Ion beams might one day fight cancer tumors

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Nonsurgical cancer therapy that destroys tumors but leaves healthy surrounding tissue intact could be available at every hospital if research reported this week in the journal *Nature* eventually comes to fruition.

The Los Alamos National Laboratory Trident laser team, in collaboration with researchers from the University of Nevada, Reno and elsewhere, has succeeded in concentrating the intensity of a laser-driven carbon ion beam into a narrow range.

This work builds upon past research led by the University of Nevada that discovered much higher quality laser proton beams from laser acceleration as opposed to conventional particle acceleration.

Producing carbon ion beams and limiting their spread removes the major impediment to improving such applications as tumor irradiation therapy.

Many technological challenges still have to be met to develop a compact particle generator that could be used in a hospital setting. No clinical trials are imminent.

This research also opens up opportunities for advances in nuclear fusion applications.

The article, "Laser acceleration of monenergetic MeV ion beams," will be published Jan. 26. This research was supported by the Los Alamos National Laboratory Directed Research and Development program. The University of Nevada was also supported by the Department of Energy's

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Source: University of Nevada, Reno