



Donor-Driven Lung Cancer Research: Rocket Fuel for Increased Survival Rates Transcript

- Diane Mulligan: We've made great strides in battling cancer, all types of cancer, over the past decade. And today, we see an increased focus on one of the most deadly, lung cancer. But you know, that didn't happen by accident. I'm Diane Mulligan.
- Jordan Sherman: And I'm Jordan Sherman. We can thank research for those advances. Breakthroughs in medicine, they don't happen without Young Investigators conducting groundbreaking research.
- Dr. Triparna Sen: Research is absolutely needed if we want to make meaningful progress in the treatment landscape for lung cancer. With the progress of research, I think we are seeing a lot of more effective drugs entering the clinic. We have some really long-term survivors, we have five years, 10 years out survivors
- Diane Mulligan: Lung cancer is a tough topic. It's a disease that affects patients, families, friends, coworkers. But first, it's a disease that affects people. The Hope With Answers: Living with Lung Cancer Podcast brings you stories about people living, truly living with lung cancer. The researchers dedicated to finding new breakthrough treatments. And others who are working to bring hope into the lung cancer experience.
- Jordan Sherman: We're joined today by Dr. Triparna Sen, Associate Professor Icahn School of Medicine at Mount Sinai, New York City.
- Diane Mulligan: You know, Dr. Sen's therapies for late-stage, small-cell lung cancer life expectancy earned her a Young Investigator's Grant Award from the Lung Cancer Foundation of America. Dr. Sen, thank you so much for joining us today. We know that lung cancer kills more people than breast cancer, prostate cancer, and colorectal cancer combined. Yet lung cancer receives less federal funding than all the other major cancers, why do you think that is?
- Dr. Triparna Sen: Thank you, Diane. First of all, thank you so much for doing this, I'm so excited to be here. You're right, I mean, lung cancer kills most people, is the largest cause of cancer-related mortality, but for a very long time, lung cancer, even now, lung cancer is quite

underfunded. And I think, because we did not have, for the longest amount of time, long-term survivors in lung cancer. Lung cancer used to be, and very sadly so, a death sentence, even a few years ago. But now, with the progress of research, I think we are seeing a lot of more effective drugs entering the clinic. We have some really long-term survivors. We have five years, 10 years out survivors, who are doing an outstanding job advocating for research, advocating for what research can really do, how they can shift the needle. With more and more advocacy, with more and more survivors in this disease, I think we are seeing people getting more attention. Lung cancer getting more attention from funding agencies, and, you know, NIH being more open to giving grants that are lung-cancer related. So I think there's a huge shift in the needle for this funding for lung cancer. Another thing is that there used to be victim blaming with lung cancer, with it being smoking related. And again, with research, now we understand that anyone with lung can have lung cancer. It is not a smoking-related disease, I mean, it's not that you are a smoker, you will have lung cancer, and it's not that if you've never smoked, you will never have lung cancer, so I think, as that perception has shifted, we have stopped that victim blaming to quite a bit. And I think that has really attracted the funding agencies, and the people getting interested in research and understanding the biology of this disease.

Jordan Sherman:

Because government funding for research in lung cancer is still, though, far less than it should be, smaller-scale funding from organizations like LCFA plays a really critical role, not only for the patients but for researchers too. Dr. Sen, can you explain why funding early-stage research is especially important for researchers who are just starting out in their careers?

Dr. Triparna Sen:

Absolutely, Jordan, I'm so glad you asked that question. So when a Young Investigator enters or starts a new lab, or starts their research, they usually don't have a lot of data to back their hypothesis. Very strong hypothesis. And NIH, the bigger grant mechanisms like the federal grants, they need a lot of preliminary data for them to kind of prove their hypothesis, and then they get these bigger grants. So that's where foundation grants play such a fundamental role, because these Young Investigators then get these short-term, with quite a bit of money, actually. They can get these grants, they can get these key preliminary datas that really shows that their hypothesis is really strong that they are able to do that, the feasibility of their research, they're able to recruit people. So their research becomes really stronger, and then they can get more funding for those bigger awards. So I think funding organizations like Lung Cancer Foundation of America do an outstanding job in

supporting these Young Investigators, which then they go on to get these bigger federal awards.

