swabs daily for 60 days. This is what appears to be going on: Nerve cells shed tiny amounts of virus almost constantly inside the genital skin. Frequently, a virus will infect an epithelial cell, which compared with a nerve cells are “real virus factories,” says Schiffer: They produce massive amounts of virus that can infect other nearby epithelial cells and can presumably also infect sexual partners. In most cases, infected epithelial cells are quickly killed by CD8+ cells, a type of white blood cells; only occasionally does the infection overwhelm the immune system, resulting in a lesion.

"It’s impressive that they were able to build a model that makes sense of a large amount of clinical data," says Philip Krause, a herpes researcher at the U.S. Food and Drug Administration. "It’s a very thoughtful way of looking at the data." Halford says the paper should help dispel the notion, still supported by many herpes scientists, that the virus “does nothing” between clinical episodes.

The findings may also explain some properties of antiviruses drugs like acyclovir, says Schiffer. For instance, in a trial where herpes patients took acyclovir to prevent their partners from becoming infected, the drug was only 50% effective. If virus shedding never stops, these drugs have a much harder job, says Schiffer, especially compounds like acyclovir that quickly disappear from a patient’s body. To really prevent transmission, drugs would have to last longer or stop the shedding by the nerve cells, he adds—but that’s a tall order.
Mark
In January 2005 I found a technology (electrotherapy) to reach LATENT virus in sacral ganglion (for HSV-2) and nerve fiber. Several patients, using this, don't have outbreaks for 2 – 3 years. Success not always, but method actually works. Officials don't want to hear about this. I help people for free.
If anybody interested, my telephone 401-884-2017.
E-mail: gvizel@vtisp.com
Mark
Saturday, December 05, 2009, 3:49:34 AM – Flag – Like – Reply

momo
Thanks Christina Salter of Vancleave for your never ending gift.
Monday, November 23, 2009, 1:10:36 AM – Flag – Like – Reply
Liked by Guest

Sandra Saltzman (aol) - AAS member
What about "latent" virus or possibility of life long shedding of HSV1 among rare group of patients to suffer the unusually severe and rare once in a lifetime attack of "primary HSV1" on bucal mucosal surfaces?
Sunday, November 22, 2009, 7:32:24 PM – Flag – Like – Reply

german
we need inactivate a virus infective or not over a mucosal surface(genital or lips or simple skin), sodium hypoclorite at 500 ppm are in use for septic surfaces and is was use for war wounds (Crimea War, about 1835). It do not produce any bad efect in the patient and bacterial or virus resistance I never know to be posible.

Brian Mark Schwab, DMD
I'm wondering, do other "latent" viruses such as herpes zoster also act in this manner presented here?
Saturday, November 21, 2009, 6:03:16 PM – Flag – Like – Reply

John
"The presence of viral DNA does mean you are infected, but it doesn't necessarily mean you have an infectious particle there."

Rajah:
Interesting. So it is almost an article about nothing, or rather an article that contradicts itself. The virus may shed frequently, or demonstrate itself through this ultra-sensitive test, and yet it may not be infectious all of that time. Doesn't exactly sound ground breaking. Although, I suppose it indicates that people can be randomly tested via swab vs a blood test to determine if they are infected. Unless, of course, that type of testing is not cost effective.

To my last post, unless someone has an uncontrolled extreme level of outbreaks, I can't imagine that a daily regiment of antivirals (outside of Aids patients for the obvious life saving benefit) is good for patients or the public, in general. That is, if we have learned anything from resistance to antibiotics and "super-bugs" in the bacteria world, it is not wise to permit the virus to become stronger than the treatment.
Friday, November 20, 2009, 5:30:05 AM – Flag – Like – Reply
Liked by Guest

Rajah
Lewis, One key sentence in the article is "The presence of viral DNA does mean you are infected, but it doesn't necessarily mean you have an infectious particle there," PCR swabbing is VERY sensitive.

John, first, the antivirals are very safe with a long history. See also my above comment.
Friday, November 20, 2009, 12:33:32 AM – Flag – Like – Reply

John
What about HSV-1 on facial lips?

Sounds pretty frightening to take anti virals daily, as noted in the article. Maybe those people doing that for HSV-2 are putting themselves under unnecessary risk, if it isn't even effective.


lewis

I'm sorry, but how is this possible? If herpes is as easy to transmit as that, then why wouldn’t 100% of the population already have it? If 25% of people have it, and all of these people are having sex, then statistically it would be spreading like wildfire (pun probably intended). This doesn't really make any sense, sorry.

Thursday, November 19, 2009, 9:07:36 PM – Flag – Like – Reply

Liked by 3 Guests

Lila

by 100% of the population you mean also newborns and children who haven't attained 15?

Sunday, November 22, 2009, 12:41:29 PM – Flag – Like – Reply

Liked by 2 Guests

Guttermind

Actually, if you were to actually read the article, you'd realize that only 80-90% of the 25% infected actually show symptoms. It's possible to be infected and not know it, and what are the chances of someone who thinks they're not infected randomly going out and getting a blood test specifically for HSV-2?

It makes complete sense. Stop doubting Science because the thought of 1 in 4 people being infected isn't comfortable for you.

Dumbass.

Tuesday, December 15, 2009, 1:21:12 AM – Flag – Like – Reply

Mick

What about Genital HSV1. Does that do the same as in never sleeps?? or because the virus is not in it's home territory so to speak does it shed less and is active less?

Thursday, November 19, 2009, 1:21:41 PM – Flag – Like – Reply