

### Transcript Details

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Alice Stewart: The Woman Who Knew Too Much

Dr. Leslie Lundt:

How much do you know about the woman who first identified the cancer causing effects of x-rays in pregnancy? British physician, Dr. Alice Stewart was persecuted professionally and financially for her unpopular research. Let's hear her story.

Welcome to the Clinician's Roundtable. I'm Dr. Leslie Lundt, your host and with me today is Dr. Gayle Greene.

Dr. Greene is a professor of Literature and Women's Studies at Scripts College in Claremont, California. She's also a member of The American Academy of Sleep Medicine and is the Patient Representative and board member of The American Insomnia Association.

Welcome back to ReachMD, Dr. Greene.

Dr. Gayle Greene:

Thank you.

Dr. Leslie Lundt:

Why did you write this book, The Woman Who Knew Too Much?

Dr. Gayle Greene:

Well, it's a great story that was waiting to be told. I was actually writing another book when I came across Alice. I was writing a book on cancer and the environment and I interviewed her for the chapter on cancer and radiation, and I just thought this is a story that has to be told. It's about a woman who stumbled on an explosive discovery. She was not looking for it. She was tracking the causes of childhood leukemia, and she came across this amazing fact that if you x-ray pregnant women, as was being done in the 50s, you doubled the risk of a childhood cancer. Not just leukemia, but all cancers.

She wasn't looking for that, just as I wasn't looking to tell her story, but she stumbled on it and it altered her life ever after. The findings were extremely unpopular, so she had enormous opposition and she stuck to her guns, and so it was a kind of a David and Goliath story, which I was so...I'm a sucker for this kind of story. Somebody who has the courage to go up against authorities and to stick to her guns. She stuck to her studies for 20 years until she proved, if you can use that term in epidemiology, that this association existed. And this is why doctors don't x-ray pregnant women anymore.

Dr. Leslie Lundt:

So for those of us who weren't practicing in the 50s, they x-rays women who were pregnant instead of now, we would do an ultrasound, is that correct?

Dr. Gayle Greene:

That's right, and luckily, they didn't do it until the third trimester to find out how the fetus was sort of resting and for what kind of a delivery it would be. There was such belief in nuclear medicine and in all things nuclear in the 1950s, was the decade of the arms race. So it was also the decade when the nuclear industry was expanding with enormous subsidies from government, and doctors had just gotten new radiography machinery, as it was called, and they were using it just so casually, and so for somebody to come along and say that radiation was that dangerous at that low a dose, just a tiny way beneath what was thought to be the safe threshold, was just...nobody wanted to hear it. She never again received another major research grant. She had to do her research, really out of her own income.

Dr. Leslie Lundt:

So why is it that virtually everyone today agrees that high dose radiation is harmful, but Dr. Stewart's stance on low-dose effects were so controversial?

Dr. Gayle Greene:

It had to do with the Hiroshima, the government scientists that went into Hiroshima just after, well five years actually, after the bombs had been dropped in Nagasaki and looked at the survivor population and came to the conclusion that low-dose radiation was really not a big deal. High-dose radiation, everybody knew that could kill you, that's not why we dropped the bombs, but it turned out, it was very, very obvious, but you know, the Hiroshima scientists decided that there was threshold beneath which radiation ceased to be dangerous and Alice was discovering that threshold did not exist and in fact, she said, small dose radiation can cause mutations. The cell attempts to repair itself and that can give you cancer or birth defects down the line, and that was more dangerous because you know, if you kill the cell outright, it's not going to create trouble but you're \_\_\_\_\_ (00:04:09) asking for trouble, nobody wanted to hear this.

When I researched that Hiroshima data, it was such a powerful example of politics shaping science, you know. Scientists finding what they wanted to believe. Alice did a very, very sort of well thought out critique of that data, why they were looking at the survivor population, which was not a representative population. Most of them had not had hands-on experience with medicine, which she had. She started out as a doctor and she knew what trauma...you know, she treated soldiers during World War II in the London Blitz, and she knew what trauma could do to the body, which most of these, she called them number crunchers, most of the statisticians who went in after and looked at the Hiroshima data. So it was really a thing of politics shaping science...that chapter I wrote on that.

Dr. Leslie Lundt:

Now how was she persecuted professionally? Tell us about that.

Dr. Gayle Greene:

Well, it wasn't so much persecution. It was more just the no funding and that of course, to a scientist, is a case of death, because you can't carry on without funding. She immediately...the funding just immediately kind of dried up for her. She had been the kind of golden girl with the medical research council in England. She had gotten all sorts of grants and honors that no woman ever had. You know, she was on a real fast track, and suddenly, there was no track at all. And yet, she managed to carry on. I mean it was amazing how she did. She was a person of enormous charisma. That was one of the things that drew me to this book. I just kind of fell in love with her. I mean, this was a woman who...this sort of Oxford...she looked like everybody's granny, but then she opened her mouth and this incredible Oxford English came out and these numbers and this world-class scientific mind, and she inspired people to work for her and she knew enough to hire women. She said if you want somebody to do the job of ten men, hire a woman, and she allowed them to bring their children to the workplace. She allowed them to do the work whenever they could. And so she actually assembled research teams that could carry on her work, and I just found that incredible inspiring. I mean, she did not have teams of researchers working under her, yet she published 400-plus articles in referee journals.

