NINA MOINI: For decades, the coal mining industry has been reckoning with a disease called black lung. Now, a similar condition is disabling and even killing workers who cut artificial stone for trendy quartz countertops and backsplashes. It's called silicosis, and you get it by breathing in tiny crystals of a mineral called silica.

The nation's largest manufacturer of artificial stone is Cambria, which is based in Minnesota. But California is the epicenter of cases in the US. And regulators in that state could soon ban the making of these products. Joining me to help explain this is Dr. Sheiphali Gandhi. She leads the California Silicosis Support and Research Network at the University of California, San Francisco. Welcome to the program.

SHEIPHALI GANDHI: Thank you for inviting me today.

NINA MOINI: Dr. Gandhi, I understand you did your residency here in Minnesota. You also did some work in Chicago on black lung in coal miners. How are the silicosis cases that you're seeing from artificial stone workers similar and/or different from black lung?

SHEIPHALI GANDHI: Thank you. That's a great question. So what we're seeing in our silicosis patients is that the symptoms. And the radiology is very similar to black lung, though the exposure is a little different than traditional black lung in that it's almost pure silica exposure in the countertops. Whereas black lung is like a mixed dust exposure generally.

One thing that's very unique in this population that we're seeing in California, and actually in other parts of the US as well, is that it's predominantly immigrant population and quite young. So many are getting diagnosed in their 30s and 40s, but we're seeing workers being diagnosed as young as their 20s with very short number of years of exposure.

NINA MOINI: Can you tell us a little bit more about how silicosis affects the body? I mean, you're mentioning younger folks. How are they discovering that they have this? Is there a spectrum, probably, of how bad it can be?

SHEIPHALI GANDHI: So in the beginning, people may have changes on their scans, but they may not have any symptoms. And that's really the ideal time that we should be diagnosing this. OSHA requires surveillance of any worker overexposed to silica. But we know that that testing is not happening.

Over time, people start to feel-- like it's a very slow onset of symptoms, almost imperceptible. Maybe a Dry, cough, maybe some fatigue and shortness of breath. But over time, it caused more and more scarring in the lungs where people are not able to take deep breaths, they can have chest pain from the inflammation. And then eventually, it gets to the point where they need oxygen and then may need a lung transplant.

NINA MOINI: Can I zero in on something you just said-- that you know the testing is not happening? You're saying best practices are generally not being followed? Is this anecdotal? Are there numbers to back it up? How do you that?

SHEIPHALI GANDHI: There have been a couple of studies of evaluations of how often employers are paying for screening for their workers. And overall, based on Cal/OSHA-- California OSHA Reports-- very few employers are actually arranging screening for their workers. We're also seeing that most of the workers, the first time that they see a medical center is in the emergency room, rather than through a screening program.

NINA MOINI: OK. There have been all these cases in California. California has seen the most in the US. Can you talk about just how widespread the condition is or feels there?

SHEIPHALI GANDHI: Sure. I think it's kind of perceived that way. But I think the reason we're seeing so many cases in California is because California has a very robust occupational health surveillance program, with many epidemiologists working on this issue. Whereas in many states, they may only have one epidemiologist in the entire state for all occupational exposures. Internationally, there have been more than 6,000 cases from the same exact exposure. And there are cases throughout the United States. It's just California is probably the only state counting the number.

We're seeing-- in our clinics at University of California in LA and San Francisco-- new cases every month. And it just seems like more and more. So there have already been 75 lung transplants in California, the vast majority of which have happened after 2023-- so in just the last three years. So it's a big discussion in our community. This is a rare disease and it really should never be seen.

NINA MOINI: How do you know-- to your point-- that the artificial stone is causing these cases? Can you beforehand or do you have to do testing?

SHEIPHALI GANDHI: So the diagnosis of silicosis really relies on consistent imaging and then an occupational history of exposure. But, when we take a history for many of our workers, most of them are working with all different types of countertops. But we'll tell you that a large proportion of the countertop type, that they're working with this artificial stone.

And artificial stone contains 90% silica, whereas most granites contain about 30% to 40%-- which was previously one of the most common types of countertop. But the popularity of artificial stone has taken off in the last like 15, 20 years. And I think that's why we're seeing silicosis in much greater numbers and in much younger people, because the exposure is so much higher.

NINA MOINI: I should say the Minnesota Department of Health told us silicosis cases in this state-- and we were talking about California more so-- but in this state have been declining since 2011. You mentioned, there are different robust levels of checking for things in different states. But a spokesperson said there are about 10 to 15 cases each year in Minnesota. That's according to a hospitalization data. We don't know-- they say-- if any of those are related to artificial stone.

The Minnesota connection here again, being this company, Cambria, which is the leading manufacturer of artificial stone. From your perspective, Cambria has said repeatedly it maintains safe working conditions, partly by wetting facilities, to keep dust out of the air. It blames lung disease on smaller fabrication shops in the supply chain that it says don't use safe practices. It, along with other companies, are facing hundreds of lawsuits from sick workers. From your perspective, is there a way to make these products safely?

SHEIPHALI GANDHI: I think it's easy to say that. If all the conditions are perfect, maybe you have times when there's little exposure. Recently, in a news article in business week, there was a release of company records from Cambria that showed that they have overexposure on their internal documents as well. I think it really highlights that even with multi-million dollar equipment, it is almost impossible.

These exposures under track of the academic publications done, one by [INAUDIBLE] another from Yale, show that overexposure is happening even in shops that are very well connected to many of the big fabrication organizations. And these are larger shops that have much more equipment. The supply chain of construction in the United States is very much built on the fact that there's some big shops, but almost the supply chain is happening in small shops.

And a lot of those workers were exposed at a time before they were told that it was dangerous. But even now, even with all the equipment, it's almost impossible to keep them safe. And I think that really highlights that when in the prevention of occupational diseases, number 1 is removing the toxic substance. Number 2 is using the substance in a safe way. And only the last option is protective equipment, personal protection. I mean, we all know how difficult it is to wear a mask after COVID for even a couple hours. Imagine wearing it for 12 hours straight. And even then, they're getting overexposed.

NINA MOINI: Dr. Gandhi, I want to thank you for coming by and telling us about this. I learned a lot. Appreciate your time, and we'll continue to keep an eye on this. Thank you.

SHEIPHALI GANDHI: Yeah, of course. Thank you so much for inviting me.

NINA MOINI: Dr. Sheiphali Gandhi is an assistant professor of medicine at the University of California, San Francisco, and Director of UCSF's California Silicosis Support and Research Network. We did reach out to Cambria for comment for today's story, but we didn't receive a response.