

# PET imaging response a prognostic factor after thoracic radiation therapy for lung cancer

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A rapid decline in metabolic activity on a PET scan after radiation therapy for non-small cell lung cancer is correlated with good local tumor control, according to a study presented by researchers at Thomas Jefferson University Hospital at the 51st ASTRO Annual Meeting.

In addition, the researchers also found that the higher the metabolic activity and [tumor](#) size on a [PET scan](#) before treatment, the more likely a patient is to die from lung cancer.

"PET scanning is an emerging tool of molecular imaging in lung cancer, in contrast to CT scans and MRI scans which are anatomic imaging," said Maria Werner-Wasik, associate professor of Radiation Oncology at Jefferson Medical College of Thomas Jefferson University, and the study's lead author. "It has become an important tool in the evaluation of lung cancer staging and evaluation of treatment response."

Dr. Werner-Wasik and colleagues conducted a retrospective analysis of 50 patients with [lung cancer](#) who received PET imaging before and after radiation therapy. They analyzed the prognostic factors for tumor local failure. They measured the [metabolic activity](#) using the maximum Standardized Uptake Value (mSUV). They also measured the tumor size, or the Metabolic Tumor Volume.

The risk of local failure decreased for each unit decline in mSUV by the

first post-therapy scan. When compared to the pre-therapy PET scan, the mSUV of the primary tumor declined by 72 percent in the by the first post-therapy scan, 76 percent by the second scan and 77 percent by the third scan. Nineteen patients achieved a metabolic complete response at the median time of 10.6 months. Eight patients suffered local failure. Other factors significantly associated with increased local failure included female gender, stage IV disease and large tumor size.

Source: Thomas Jefferson University ([news](#) : [web](#))

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