

When Science Finds a Way

Season 4, Episode 4

Why was a life-saving drug overlooked for half a century?

Show notes

Episode description:

Tranexamic acid (TXA) has enormous potential to prevent deaths from postpartum haemorrhage, but until very recently it's been overlooked. Professor Haleema Shakur Still tells Alisha Wainwright how she stumbled on TXA's untapped potential, and the drug's journey from being an undervalued discovery in post-war Japan to a groundbreaking treatment in modern-day Nigeria. Professor Nike Bellow and Dr Abiola Akiyode-Afolabi share their efforts to make TXA more accessible to communities, while Haleema explains how drug trials have revealed a hidden side to postpartum haemorrhage – one that could prevent cases before treatment is even needed.

Mentioned in this episode and further reading:

- WOMAN trials: looking at the effect of the drug tranexamic acid (TXA) on bleeding, and the best ways to give it (<https://thebloodtrials.org/womens-health-trials/>)
- The missing evidence: anaemia, postpartum bleeding and maternal death, Blood Trials, LSHTM (<https://thebloodtrials.org/the-missing-evidence/>)

A word of thanks to all the WOMAN Trial collaborators, Professor Ian Roberts, who co-led the WOMAN Trials alongside Haleema, trial teams in London, Nigeria, Pakistan, Tanzania and Zambia and the women and families who make this work possible.

Transcript

Music starts 00:00

[00:00:00] **Haleema Shakur-Still:** Tranexamic acid has this amazing story. It really is a story of struggle and, um, misogyny and everything bad you can imagine in science.

[00:00:13] **Alisha Wainwright:** Discovery doesn't always happen in a straight line. Sometimes it's a longer path shaped by who gets listened to and who doesn't. Tranexamic acid or TXA is one of those stories first discovered in 1960s Japan.

It took five decades for the drug to be used for its original purpose. Preventing postpartum hemorrhage, which is still one of the leading causes of maternal deaths worldwide. Since the early 2010s, a series of trials by the London School of Hygiene and Tropical Medicine have been exploring how it can be used to save women's lives.

May have made life changing discoveries, but their path hasn't always run smooth.

[00:00:58] **Haleema Shakur-Still:** We went in believing something and the result shocked us into learning even more.

[00:01:06] **Alisha Wainwright:** This episode, we are diving into the incredible story of the WOMAN trials with Haleema Shakur-Still one of the lead investigators across the full WOMAN research portfolio.

I am Alicia Wainwright. This is when Science finds a way, a podcast about the science changing the world. Okay, let's meet Haleema.

I'm so excited to have this conversation. I have a lot of questions on deck, but firstly I just wanna ask if you can say your name and what you do.

[00:01:38] **Haleema Shakur-Still:** I am Haleema Shakur-Still. I am an emeritus professor of Global Health Clinical Trials at the London School of Hygiene and Tropical Medicine.

[00:01:47] **Alisha Wainwright:** Can you tell me what inspired you to get involved in the WOMAN trials?

[00:01:53] **Haleema Shakur-Still:** I was never really interested in women's health because it was never on my horizon. Um, I started life, um, as a nurse and I never actually did, um, women's health. I have no idea why I managed to bypass that totally. And in my research life, um, I was very interested in traumatic injuries, um, because I think I had a really major brain injury when I was younger.

[00:02:31] **Abiola Akiyode-Afolabi:** Oh.

[00:02:32] **Haleema Shakur-Still:** And, uh, I had a massive hemorrhage. Everyone thought I was going to die, but I managed to survive. So I've had a real personal interest in traumatic injuries and we were doing a trial of traumatic injuries, um, looking for ways of stopping people bleeding to death and we were doing the trial in over 50 countries around the world, and I was absolutely enjoying it because I got, I was really privileged to go and visit Hospitals around the world, you know, from Latin America to Africa, to Asia, and I was in a hospital in Nigeria.

