Carbon Ion Therapy: Why This Cancer Treatment Isn't Available in the U.S.

Thousands of people around the world have already received the promising new therapy.

September 4, 2019 By Casey Halter

A promising alternative to traditional radiation therapy for cancer is being used on patients around the world, but most people in the United States still can't access it. A recent article in Wired explains what carbon ion therapy is and why it's still largely unavailable in U.S. hospitals.

Carbon ion therapy is a new form of radiation that, like its predecessors, fights cancer by damaging the DNA in tumors to the point of destroying them. However, unlike older forms of radiation, which often damage the body's normal tissue as they enter and exit the body, carbon ion therapy causes minimal harm to surrounding tissue. The technique also works against tumors resistant to X-ray treatment, and studies suggest it may also trigger an immune response against cancer.

Those benefits combined could up the odds of beating cancer—especially for hard-to-treat tumors such as those located at the base of the skull and the mouth's upper palette as well as tumors in young children. In fact, around the world, the treatment is often considered to be the next frontier in cancer care. About 22,000 people have already received it at 13 carbon ion centers in Germany, Austria, Italy, Japan and China. But the therapy has yet to be adopted in the United States—despite having been originally developed in California.

The problem, according to Wired, is that American researchers have been unable to raise enough federal money to build the centers or enough private backing to research the new radiation therapy. Instead, the United States is doubling down on a related approach known as proton beam therapy, which also uses highly charged particles and offers somewhat similar benefits. However, since carbon ions are heavier, researchers say they have the potential to deliver even more cancer-killing power than protons do. Carbon centers also have reported impressive survival rates, though researchers say it's still too early to tell which one is better.

Another problem is how research on carbon ion therapy has been conducted thus far. In the United States, most high-quality studies require patients to be randomly assigned to treatments. But most of the existing studies—conducted in Japan, China and Europe—researchers made that selection. The lack of carbon ion centers (which cost up to $300 million, compared with $200 million for proton beam centers) has also stymied U.S. research.

So are Americans missing out on the next big thing in cancer treatment? Possibly. Which is why this year, researchers at the University of Texas Southwestern Medical Center hope to be the first to conduct a Phase III clinical trial of carbon ion therapy that will include patients with pancreatic cancer from the United States, Japan, Germany and Italy.

“This kind of trial has never been done anywhere in the world,” said Hak Choy, MD, chair of radiation oncology at the university, who designed the study. “The assumption is that we will double the survival time, based on data from Japan.”

If successful, the study could pave the way for Americans to be able to access carbon ion therapy.

To read the full WIRED article about carbon ion therapy, click here.

For further reading, check out “The Next Frontiers in Cancer Therapies”

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.cancerhealth.com/article/carbon-ion-therapy-cancer-treatment-available-us