- Diane Mulligan: So do you think it would be fair to say that without the donors and without organizations like LCFA, the best and the brightest, you know, they weren't coming to lung cancer before and it's really been that change that's helped bring people like you into the fold?
- Dr. Triparna Sen: Absolutely, Diane, I think that's very accurate, because for a very long time, people, investigators, brilliant investigators, chose not to study lung cancer, that's why research was not progressing for the longest amount of time because funding wasn't there. And in order to get those federal awards, you need that key preliminary data, which is not possible, right, so it was like a vicious cycle. But now with funding agencies like Lung Cancer Foundation of America, they have these amazing grant mechanisms. Thanks to our donors, we can get these preliminary data. And now the Young Investigators are more and more interested into coming into lung cancer research. Yeah.
- Jordan Sherman: Yeah, and this has all been really great informational background, Dr. Sen, I wanna dive into your work now. If you would, how did the seed money that you received from LCFA help you achieve advances in lung cancer research?
- Dr. Triparna Sen: Oh Jordan, it completely changed my career trajectory. So let me start with saying what I do. So I study one of the most recalcitrant subsets of lung cancer, which is small cell lung cancer. Small cell lung cancer, it is about 15% of lung cancer diagnosis, but it is a extremely aggressive disease, right? The patient prognosis is really poor, with dismal survival. So when I started my career, very little was known about small cell lung cancer biology, and the treatment was kind of stopped, for almost 30 to 40 years. So with the funding that I got from Lung Cancer Foundation of America, I studied the immune microenvironment for small cell lung cancer. So one of the biggest riddles, or one of the biggest hurdles into getting a good prognosis for these patients is because immunotherapy does not work, in the majority of these patients. So what I studied was why immunotherapy does not work for these patients? And what drugs can we then give to augment the response, or to better the response of immunotherapy? With the support that I got from Lung Cancer Foundation of America, I was able to identify those therapeutic targets, that when combined with immunotherapy, really makes immunotherapy better. And I think my research, which is now published in Journal of Thoracic Oncology, and it led to bigger awards, the federal awards that I was talking about. But

not only that, it has supported clinical trials looking at these combinations, so I would say the funding that I received from Lung Cancer Foundation of America really changed the trajectory of my career, which then led me to get these bigger federal grants. Also helped me recruit.

Diane Mulligan:

You know, it's interesting, Dr. Sen, because you study genetics. I mean, that's where you originally started, and you could have gone into any disease state. What was it about lung cancer that made you decide to go and help all the people out who were battling this disease?

Dr. Triparna Sen:

In short, I saw fire and ran towards it! But I think the bigger question was, I've had personal losses, to lung cancer. I have lost near and dear ones to lung cancer. There was a personal drive all along to study this disease. But when I came to MD Anderson, where I did my postdoctoral fellowship, I also got the support of my mentors, of the grants, that I was really able to study this disease. And I said, at the very beginning when I started at this field, very little was known about the biology of small cell lung cancer, and that really intrigued me, that a disease with so much mutation burden, with such a poor prognosis, and there are no therapies, so, it really intrigued me that if I could do something for this, any contribution I could make would really shift the needle.

Diane Mulligan:

Very cool.

Jordan Sherman:

Well, it's interesting that you mention the research, and you mentioned earlier on the podcast how little was known about it, and we hit a stall for about 30 to 40 years, but that's not the case anymore, we've seen some really exciting research, kind of on the precipice of breaking here in 2023. Can you tell us a little bit more about what you're seeing?

Dr. Triparna Sen:

Yeah, absolutely. So one of the things that my lab is still studying, I'll mention a few areas that are really exciting to us. Is that we understand that only a small percentage of patients respond to immunotherapy in small cell lung cancer. There's still about 90% of the patients who do not respond. But now we are trying to understand, and starting to understand, what are the subsets of patients that actually respond to immunotherapy, and the patient subsets that do not. So I think that is a very exciting area where we are making really good strides. Another aspect what we did not understand, is we used to treat this disease as one disease, right? But now we understand that this disease is extremely heterogeneous. It is not one size fits all. The treatment needs to be

personalized, especially once a patient becomes resistant to the frontline therapy, they become resistant by very heterogeneous mechanism. So now, we are really starting to understand the biology of resistant disease, which I think is a big step forward into coming up with therapies in the second line. And the third thing is the plasticity, so as I said, this disease is extremely heterogeneous. But they also shift, they also change form. What I mean by plastic is, they absolutely change their features in order to escape therapy. Now my lab is investigating lineage plasticity in lung cancer, which I think will really help with understanding how a disease becomes resistant.