I should say, this was not a trained scientist at all. These were referee journals.

Dr. Leslie Lundt:

If you've just tuned in, you're listening to the Clinician's Roundtable, on ReachMD, the channel for medical professionals. I'm Dr. Leslie Lundt, your host, and with me today is Dr. Gayle Greene, author of *The Woman Who Knew Too Much*, the story of Dr. Alice Stewart.

Gayle, in your book you talk at length about three of her relationships, her mother, her lover, and her arch rival. Which was the most interesting to you?

Dr. Gayle Greene:

Let me just say a few quick words about all three of them. The mother was a physician in the late 19th century, a time when very few women had achieved that position. I mean probably two dozen women, you know. And so was her father, a physician, and they were doing pediatrics before it was even called pediatrics. They were doing milk clinics for women in Sheffield, you know preventative medicine to try to stop the terrible epidemics that were happening there. So they were both socially responsible, conscientious physicians and I have a real soft spot in my heart for that, because my father was like that. He was a physician like that. So they were extraordinary. And then her lover, who was Sir William Empson and the reason he was somebody I read in graduate school as a graduate student in English. He was one of the foremost literary critics of the 20th century and I couldn't believe, when I came across his name in connection with her story, and it was a very long relationship they had. I asked her and she said 1926 to 1983. That was no casual...they were both married to other people, but it was kind of an open marriage on his part, and hers had dissolved. She was actually a single parent. That's something else I should mention about her and how extraordinary she was.

But to get to her rival, because I think that Sir Richard Doll was very interesting. Their relationship...now Sir Richard Doll was knighted for his discovery of the link between lung cancer and smoking. He was described as Britain's foremost epidemiologist. He had teams of researchers working under him. He was the posh career compared to Alice's \_\_\_\_\_ (00:08:43) career. He blocked her career at every possible moment. When she published the findings about the link between fetal x-ray and childhood cancer, he rushed in with a study to refute her, which kept those findings from being accepted for two decades.

Now that meant a lot of fetal x-rays and that probably made a lot of trouble for the human race, a lot of childhood cancer. Why he did this, I'm not sure. They had a very complex relationship. They knew each other well. They sat on the same committees, on the same editorial boards, but there was something about her that he wanted to stop and after he died, it came out that he had been taking large amounts of money from Monsanto all the while he was exonerating vinyl chloride of a cancer risk. So he's become...you know, his reputation was considerably tarnished after his death.

I should say also, he was with those early government scientists who were sent into Hiroshima and exonerated low-dose radiation of risk, again highly, highly politicized. So his career skyrocketed into fame. He had teams of epidemiologists working under him. The best researchers in Britain. Alice's plummeted after her unpopular discovery. I interviewed him for the book and he kept wanting to be the good guy in this interview. "I did nothing but try to help her," and it is so contradicted what I had heard from Alice. After she died, he came to her funeral, which people were very mystified at that move, but he also wrote the entry, the biographical entry on her, in the Oxford Dictionary of National Biography, in which he attempted to discredit her reputation as a serious scientist and called her an embittered woman.

So there was some kind of strange...I think it was rivalry. I think she was a lot smarter than he was, frankly, since I interviewed him, and he was considerable young...well he was 5 or 6 years younger than she, and she was sharp as a tack. She was in her early 90s, he in his late 80s, and I think there was a certain amount of rivalry there. I think there was also the political scientist knows what side his bread is buttered on as opposed to the scientist who makes an unpopular discovery and then really has to pay for it the rest of her career.

Dr. Leslie Lundt:

Now, looking at the whole story, would Dr. Alice Stewart have had a different path, do you think, if she were a man?

Dr. Gayle Greene:

There was tremendous prejudice against women that she had to fight against it every step of the way. She was very good at this because she was quite a charming woman. I mean, people found her kind of irresistible, the way I did, but she actually thought that being a woman worked to her credit because she didn't have the kind of ambitions that a man did. She didn't expect to rise to the top and sit on all of these cushy committees. She just knew how to knuckle down and get the job done, and she thought a little misfortune in a person's career actually toughened you up. That's what made you the stronger for it, and she had had a little misfortune, to my mind, quite a bit of misfortune, but she had such a resilience and she did have, as she said, "I make more than a secretary does." She didn't make very much but she had tenure at Oxford, which was enormously important because it kept her in place. It was a very lowly position, but she had a place, and she always said she'd been toughened up by this experience. She said, "You must hope for a little misfortune, not very much, but enough misfortune to kind of toughen you up."

Dr. Leslie Lundt:

Well, thank you, for sharing her story with us. We've been discussing Alice Stewart, The Woman Who Knew Too Much with her author, Dr. Gayle Greene.

I'm Dr. Leslie Lundt. You've been listening to the Clinician's Roundtable on ReachMD, the Channel for medical professionals. To listen to our on-demand library, visit us at [ReachMD.com](https://ReachMD.com). Thank you for listening.