

Medical physicist consults with patients can help reduce anxiety and increase satisfaction with radiation care

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Meeting with a medical physicist who can explain how radiation therapy is planned and delivered reduces patient anxiety and increases patient

satisfaction throughout the treatment process, according to a new study published today in the *International Journal of Radiation Oncology, Biology, Physics*. Findings of the randomized, prospective phase III clinical trial also will be presented at the American Society for Radiation Oncology (ASTRO) Annual Meeting.

"This study is a wake-up call for medical physicists that there are new ways we can add value to patient care," said Todd F. Atwood, Ph.D., lead author of the study and an associate professor and Senior Associate Division Director of Transformational Clinical Physics at the University of California, San Diego. "It illustrates how care teams can partner more effectively with patients as they make their [treatment decisions](#) and navigate the radiation therapy process."

Medical physicists work with radiation oncologists to ensure complex treatment plans are properly tailored to each patient. They also develop and direct quality control programs to make sure treatments are delivered safely, including performing safety tests on the equipment used in a patient's treatment.

The new findings suggest that medical physicists also can supplement patient education and potentially improve patient outcomes by reducing patients' treatment-related stress. "Patients increasingly want to be more involved with their care," said Dr. Atwood. "They are looking for more information. Typically, they start by searching online, but what they're finding is either non-specific or just too complex. They have unanswered questions, which often lead to confusion, stress and [anxiety](#)."

Prior studies have shown patient-related stress can negatively impact outcomes after radiation therapy. Dr. Atwood and his colleagues hope that by reducing stress and anxiety related to their treatment, this approach may also contribute to better patient outcomes.

In this study, researchers randomized 66 patients seeking external beam radiation therapy into two treatment arms: one that would receive Physics Direct Patient Care (PDPC) prior to—and throughout—radiation treatment, and one that did not receive PDPC radiation therapy. Patients had different types of primary cancer, most commonly breast, gynecologic or prostate cancer, and most were receiving radiation therapy for the first time.

In addition to traditional care, during which patients only discuss their treatment with their radiation oncologist, the PDPC group received two consultations prior to treatment with a medical physicist who explained the technical aspects of their care—how treatment is planned and delivered, how the [radiation therapy](#) technology works and "everything that goes into keeping them safe during treatment," said Dr. Atwood. The medical physicist remained a resource for patients if additional questions arose at any point throughout the treatment process.

Before interacting with patients, the five medical physicists participating in the study completed a patient communication training program that included [radiation](#) oncology specific lectures, role playing exercises, simulated patient interactions and analysis, and supervised physician-patient consults that included an analysis of those interactions.

Changes in treatment-related anxiety, overall satisfaction with treatment and satisfaction with their understanding of the technical aspects of care were measured over the course of treatment using patient-reported questionnaires.

Patients who received medical physicist consults had significant improvements in anxiety and both satisfaction metrics, compared to those who received treatment without the additional consults. Anxiety did not differ between the groups at baseline or following the simulation appointment, but it was lower, on average, for patients who got the

medical physicist consults after the first treatment (30.2 vs. 37.6, on a 60-point inventory, $p=0.027$). By the end of treatment, however, the difference in average anxiety scores was no longer significant.

To look more deeply at differences in anxiety between the groups, researchers looked specifically at the number of patients who reported high anxiety levels throughout treatment. While there were no significant differences in the proportion of high-anxiety patients at baseline, after the simulation appointment or after the first treatment, a substantial difference emerged by the end of treatment (12.5% vs. 38.9% reporting high anxiety, $p=0.047$).

While the consults were beneficial for patients generally, Dr. Atwood said they may be particularly useful to patients who are more prone to anxiety. Among those receiving the additional consults, over the course of treatment, the percentage of patients reporting high anxiety levels dropped by more than half, from 31.3% to 12.5%.

The greatest difference between the groups was seen in how satisfied patients were with their understanding of the technical aspects of their care. While there was no difference between the groups at baseline, the group that received an additional consult at the simulation appointment immediately expressed greater satisfaction with their technical understanding of care (6.2 vs. 5.1 on a 7-point scale, $p=0.005$). Technical satisfaction scores climbed for both groups throughout treatment, but they remained significantly higher for patients receiving additional consults, reaching 6.6 out of seven for that group, compared to 5.5 for the standard care group ($p=0.002$).

Overall satisfaction was also significantly higher after the first treatment for patients who received physics consults (6.7 vs. 6.0 on a 7-point scale, $p=0.014$). While satisfaction rose for both groups following the first treatment, it remained significantly higher for the consult group until the

end of treatment (6.9 vs. 6.2, $p=0.001$).

Dr. Atwood said he was excited to see how long the benefits of supplemental consultation endured. "It has a lasting impact," he said. "We've thought medical physics consults had great potential for years, but now we have a clearer understanding of how they positively impact the patient experience."

While other members of the care team could also be called upon to provide patients with a deeper understanding of their care, Dr. Atwood said he believes medical physicists were uniquely suited to the role because they were so familiar with the science driving the technology being used.

"People don't realize how personalized this therapy actually is. Medical physicists work behind the scenes to make sure this personalized treatment is both safe and effective. Our study indicates that there also can be a patient-facing role that will allow medical physicists to add more value to the patient experience" he said.

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Provided by American Society for Radiation Oncology

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