In the capital city, Abuja. And we were doing what we're supposed to do as trialists go and check the trial is being done correctly. And the trial we were doing at, at that time was called Crash 2. And Crash 2, we were really pleased was doing very well at this site, and I was just telling the doctor who was looking after the trial at the site, how pleased I was.

And we were standing in the emergency department at the time and patients were coming in and sort of going to different places and a patient came in, was rushed behind a curtain. And

the next few minutes I could hear, you know, frantic efforts of resuscitation. And a little bit later just screaming. And at the time I thought, you know, what's this?

So I said, said to the doctor that that was with us. I said, what's going on? And he said, um, that's a woman who's just come in with postpartum hemorrhage and we haven't been able to save her. She's died.

[00:04:46] **Alisha Wainwright:** Wow.

[00:04:46] **Haleema Shakur-Still:** And he said to us, you're looking at tranexamic acid for traumatic injuries. Why aren't you looking at it for women who bleed to death from after childbirth?

And at the time I thought, um, you know, women don't really die of postpartum hemorrhage because I'm privileged to live in a very rich country where women don't often die of postpartum hemorrhage. And that was the reason it wasn't even on my horizon, but he said it that it was an everyday occurrence to them.

This was something they were dealing with every day, and by the time women came to them they weren't surviving and they, they felt it didn't have the treatments that could save their lives. So we went, um, went away and started looking at, you know, what else could be done for women who bleed to death. And at the same time, we were doing the, the Crash 2 trial of tranexamic acid in trauma patients.

We started looking at whether it could be useful for women and we started the WOMAN trials even before we knew the results

[00:06:10] **Alisha Wainwright:** Of your Crash 2 trial,

[00:06:12] **Haleema Shakur-Still:** of the Crash two trial.

[00:06:13] **Alisha Wainwright:** Interesting. So, this was around 2010 where tranexamic acid was not a new drug. I wonder if you could tell me a little bit about how it was discovered and what it was initially used for.

[00:06:26] **Haleema Shakur-Still:** Tranexamic acid has this amazing story. It really is a story of struggle and, um, misogyny and everything bad you can imagine in science.

[00:06:38] **Alisha Wainwright:** Okay!

[00:06:39] **Haleema Shakur-Still:** Imagine, uh, Japan after the second World War. Having had two bombs dropped on it and there is someone working there who still believed in humanity and there was this amazing woman called Utako Okamoto at, at the time she was working in Japan.

Women were still dying in huge numbers in childbirth and she wanted to find better ways of looking after these women. She wanted to save their lives and postwar Japan wasn't an easy place to do research, but if you had your own blood, you could work on your own blood if you couldn't afford to buy reagents and everything else.

So she decided she was going to work on their own blood because then they didn't have to spend money or find reagents or cell lines on or all the other things, um, you needed money for. But what was driving her was that she, she actually said she wanted to do something for humanity. So she set about discovering a treatment that could stop bleeding, and she did discover. This treatment called tranexamic acid.

[00:08:09] **Alisha Wainwright:** Wow.

[00:08:10] **Haleema Shakur-Still:** But she couldn't convince the doctors who were primarily male in Japan to do the trials needed to see whether it could save the lives of women. So for most of its early life, tranexamic acid was used for minor bleeds like tooth extraction, minus surgery, et cetera.

Eventually, 50 years later was when we did the study, the WOMAN trial, that fulfilled her original dream of looking at tranexamic acid as a treatment for postpartum hemorrhage.

[00:08:51] **Alisha Wainwright:** That's, that's a lot to take in only because 50 years is such a long time to have so many women dying of postpartum hemorrhage.

I wonder if you could just briefly explain what postpartum hemorrhage is?

[00:09:06] **Haleema Shakur-Still:** Postpartum hemorrhage is a very complex, uh, thing. But it's basically any bleeding that could lead to,

[00:09:16] **Alisha Wainwright:** to death.

[00:09:17] **Haleema Shakur-Still:** Um, a life being threatened.

[00:09:19] **Alisha Wainwright:** Threatened. Okay.

[00:09:20] **Haleema Shakur-Still:** Uh, after childbirth.

