How Unusual is “Big Bang Theory” Actress Kate Micucci’s Lung Cancer?

Colorado University Cancer Center’s Tejas Patil, MD, says lung cancer in people who have never smoked is more common than you think.

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Actress and musician Kate Micucci, best known for her role as Lucy on CBS sitcom The Big Bang Theory, recently underwent surgery for lung cancer.

Micucci, 43, revealed the news on TikTok on December 8, explaining that the diagnosis surprised her, since she has never smoked, and that she was fortunate that the cancer was caught early.

“Hey everybody, this is not a TikTok, it’s a ‘Sick Tok,’” she said in the post. “I’m in the hospital, but it’s because I had lung cancer surgery yesterday. They caught it really early.

“It’s really weird, because I’ve never smoked a cigarette in my life,” Micucci said. “So, you know, it was a surprise. But also I guess, it happens and the greatest news is they caught it early, they got it out, I’m all good.”

According to University of Colorado Cancer Center member Tejas Patil, MD, assistant professor of Medical Oncology in the CU Department of Medicine, around 20% of people diagnosed with lung cancer have never smoked, and researchers are still working to understand how they get the disease.

Micucci posted about her lung cancer on Instagram:

Micucci also said that an abnormal result in her bloodwork prompted doctors to perform a scan of her heart, which is when the spot on her lung was first observed. This type of “incidental diagnosis,” Patil says, is a common occurrence in younger people and those who have never smoked.

We talked more with Patil about lung cancer screening, treatment and diagnosis.

In general, how common is lung cancer?

In men and women, it is the second most common cancer and the most common cause of cancer death.

How common is it in people who have never smoked?

Around 15% to 20% of patients who get lung cancer have never smoked a cigarette in their life. A story like Kate Micucci’s — “I never smoked, but I got lung cancer” — is way more common than people suspect. One of the tragedies of circumstances like this is that patients who never smoke tend to show up to the doctor with metastatic disease.

Micucci is 43; is that relatively young for a lung cancer diagnosis?

Lung cancer patients who never smoked tend to be younger and tend to be women, so that is fairly common.

What are other causes of lung cancer, besides smoking?

We don’t have a good grasp of why people who never smoke get lung cancer. It’s one of the big

unanswered questions in the field, and we need to do more research in that space. Air pollution has been linked to increased risk of lung cancer — that's something we've been paying more attention to recently. Other factors that increase the risk of lung cancer are patients who've had solid organ transplants receiving immunosuppression or people who are living with chronic HIV.

In Micucci's case, the cancer was caught early and she was able to have surgery to remove it. Is that the ideal scenario?

That's exactly what you want, but it is important to note that her cancer was discovered incidentally. They didn't go in looking for it, and she may not have had any symptoms.

Is there a screening for lung cancer?

There is, but right now it's for patients who are or were heavy smokers. The American Cancer Society recently updated its guidelines for who should be screened — it is now recommended annually for people aged 50 to 80 years old who smoke or formerly smoked and have a 20-year or greater pack-year history. The screening test is called a low-dose computed tomography (CT) scan, to look for nodules.

How long does that scan take to perform?

You can be in and out in five minutes. Checking into the radiology suite takes longer, but the actual scan itself is fast.

How is lung cancer typically diagnosed?

Usually patients develop symptoms that lead them to medical attention. Once lung cancer is suspected, the medical team will order imaging (such as CT scans or an MRI) to help figure out how far the cancer has spread. That's step one. Step two is getting a biopsy to confirm the type of lung cancer. There are many ways we can do that, and generally, we go for the safest location that can give us a clear answer.

What are the common symptoms of lung cancer?

Among the most common are shortness of breath, a persistent cough, voice changes, and unexplained weight loss.

Why don't we test everyone for lung cancer the way we do for colon cancer or breast cancer?

This gets at the question of, "What is the risk for an average 43-year-old?" There are cases like Micucci's, where a 43-year-old woman gets lung cancer, but the reality is, when you're thinking about this on a population level and trying to figure out how to get the most bang for your buck, having everyone get a low-dose CT scan would bankrupt Medicare within years. We must make some big, important choices about who is at the highest risk, and it remains the case that a patient with a smoking history is at a substantially higher risk of getting lung cancer than someone

who’s a never-smoker. We haven’t quite figured out how to thread the needle for never-smokers; it’s an unmet need. Maybe we can come up with a better screening test that’s less expensive than a CT scan, but we’re not there yet.

What is the treatment for lung cancer? Have there been any developments in the past few years?

There’s a lot happening in lung cancer. Most patients now should get biomarker testing, because there are about 10 or so mutations that we’ve identified that are susceptible to targeted therapies. These are targeted treatments that typically come in the form of pills, but they only work if you have the right mutation. The other big advance in lung cancer is using immunotherapy, which leverages your own immune system to fight cancer. There’s still a role for chemotherapy, but in the modern era, chemotherapy isn’t the only treatment option. Most patients now are either going to get chemotherapy with immune therapy, or they’re going to get targeted therapy.

Where does surgery fall on the treatment spectrum? Micucci posted that she had surgery to treat her lung cancer.

Surgery only makes sense if someone has early-stage cancer. Once the cancer has spread outside the chest, surgery is usually no longer on the table.

What’s the most important thing you can do to protect yourself from lung cancer?

Not smoking. That’s the single most important thing people can do. And if you do smoke, stop smoking.

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