Diane Mulligan: Dr. Triparna Sen, it's always so delightful to talk to you, and I can't tell you how much we thank you, we're thrilled that you started out as a Young Investigator, and not that you're old now, but it is that you have just opened doors, and helped with how people are being treated for lung cancer, and we just thank you for everything that you do.

Dr. Triparna Sen: Absolutely, Diane, can I make an appeal to your listeners?

Diane Mulligan: Please.

Dr. Triparna Sen: So, I would just like to summarize by saying research is absolutely needed if you want to make meaningful progress in the treatment landscape for lung cancer. We cannot do without research. And research cannot be done without your generous donations, and it's funding agencies like Lung Cancer Foundation of America, who are not only changing the life of Young Investigators, they're actually pushing the needle forward for research, and then, of course, consequently, to therapy, so, I'm really thankful for the donors who are contributing so generously to lung cancer research, and I would really encourage them to continue to do that, and hopefully do better. So thank you so much, Diane, for this opportunity.

Diane Mulligan: Thank you. Have a wonderful day!

Dr. Triparna Sen: You too, thank you.

Diane Mulligan: It's easy to see how Young Investigators are making a difference in lung cancer research, and making great strides improving the quality of life for those living with lung cancer.

Jordan Sherman: Absolutely, and one of those benefiting from donor-supported research, is a man from Virginia who's quote unquote a stalker.

Now, not what you would think . James Hiter is a Lung Cancer Foundation of America Speakers Bureau member. He recently met with me to share more about his amazing running streak, fully clothed, mind you, to help with lung cancer research.

Diane Mulligan: You know, James is living with lung cancer himself, back in 2016, when he was first diagnosed, he was on a 764-day running streak. 764 days of straight running and hitting the pavement. But then, his lung cancer diagnosis really put a crimp in his plans.

Jordan Sherman: James, thanks so much for joining today. You started this running streak three different times. Can you talk a little bit more about where you are today with the streak, and how research gave you that opportunity to end up starting over, more than once?

James Hiter: Yeah. Well, so today was day 1133 days of running every day without missing a day.

Jordan Sherman: Wow.

James Hiter: And that started about seven weeks after my last surgery, which was kind of my last, like you said, the next chance to start over, so, after 2.5 years of chemo, and having a streak during that time, that one ended with this most recent surgery, but gosh, it's not even that recent anymore, it's been over three years. And so not only do I have a three-year streak going, but I also have a three-year streak of good scans, of stable scans, so yeah, it's pretty remarkable to think about, and it's been a great ride.

Jordan Sherman: No kidding, and you take that passion behind your running, and you actually created a nonprofit, it's called Streak for a Cure. We have to give that a plug here. And it's designed to raise awareness of the fact that anybody with lungs can get lung cancer. And as discussed, you know, you are a member of the LCFA Speakers Bureau. So James, why does raising money, why is that so important for you, especially when you can take that money or when that money gets raised, and can go towards something as important as research?

James Hiter: Yeah, well I think about it two ways, Jordan, one, it's a little bit of a debt of gratitude. When I was diagnosed, I quickly became aware that people, way before I ever really paid any attention to lung cancer, had been payin' attention to lung cancer. And I was the beneficiary of that, I was the one who was able to utilize drugs, some of which were newer, some of which had been around a long time. But whether they were new or old, I was still the benefactor

of people who had been there and done stuff before me. So, there's that aspect of it, and the importance of it, and the feeling that I wanna make sure that part of my legacy as a lung cancer survivor is that there will be advances that I may not even live to see that will benefit others that are diagnosed five or 10 years from now. And so that's a big part of it for me. The second thing that really struck home, because before I got into advocacy at all, I would've just assumed that research was mainly government funded, or pharmaceutical company funded. And while those are two big sources of funding for research, they're also very bureaucratic, and it's not a slam on them either way. But both have a lotta strings attached, and it's really hard for practitioners, for clinicians, for researchers, to get their hands on the money that they need to do the work that they have in their head, the idea that might unlock somethin' really big. So I once heard, he's a world-renowned oncologist, and I once heard him call philanthropic lung cancer funding the rocket fuel for research, and that really stuck with me, and it's one of the other reasons that I really am passionate about trying to raise money for lung cancer research.