[00:09:22] **Alisha Wainwright:** Let's move forward to 2010 when the women trial first began.

I wonder if you can talk us through the scale of the trial and what your focus was on ?

[00:09:35] **Haleema Shakur-Still:** The WOMAN trial set up was absolutely amazing. Um. Because we were only used to doing trauma trials, I thought setting up a maternal health trial would be really difficult because we needed lots of, um, doctors and midwives and nurses around the world, especially in countries.

Where maternal death rates were very high, um, to take part in this trial, and it was absolutely amazing that we sent letters of invitation out and we had no problems because almost everyone felt we needed better treatments for these women

[00:10:18] **Alisha Wainwright:** In, um, if a hospital experience, like for example, uh, in Nigeria, when you bore witness to this woman who died of postpartum hemorrhage, what is, what was the standard protocol at the time?

How would this be managed?

[00:10:36] **Haleema Shakur-Still:** If we use that woman as an example, she had given birth at home. The family had rushed her to a local hospital that did not have the facilities to look after her, and then she was taken to the treat. This teaching hospital.

[00:10:54] **Alisha Wainwright:** Mm-hmm.

[00:10:55] **Haleema Shakur-Still:** So by the time she got to that hospital, it was several hours after giving birth.

She had been bleeding for several hours, so the time delay was enormous and she had bled out too much. And with bleeding, most of the bleeding happens really early, so you need to intervene really early.

[00:11:18] **Alisha Wainwright:** Would you say that the reason perhaps, uh, postpartum hemorrhaging happens a lot in lower and middle income countries?

Is that due to the fact that a lot of women are giving birth at home and there is that time gap?

[00:11:32] **Haleema Shakur-Still:** Um, I think it's a mixture of things because In the WOMAN trials, almost all the women, um, gave birth in, in hospital. Okay?

And still women went on to die. Um, there are many reasons, um, why women might develop postpartum hemorrhage.

Skipping to our WOMAN TWO trial. We show that if you're anemic, you're more likely to develop postpartum hemorrhage if you have had sort of multiple births if you sort of age. There are so many factors, but we're still not really sure about, you know, why some women bleed and why some don't.

[00:12:26] **Alisha Wainwright:** So how did you, bringing it back to the first WOMAN trials, how did you select the countries that were going to participate and how did those countries perspectives help shape how you designed the trial?

[00:12:41] **Haleema Shakur-Still:** So the initial idea and concept came about, um, from discussion with doctors, particularly in Nigeria because that was where the whole story started. But then we spoke to doctors in other countries across, uh, Sub-Saharan Africa. Doctors in, um, Southeast Asia and Latin America, so, so of countries around the world where they felt postpartum hemorrhage led to death in their women.

[00:13:14] **Alisha Wainwright:** So tell me, what were the results from those first WOMAN trials?

[00:13:19] **Haleema Shakur-Still:** Oh, it was absolutely amazing. Um, I can still remember the day when the results came out and we saw that, um, in addition to everything else, you

know, standard care that women were already being prescribed, tranexamic acid sort of reduced the risk of women bleeding to death overall by about a third.

[00:13:43] **Alisha Wainwright:** Wow.

[00:13:44] **Haleema Shakur-Still:** And later on, um, when we looked at time to treatment. If so, if women received treatments within the first sort of 15 minutes or so, you could reduce their risk of bleeding to death by about 70%, and with every 15 minutes you delay.

You lose, um, 10% of the benefit. So this is why we really need to intervene very, very early if we are gonna save as many lives as possible.

[00:14:18] **Alisha Wainwright:** Yeah. So after the trials results were announced, what new questions did it raise?

[00:14:27] **Haleema Shakur-Still:** The first WOMAN trial raised an awful lot of questions. Um. When, when we saw that it, that tranexamic acid was beneficial, the first question we wanted to ask was, uh, if it can treat postpartum hemorrhage, can it prevent postpartum hemorrhage, um, especially in women or with high risk of postpartum hemorrhage, like women with anemia.

