

# Surgery beats targeted radiation for patients battling early stage lung cancer

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More patients are choosing radiation therapy over surgery to treat their

early-stage lung cancer, but a new study argues they might be making a mistake.

People who are good surgical candidates for [lung cancer](#) appear to have a five-year survival rate that's 15 percentage points lower if they opt to have [radiation treatment](#) instead, according to [findings](#) presented Monday at a meeting of the American Association for Thoracic Surgery, in Los Angeles.

"It seems like surgical patients get a real benefit in [long-term survival](#), and you see a real separation in the survival curve after two years," said lead researcher [Dr. Brooks Udelsman](#), a [cardiothoracic surgeon](#) with Yale School of Medicine. "If you have a patient who is expected to live more than two years, they're probably going to benefit from the surgery."

For the study, researchers analyzed data from the National Cancer Database on more than 30,000 non-small-cell [lung](#) cancer patients who were diagnosed and treated between 2012 and 2018.

The data included about 24,700 patients whose tumors were surgically removed and nearly 6,000 who underwent targeted stereotactic body [radiation](#) therapy (SBRT). SBRT targets small tumors with large radiation doses without damaging healthy tissue and organs nearby.

The percentage of early-stage lung cancer patients who receive targeted radiation therapy instead of surgery amounted to 26% in 2018, up from 16% in 2012, Udelsman said.

It's not surprising that some would choose radiation over surgery, because it's an easier option, he said.

SBRT for early-stage lung cancer usually involves three to five treatments over the course of a week, while a person could be laid up in

the hospital for days and in pain for weeks after surgery, Udelsman said.

"Surgery requires some time in the hospital, and there's some pain associated with it," Udelsman said. "The radiotherapy is a little bit more convenient. You don't have to be hospitalized. There's almost no pain associated with it."

Cleveland Clinic radiation oncologist [Dr. Gregory Videtic](#) agreed that the comparative ease of radiation therapy prompts more patients to choose SBRT over surgery.

He offered the example of a man in his 50s who was in line to have surgery for his lung cancer, until he found out the surgery would be more invasive than expected because he'd already had [heart surgery](#). The patient weighed his options and went with radiation therapy.

"I have to tell you, the first thought in their mind is, if I don't have to get cut open and go in the hospital, nothing else matters, right?" Videtic said. "The rise in SBRT is actually not driven by the radiation oncologists. I actually think it's the patients who are like, gosh, who wants to get operated on?"

Both options are equally good in terms of short-term survival, the new data showed. Three months after treatment, about 97% of [surgical patients](#) are still alive compared with 98% of radiation therapy patients.

But the overall five-year survival rates between the two groups are very different, according to the new study—71% for people treated with surgery versus 42% for those who received radiation.

However, that difference could be because people who receive radiation therapy are too frail or sick to undergo surgery, and therefore, are more likely to die for any reason.

So the researchers tightened their focus to 528 patients who were healthy enough to be offered surgery and specifically refused it, instead going with radiation therapy.

Those patients also had a lower five-year survival rate compared to those who got surgery, 56% versus 71%.

"Radiotherapy has usually been reserved for patients who couldn't tolerate surgery, who are too frail, too sick, whatever reason," Udelsman said. "But we've seen this growing number of patients who would be good operative candidates elect to get radiotherapy instead. We understand that there's a convenience to it and it's less scary, but there is a disadvantage in long-term survival."

Surgery's survival advantage over radiation therapy persisted regardless of the type of procedure, researchers found—73% for removal of an entire lobe of the lung; 72% for removing part of a lobe; and 62% for removing a small, wedge-shaped piece of lung tissue—compared to 42% for radiation treatment.

"We really should caution patients before they elect to undergo radiotherapy that there is some disadvantage down the road, and that surgery is a pretty safe option," Udelsman said. "I do think it's a little concerning that we're now seeing about 25% of patients who would otherwise be good operative candidates undergoing radiotherapy rather than surgery. That's a pretty high number—1 in 4 are electing for what looks like a treatment that's not as good."

But the matter might not be as clear-cut as that, said [Dr. Kenneth Rosenzweig](#), chairman of radiation oncology for Mount Sinai Health System in New York City.

There are many reasons why a person who seems a good surgical

candidate might choose radiation instead, including some that would lower their long-term survival odds regardless of the [therapy](#) chosen, Rosenzweig said.

"The decision by a patient whether or not to undergo surgery is a very complex psychosocial decision," Rosenzweig said. "Is it documented that the patient refused surgery because the surgeon gave a very discouraging view of the postoperative state the patient would be in? Or is it a patient who was an excellent surgical candidate and against [medical advice](#) chose not to have surgery? Both of those people would be in the same category of refusing surgery, but might represent two vastly different clinical situations."

Videtic agreed with Rosenzweig that the national data used in this study contains too many uncontrolled variables that could affect the outcome, including differences in patients' overall health and the specific circumstances of their lung cancer.

"In this setting, where you have confounders in terms of who these patients are and what are their actual medical comorbidities, there's no way of measuring what the competing risks are for these patients," Videtic said. "Independent of whether or not a person says they're healthy or refuses a surgeon, you don't know what the other factors are with these patients that might lead to their death."

Instead, the final answer to surgery versus radiation will be answered by ongoing clinical trials that are directly comparing [surgery](#) to [radiation therapy](#) in early-stage lung cancer [patients](#), Videtic said.

Two such trials are in now progress, he said, and the results should be out within a couple of years.

"Those will answer the question," Videtic said. "All these retrospective

studies will basically fall by the wayside once the results of those trials come out. And if it turns out that one of them is superior to the other, I don't have a problem with that."

Findings presented at medical meetings are considered preliminary until published in a peer-reviewed journal.

**More information:** The American Cancer Society has more about [treating non-small cell lung cancer](#).

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