

# IMRT has less harmful rectal side effects than 3D-CRT for prostate cancer patients

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Men with localized prostate cancer treated with a newer technology, intensity modulated radiation therapy (IMRT), have more than a quarter (26 percent) fewer late bowel and rectal side effects and a statistically improved lower dose of radiation to the bladder and rectum, compared to those who undergo 3D-CRT, according to a randomized study presented at the plenary session October 3, 2011, at the 53rd Annual Meeting of the American Society for Radiation Oncology (ASTRO).

Findings also show there is a significant increase (15 percent) in rectal side effects associated with white men, compared to other races, regardless of the [radiation treatment](#).

"The racial differences were definitely surprising and we are still unsure as to why this exists," Jeff Michalski, MD, a [radiation oncologist](#) at Washington University Medical Center in St. Louis, said. "While it could be a real difference in the tolerance to treatment, it could also represent cultural differences in reporting side effects and physician interpretation of patient descriptions. This will be the topic of further investigation."

Three-dimensional conformal radiation therapy, or 3D-CRT, is a type of [external beam radiation](#) therapy that uses computers and special imaging techniques to precisely tailor the radiation beams so that nearby normal tissue receives less radiation and is able to heal more quickly. [Intensity modulated radiation therapy](#), or IMRT, is a newer, specialized form of 3D-CRT that allows radiation to be more exactly shaped to fit the tumor and further limits the amount of radiation received by healthy tissue near the tumor. This may also safely allow a higher dose of radiation to be delivered to the tumor, potentially increasing the chance of a cure.

This study is a preliminary analysis of acute and late toxicity in men receiving high dose radiation therapy on a phase III [Radiation Therapy Oncology](#) Group (RTOG) dose-escalation trial. Researchers

sought to compare the toxicity rates of high dose radiation therapy to standard [dose radiation](#) treatment, using IMRT and 3D-CRT. The toxicities were scored from the grade of zero (no toxicity) to four (severe toxicity). The study also examined what patient characteristics might be associated with toxicity.

The study involved 748 men who were randomized to the high dose arm of the trial. Of this group, 491 were treated with 3D-CRT and 257 with IMRT.

Findings show that IMRT is associated with a statistically significant decrease in acute Grade 2+ rectal/bowel and urinary toxicity. There was also a trend for a 26 percent reduction in Grade 2+ late rectal and bowel side effects. "This study supports the continued use of IMRT in the management of prostate cancer. It is a safe and very well-tolerated therapy with fewer complications than 3D-CRT," Michalski said.

**More information:** For more information on radiation therapy for prostate cancer, visit [www.rtnswers.org/treatmentinf ...cancertypes/prostate](http://www.rtnswers.org/treatmentinf...cancertypes/prostate)

Provided by American Society for Radiation Oncology

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