And what about getting tranexamic acid into use in the community to make sure women could benefit. What about finding alternative routes for giving tranexamic acid? Because we had given it in the first WOMAN trial as an intravenous drug. What about giving it in different forms that's easier to give, like an intramuscular injection or in tablet form? Liquid form. So we had all of these questions that we wanted to ask

[00:15:36] **Alisha Wainwright:** The WOMAN Trial proved TXA could save lives, but proving something works is only the first step. The next question they wanted to explore was how to make that treatment accessible, and this became the basis for a new trial I'M WOMAN and I spoke to Professor Nike Bello, the national coordinator for Nigeria for the WOMAN trials, whose been at the center of this work for over a decade, to give us an idea of why not just relying on intravenous injection directly into the vein might be the key to getting it to the women who need it the most.

[00:16:15] **Nike Bello:** Nigeria was an important country in the women trial and still is whenever postpartum hemorrhage has been spoken about, because Nigeria is one of the countries, one of the few countries where women are most likely to die. The results of the WOMAN trials were big. They impacted all of us. I dare say a lot of the clinicians in Nigeria are much more aware of tranexamic acid's role in treating postpartum hemorrhage than they were before.

Part of the drawback, the problem is that, about two thirds of births in Nigeria do not take place in hospitals. They take place at home or in more informal settings with a mom or a mom-in-law, or a local untrained birth attendant. The I'M WOMAN trial, or I AM WOMAN, we seem to call it that interchangeably, amongst other things, aims to assess whether giving the drug intramuscularly would work as well as giving it intravenously, which are the traditional routes for administration. If it can be given intramuscularly, it's much easier to train a birth attendants. Now, we're not really thinking we're going to train the birth attendants in former birth attendants like moms and mom in-laws, and the oldest woman in the village who has seen the many, most amount of deliveries.

But we're thinking more like primary healthcare centers, not teaching hospitals. Where many more people deliver. Now in the primary healthcare center, the only birth attendants might be a community extension worker. He's not quite a midwife, has not gone to midwifery school, but has undergone some formal training enough to provide basic care.

Now, they might not be able to give an intravenous injection, but they can be trained to give an IM injection. So that's kind of the thought of the reach of the I'M WOMAN trial, that if we can show that this can be given muscularly, that we can roll it out well beyond where doctors and nurses supervise deliveries.

Another thing, the I'M WOMAN trial is part of a wider research called Transform. Part of transform's reach is to implement things in the community. So there's a community collaborator, so to speak, who already has a reach in the community and who is taking this message there. And I'm excited at the implementation phase, as in for now, it's just awareness.

We don't have results yet. We don't know that this works. But when we have results, if we find out that it works, I'm excited at how the community collaboration will help us to implement in a way we've never been able to before.

[00:19:06] **Alisha Wainwright:** It makes so much sense what Nike is saying to meet people where they are at.

[00:19:11] **Haleema Shakur-Still:** In the WOMAN trial, we only gave tranexamic acid intravenously, and that has many limitations because even in hospitals, many midwives and nurses aren't allowed to give intravenous drugs. Only doctors are allowed to give intravenous drugs. So we started off with a very small trial called the WOMAN Pharmacological TXA trial, which was, it's a mouthful, but it's where we compared intramuscular, intravenous and oral. We had hoped for if oral worked, that will even be better in the community, but what we saw was that it took over an hour to reach, um, the levels in the blood that's needed to stop bleeding. And an hour in the life of a postpartum hemorrhage woman is a long, long time.

But the intramuscular was highly, highly, um, I would say successful because it showed that within 10 minutes of administration it already reached, um, levels that, um, could, uh, what we call inhibit fibrinolysis. That's the process by which we stop bleeding.

[00:20:36] **Alisha Wainwright:** Okay?

[00:20:37] **Haleema Shakur-Still:** So we had hoped at that point that the WHO would say, okay, you've compared these two ways of giving tranexamic acid.

