

Herpes: Scientists find cellular process that fights virus

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Scientists have discovered a new way for our immune system to combat the elusive virus responsible for cold sores: Type 1 herpes simplex (HSV-1). As reported in the advance online edition of *Nature Immunology*, a group of virus hunters from the Université de Montréal, in collaboration with American colleagues, have identified a cellular process that seeks out and fights herpes.

The five-year study, partially supported by the Canadian Institutes of Health Research, was a joint project with Washington University and Pennsylvania State University.

"Once human cells are infected with Type 1 [herpes simplex](#), the [virus](#) comes back because it hides and blocks protection from our [immune system](#)," says Luc English, the study's lead author and a doctoral student at the Université de Montréal's Department of Pathology and Cell Biology. "For the first time, our research team has indentified a combative cellular mechanism in this game of hide-and-seek."

"We've found that the nuclear membrane of an infected cell can unmask Type 1 [herpes simplex](#) and stimulate the immune system to disintegrate the virus," says English.

The team made its discovery while conducting various tests in HSV-1 infected mice cells. They replicated environments when Type 1 herpes simplex thrives, namely periods of low-grade fever between 38.5 to 39 degrees, and found that herpes-fighting mechanisms were unleashed.

The research team now plans to study how activation of the herpes-combating [cellular process](#) could be applied to other illnesses. The outcome could hasten the development of therapies to prevent other immune-evading bacteria, parasites and viruses. "Our goal is to further study the molecules implicated in this mechanism to eventually develop therapies against diseases

such as HIV or even cancer," says English.

According to Dr. Michel Desjardins, senior author and a professor in the Department of Pathology and Cell Biology at the Université de Montréal, treatment options might be imaginable in a decade.

"Now that we've identified the novel mechanism in cells that activate immune response to Type 1 herpes simplex, scientists are one step closer to creating new treatments that can activate the defence against this and other viruses," says Dr. Desjardins. "While it may not be possible to completely eradicate Type 1 herpes simplex in people who are already infected, at the very least, future therapies may be able to keep the virus in its dormant state."

More information: [Nature Immunology: www.nature.com/ni/index.html](#)

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