

# Proton Beam Therapy Use For Cancer Increases—But So Do Racial Disparities

Black patients continue to benefit less from advances in medicine like proton beam therapy, even with increased availability.

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Two new large studies led by researchers at the [American Cancer Society](#) (ACS) show an increase in the use of proton beam therapy (PBT) for patients with cancer in the United States during the past decade. However, Black patients were less likely to receive PBT than white patients, and the racial disparity increased over time. The studies were published in JAMA Network Open.

“We found that PBT use increased nationally between 2004 and 2018 for all eligible cancers, especially for cancers for which PBT is the recommended radiation treatment,” said [Dr. Leticia Nogueira](#), senior principal scientist, health services research at the American Cancer Society and lead author of both studies. “Especially concerning; however, was our findings also showed racial disparities increased as availability of PBT increased in the U.S.”

PBT is a form of [radiation treatment](#) used to destroy tumor cells. Instead of using traditional photon-based radiation treatment, it uses protons to send beams of high energy that can more precisely target tumors and decrease damage to surrounding healthy tissue. PBT is potentially superior to photon-based radiation therapy for tumors with complex anatomy, tumors surrounded by sensitive tissues, and childhood cancers. PBT can be double the cost of traditional photon-based radiation therapy.

For both studies, researchers used the National Cancer Database, a hospital-based cancer registry jointly sponsored by the American College of Surgeons and the ACS. This database includes over 1,500 facilities accredited by the Commission on Cancer and collects treatment information on over 70% of individuals diagnosed with cancer in the U.S. To evaluate patterns of PBT, data was analyzed using the American Society for Radiation Oncology (ASTRO) policies - which lists cancers for which PBT is the recommended treatment modality and cancers for which PBT is still being evaluated.

Of nearly six million patients analyzed, the use of PBT in the U.S. increased overall for newly diagnosed cancers from 0.4% in 2004 to 1.2% in 2018. Private health insurance was the most common insurance type among patients for which PBT was the recommended radiation treatment, while Medicare was the most common insurance type among patients treated with PBT for cancers

for which its efficacy is still under investigation.

Researchers also found Black patients were less likely to be treated with PBT than White patients (0.3% vs. 0.5%), especially for cancers for which PBT is recommended over photon-based radiation therapy. Importantly, the racial disparity in receipt of PBT increased as the number of facilities offering PBT in the US increased, and this disparity was not eliminated after additional matching on socio-economic status or health insurance coverage type.

“Our findings, unfortunately, highlight the fact that Black patients continue to benefit less from advances in medicine like PBT, even with increased availability of recommended treatment modalities,” added Dr. Nogueira. “Efforts other than increasing the number of facilities that provide PBT will be needed to eliminate these disparities.”

Resources from the American Cancer Society to address racial disparities in cancer care can be found [here](#).

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