It's a no brainer. Um, we should give it intramuscularly. Um, but they said no. We needed to do another big trial. And this is where the I'M WOMAN trial came about. For example, in trauma in many countries now in the UK for example, we give in, um, tranexamic acid intramuscularly for trauma. Ambulance crews can do that already for postpartum hemorrhage.

Um, if we can, um, give it intramuscularly, um, and the I AM WOMAN shows that it, it is as good as the intravenous that will be sort of absolutely life-changing, uh, because we can then focus on getting it into the community where people can give it intramuscularly.

[00:21:43] **Alisha Wainwright:** It is clear talking to Halima that making sure great science can change lives.

Doesn't only depend on successful clinical trials. It depends on power policy and whose voices can shape care, which is why advocacy is also a big part of the WOMAN trials. As Nike told us, making TXA accessible depends on working with trusted community partners. And one of those partners is Nigerian lawyer and civil rights activist, Dr.

Abiola Akiyode-Afolabi who in 2002, founded the Women Advocates Research and Documentation Center. Or WARD C named after the ward where she gave birth. Ward C is a key community and advocacy partner for the WOMAN trials working to raise awareness of postpartum hemorrhage and the benefits of TXA. Let's hear from Abiola about the work they're doing.

[00:22:40] **Abiola Akiyode-Afolabi:** We felt that because majority of Nigeria still living communities in rural areas, that there was a need for us to be able to get information across there for them to also understand that we can all prevent, uh, maternal deaths if we have information and if you can make demand of your hospital or of your clinic, they would be able, you know, to save lives.

So, we decided to talk about TXA, you know, in community and we decided to come in collaboration with the, uh, London School of Tropical Medicine and the WOMAN trial. So we went to almost a hundred communities across Lagos. Uh, we normally spend about three or four hours in those communities. At initial stage when we started off, they were a little bit skeptical because they have had a lot of people coming to their community, especially when they're doing research and they don't get to see any impact of what they have to do.

Uh, it became easier because one of the things, 'cause we're grassroots, we're very community based, so we believe in ownership. Of any idea. So we didn't go to them like dictating what to do. You know, we co-created with them to say, there is a problem. Can people give us experiences of that have died as a result of postpartum hemorrhage?

And they come, came with a lot of. Uh, story, my brother and my, my brother's wife, my sister, my wife, you know, and all of that. And so we are able to root that conversation within their reality. And so we go to communities, we go to marketplaces, we go to villages, and we speak with women about it. And so, uh, that's what we have been doing.

And we are not only working in communities, we also target radio programs with, uh, huge population of people. We speak in very local language that people can understand on those radio station. We also use the social media and we work with one of the very well known, uh, influencer, social media influencer influencers, who is also a medical doctor, who is called aproko doctor.

And through our engagement with him, we were able to meet over one million reach. So our next level is to ensure that the government of the day buy into the idea because we had also realized that it is one thing to speak to the, to the women to make demands. It's another thing, one, if tranexamic acid is available, you know, for them, for use, it is another thing.

If they can also afford. They can afford it. So we are targeting government policy makers, you know, to buy into the idea so that they can include it as part of the budget for the health sector. Uh, and so women don't have to pay 35,000 naira, which is about, uh, \$20 or more. Which is what they pay, you know, to be able to access, uh, TXA.

So we are upscaling that project to target policy makers, to target government, to ask governments to commit to saving, uh, women's lives.

[00:26:05] **Alisha Wainwright:** Wow. Abiola brought up so many good points. I'm, I'm wondering how big of a part is advocacy in the WOMAN trials,

[00:26:14] **Haleema Shakur-Still:** Abiola Has been a game changer with Ward C because up until I met Abiola, I thought I understood community engagement.

[00:26:30] **Alisha Wainwright:** Mm-hmm.

[00:26:31] **Haleema Shakur-Still:** But she taught me about community engagement. Um. The social media, um, influencer she talked about, he did a film telling the story of a woman going into hospital and dying of postpartum hemorrhage the way the story was told. Uh. I would never have told a story in that way because I didn't understand the culture.

