**McMaster researchers fighting cancer with viruses**

By Adam Carter, [CBC News](http://www.cbc.ca/news/credit.html) Posted: Oct 11, 2012 2:06 PM ET

Tumor, meet virus — your new enemy.

Bolstered by a donation announced Thursday by the Terry Fox Foundation, McMaster researchers are now part of a nation-wide team that's studying how viruses could be used to treat different types of cancer.

“This is a huge deal for cancer research,” said Dr. Johnathan Bramson, director at the McMaster Immunology Research Centre.

“This could revolutionize patient care.”

When healthy cells divide and replicate to become a body part, the body introduces blocks to tell them when they're “finished.” So when heart cells finish forming a heart, they stop replicating.

Not so with tumors. They overcome our internal regulation and continue to grow and spread uncontrolled.

That's where a virus comes in. It takes over the machinery of cancerous cells and essentially converts them into a virus production factory.

“These viruses get into a tumor and reproduce because the blocks that exist in healthy cells aren't there,” Bramson said.

“It exploits the biology of the cancer. The changes that make it grow render it susceptible to these viruses.”

Essentially, the virus kills the cancerous cells creating its “production factory,” then it's taken out by the body's antibodies. And while the virus will enter healthy cells, it quickly gets shut down, Bramson says.

“The virus tries to take over normal cells, but it can't,” Bramson said. “The body essentially chews it up and spits it out.”

McMaster is receiving almost $2 million over five years for the project. It's being headed up by a team from the University of Ottawa, and also includes schools like McGill in Montreal, Dalhousie in Halifax, and the Genome Sciences Centre in Vancouver.

Combined, the Terry Fox Foundation is pledging $13.4 million to the project.

"We are fortunate to have these teams conducting their work in Canada as a result of funds raised under the Terry Fox name," said Fred Fox, the manager of supporter relations for The Terry Fox Foundation in a statement.

"For 32 years, our volunteers and donors have made it possible for Canada's best researchers to play an important role nationally and internationally in moving forward in understanding, diagnosing and treating this disease.”

With this kind of funding in place, the McMaster team will be looking to “find the nuances of the viruses and how to capitalize on them,” Bramson said.

They'll be matching “virus needs” to specific types of tumors, much like how doctors tailor chemotherapy to specific types of cancer.

Human trials have already started. McMaster is in “phase one,” where people receive a single dose of the virus just to make sure it's tolerable.

“And nothing weird happened and no one got sick,” Bramson said.

In fact, in some cases, patients' late-stage tumors stabilized, he said.

Because human trials are already well underway, answers as to how viable this treatment could be will be available in years, not decades.

“These things are now,” Bramson said. “They're not tomorrow.”

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Discuss how what you have learned, about cell division and cancer, may have helped you better understand this article.