Jordan Sherman:

Was lung cancer ever on your radar prior to your diagnosis, had it touched your life in any way, shape, or form prior to that?

James Hiter:

You know, I lost my grandmother, before I was born, to lung cancer. But I had still, even with that loss, had never really hit my radar screen, until I was actually diagnosed. And then it was kind of like thrown into the deep end, to learn as much as ya can as fast as ya can. One of the things that I really aspire to do is be a tremendous student of the disease, to really try and learn as much as I can, in part so I can advocate for myself, speak intelligently with doctors, or that's maybe not always the case, but at least not feel completely overwhelmed by every term that they throw out.

Jordan Sherman:

James, you alluded to this a little bit, in your previous answer there, but when you are diagnosed with lung cancer, it's that desire to just have immediacy, in what's happening, what's going to happen, what's my treatment plan? And as you know very well know, that can take a little bit of time to develop, just like research, research takes a lotta time, and it takes a lotta money. Yet people living with lung cancer like yourself benefit from LCFA's work in finding Young Investigators to help find answers. Can you talk a little bit more about that, and just how critical it is for those folks to get seed funding, as you mentioned before, to kinda open up doors that may otherwise stay shut?

James Hiter: Yeah, I mean, one of the cool things that I've had the honor to do is to serve as a patient consumer reviewer for the Congressionally Directed Medical Research Program that's run through Congress, and administered through the Department of Defense. But it becomes very clear that if you're not already significantly published, if you're not already have a lot of of accomplishments under your belt, you're not likely to win those awards.

Jordan Sherman: Right.

James Hiter: So these young investigator awards are so critical, because it helps these people who have great ideas, but are developing that track record that then ultimately will help them get the really big awards down the road that will help them take somethin' all the way to clinical trial, which takes millions and millions of dollars. But you don't just jump right into a clinical trial, you've gotta build your accomplishment list to be able to get into that space, and it's one of the cool things I love about funding the Young Investigators.

Jordan Sherman: Awesome, I think that's really great perspective, and I hope the listeners can hang on to that, that sound bite, we'd like to call it in the business, because I really do think that paints an incredibly clear picture of how this works, and why donations are so important, for this type of funding, so, James, really appreciate having you on the podcast. You're an incredible patient advocate. Keep up the great work, and can you just, again, remind everybody, what is your streak at?

James Hiter: Yeah, it's 1133 days.

Jordan Sherman: And how do you remember that, by the way, just before we close it out.

James Hiter: I log it every day on an app, after I finish my run, I just plug it in, so, I just finished my last run about an hour ago, and so that's what's top of mind, so, yeah.

Jordan Sherman: Awesome, well thank you again James, I appreciate your time today. And hopefully you've got beautiful weather for your run tomorrow.

Diane Mulligan: What a fantastic conversation, with James Hiter and Dr. Triparna Sen. Both are such wonderful advocates for people living with lung cancer. And they make such a great case for continued funding of research.

Jordan Sherman:

And if you're enjoying the Hope with Answers: Living with Lung Cancer Podcast, consider making a donation to LCFA. It helps them produce this resource for patients, for anybody seeking answers, hope, and access to updated treatment information, scientific investigations, and even clinical trials, all you have to do is text LCFA to 41444, and join this important fight.

- [Diane Mulligan]

Make sure to subscribe to the Hope with Answers: Living with Lung Cancer Podcast. You'll be notified every time a new episode is available. So visit us online at lcfamerica.org, or you can find more information about the latest in lung cancer research, new treatments, and more. You can also join the conversation with LCFA on Facebook, Twitter, and Instagram.