I didn't understand how to, um, create a, a message that would be understood by the culture. So having people like Abiola and local people was a massive, massive lesson for me. And, um. She took us into the community. I was lucky enough to spend time with her and members of WARD C few months ago, and we went out into the community and things as a westerner I will be very reserved about doing, uh, um, Abiola went into the marketplace with a microphone and called all the women and asked them questions in their own language and talk to them in their own language and to told, sort of discussed, um, postpartum hemorrhage and discussed, um, the lifesaving benefits of tranexamic acid. All of these things I would never have been able to do, um, or known how to do. So we cannot understate the importance of having local voices telling local stories and people taking ownership.

And she's absolutely right because Nigeria in the first WOMAN trial recruited over 5,000 women and had most of the women who died. That contributed to knowledge that's been used around the world came from Nigeria. So ownership should be with the women of Nigeria. So that's something, the fact that WARD C and Dr. Abiola has taken on, I'm incredibly proud of.

[00:28:55] **Alisha Wainwright:** So the WOMAN trials raised a lot of questions from how to administer the drug to how to improve accessibility, but there are also other big questions that inspired new trials. So can you tell me a bit about the WOMAN TWO trial and what were some of the questions you were trying to answer with that?

[00:29:15] **Haleema Shakur-Still:** The WOMAN TWO trial was looking at whether we can prevent postpartum hemorrhage happening in the first place in women with anemia. We thought that giving tranexamic acid to prevent postpartum hemorrhage happening in the first place was a good idea because if you can stop women bleeding, they're not going to die from bleeding.

[00:29:41] **Alisha Wainwright:** Makes sense.

[00:29:42] **Haleema Shakur-Still:** And I had, it's one of these situations as a scientist, you're supposed to go in with a neutral, um, hypothesis.

[00:29:52] **Alisha Wainwright:** Yeah.

[00:29:54] **Haleema Shakur-Still:** This is one of the sit, uh, one situation. I did not go in with a neutral because I...

[00:29:59] **Alisha Wainwright:** To be fair, you're a healthcare provider. You want to find a solution to a problem and save as many lives.

You think, if it works in this way, why wouldn't it work in this other way? I, I, I support and validate your assumption.

[00:30:13] **Haleema Shakur-Still:** No, but the thing is, it's why you do trials.

[00:30:17] **Alisha Wainwright:** Mm-hmm.

[00:30:17] **Haleema Shakur-Still:** And, um, we went in believing something and the result shocked us into learning even more because what did we learn? We didn't see a benefit of tranexamic acid on our primary outcome, which was the clinical diagnosis of postpartum hemorrhage. Yet we did see a reduction in the really bad outcomes, which was need for surgery and death. Although the numbers were very small and it wasn't our primary outcome, so the signal was still exactly as we had seen before, but what we hadn't banked on was the fact that how did doctors give a diagnosis of postpartum hemorrhage in women who were anemic and it had nothing to do with the actual blood volume loss. It was more to do with the clinical state of the woman in front of them. So with anemia, you already have increased heart rate, lower blood pressure. Those are also signs of shock. So combine that with any bleeding, they will very quickly give it a diagnosis of postpartum hemorrhage. So we think that women weren't getting in trouble because they were bleeding a lot.

They were getting into trouble because of their anemia, because doctors were seeing these classic signs associated with anemia, IE the signs of shock, high heart rate, low blood pressure, and some bleeding, and they were calling it postpartum hemorrhage. So, if you had your outcome is something, um, that can vary enormously.

There's no clear, no clarity as to what it is.

[00:32:26] **Alisha Wainwright:** Right?

[00:32:26] **Haleema Shakur-Still:** We didn't see a difference between the two treatment groups, but it taught us a lot about anemia itself and how sick women were going into giving birth with anemia.

[00:32:43] **Alisha Wainwright:** Hmm. So then how did you get from WOMAN trial 2 to WOMAN trial 3?

[00:32:49] **Haleema Shakur-Still:** Well, the other things we discovered with, um, the WOMAN 2 trial is that women with anemia we're more likely to have a baby die in their uterus before birth, they were more likely to have smaller babies. They were more likely to have babies die soon after birth. So there were lots of really bad things associated with anemia, and if you can prevent women having anemia before becoming pregnant, you might be able to prevent a lot of these really bad things.

So we are looking now at WOMAN THREE, which is treating young women before they become pregnant. And one of the areas that's totally neglected in the um, treatment of anemia is menstrual bleeding. So we think that by sort of reducing menstrual bleeding. We could improve anemia quicker if we give them tranexamic acid, uh, while they're having their menstrual period.

We want to see if we can improve their anemia better and faster.

[00:34:09] **Alisha Wainwright:** Oh, that's so interesting. Okay, so it's WOMAN 3 is almost before you get to the point where you like way before. So that's, yes. Even though the results from trial two were not what you expected. It created a whole slow, uh, um, store of new questions that could potentially still help in the, in the end, which I always love.

I know it's not what you, you might want to hear, but I always love when you get results that aren't what you expect. I do think those results are still worth publishing because just because you didn't get the answer you wanted, it doesn't mean you, it doesn't propel you forward with new questions and new ideas so that perhaps the following trials can have even more impact.

[00:35:00] **Haleema Shakur-Still:** Oh yeah. If the WOMAN 2 trial had shown tranexamic acid, um, prevent postpartum hemorrhage, we've said, yep, job done. But the learning from it was enormous because the impact of anemia on, on pregnancy, on women, on their, um, fetuses, on their newborns. And the problem is, um, anemia can cause, um, impairment in, um, neurodevelopment that becomes generational because you can't correct that in a child once the child is born and then you have a child going on to have children in the future, and it can go on and on and on.

So, if you can stop that from happening. And, you know, half a billion women worldwide are anemic.

[00:36:03] **Alisha Wainwright:** Wow. That's, that's a huge number. I hadn't, I didn't know that, man. Wow. What a, what a scope of topic, but all of that to say with the research that you are doing, along with your co, uh, PI Ian Roberts, Nike. What propels you to keep studying, keep learning, and, uh, keep developing these new trials?

[00:36:32] **Haleema Shakur-Still:** I, I think seeing the potential impact it can have, and I think, um, I can still remember when I first started doing clinical trials and on my consent forms, I had to say, if you're of child bearing potential, you couldn't take part in my trials. And because the ethics committees made me do that, and now, um, I'm able to do the opposite, which is having those same women generate knowledge for themselves, um, because it's the same women who are taking part in our trials, they're generating the knowledge for women like themselves for the future.

[00:37:17] **Alisha Wainwright:** Thank you so much for your research and your understanding, your inclusivity. I am, uh, if you're listening, you might not be able to tell, but if you're watching, I have the biggest smile on my face because I love your journey through going from not researching women at all to making that your entire primary focus and the lives that have been saved and the valuable knowledge that's been added to not only the WHO, but to word of mouth, et cetera. I'm so pleased to talk to you, Halima. Thank you so, so, so much for your time.

[00:37:55] **Haleema Shakur-Still:** Thank you very much, I've really enjoyed talking to you.

[00:38:01] **Alisha Wainwright:** That is all for this episode. Thank you to our co-host, Haleema Shakur-Still, and to our contributors, professor Nike and Dr. Abiola Akiyode-Afolabi for sharing their expertise, experience, and perspective. What I'm taking away from this story is that discovery is rarely the end of the journey. The science around tranexamic acid is clear, but whether that knowledge saves lives depends on systems, access, advocacy and whose health is prioritized.

And it's a reminder that progress in women's health isn't just about breakthroughs in the lab, but about making sure those breakthroughs reach the people that need them most. If you enjoyed this episode, make sure to follow When Science Finds a Way, wherever you get your podcasts and like, and subscribe on YouTube. When Science Finds A Way is brought to you by Wellcome, a charitable foundation that supports the global scientific community working to build a healthier future for everyone.

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