



### **Episode 35: Destiny and Determination: Becoming a World-Renowned Genetic Disease Expert**

#### **Benyamin Cohen:**

This is Hadassah On Call: New Frontiers in Medicine. I'm your host, Benyamin Cohen. In each episode of this podcast we'll get an inside look at what goes on behind the scenes at one of Israel's premier medical centers. We'll travel to Jerusalem to meet up with the doctors and nurses at Hadassah Medical Organization. From striving for peace through medicine to performing surgeries with robots, they're working on medical breakthroughs that are impacting people around the world. That's what Hadassah is all about. The power to heal our world, together. From cornea transplants to developments in pediatric oncology, we'll learn about the latest cutting-edge research coming out of Hadassah Hospital. All that, plus the inspiring stories of patients who have recovered from near-death experiences. Our appointment starts now. This is Hadassah on Call.

#### **Benyamin Cohen:**

Welcome to the brand-new season of Hadassah on Call. Today's guest is Dr. Polina Stepensky. She's the Director of the Department of Bone Marrow Transplantation and Immunotherapy at Hadassah Hospital. She is renowned in scientific circles around the globe for her expertise in genetic diseases. In particular, she's received a lot of media attention for her work saving the lives of dozens of Russian children who suffer from a rare disease called osteopetrosis. We recorded today's episode in Jerusalem before the coronavirus outbreak, and since World Marrow Donor Day is this month we thought it would be a great time to release this interview.

#### **Benyamin Cohen:**

Hello everyone, and welcome to today's show. I am joined today, super excited to have my friend Barbara Sofer here in the studio with us. Barbara is the Director of Public Relations for Hadassah in Israel and that's where we are today, at Hadassah Hospital Ein Kerem, in Jerusalem. Thanks for joining me today.

#### **Barbara Sofer:**

Well, it's a pleasure and I welcome you to our beautiful city of Jerusalem and our particularly wonderful Hadassah Hospital.

**Benyamin Cohen:**

It's a gorgeous building here. Happy to be here and thank you for hosting me. We are also joined by Dr. Polina Stepensky. Welcome to the show.

**Dr. Polina Stepensky:**

Thank you very much. You are very welcome to our hospital and to Jerusalem.

**Benyamin Cohen:**

Thank you. So if I get sick I'm in a good location. Anything that happens to me I'm in the best place possible.

**Barbara Sofer:**

Don't you dare get sick while you're here.

**Benyamin Cohen:**

Doctor Stepensky, I wanted to just talk a little bit about you before we get into what you're doing here at the hospital. Where are you from?

**Dr. Polina Stepensky:**

I came to Israel in 1990 from former USSR, from Ukraine. I came from Ukraine to Israel when I was 22 years old. I started my study of medicine in Ukraine. I came to Israel after four years in medical school in Ukraine. My parents were well-educated. Both of them were engineers. So I planned to be a doctor, but here in Israel they told me if you want to go to medical school you have to be a genius.

**Benyamin Cohen:**

Were your parents very supportive of you?

**Dr. Polina Stepensky:**

Yes, yes. Definitely. My mother, she's with me, and unfortunately I lost my father when I was 25 years old here in Israel. Everybody told me here that I will never be a doctor. My first steps, I started as cleaning worker, etc, etc. But you know, in every Jewish family the dream of family is-

**Benyamin Cohen:**

To become a doctor or a lawyer.

**Dr. Polina Stepensky:**

Yes, become a doctor or lawyer. Yes.

**Benyamin Cohen:**

Were you part of the wave of Jewish immigrants from the former Soviet Union?

**Dr. Polina Stepensky:**

Yes. I was a part of big wave of Jewish immigration. I came from small city in Ukraine, Vinnytsia, and it was a dream of my parents and it was my dream to be a doctor. When I came to Israel in the midst of

immigration they told me you can forget about your dream, but I didn't forget. So first of all, I graduated nursing school in Haifa here in Israel.

**Benyamin Cohen:**

At the Technion?

**Dr. Polina Stepensky:**

Yes, yes. Nursing school in the Technion and I'm a registered nurse. After it, I decided that I have to be a doctor. So I was accepted to Hebrew University Medical School and I graduated cum laude with excellence, medical school here in Jerusalem in 1998.

**Benyamin Cohen:**

Wow. Is that common for a doctor to also have previously had a career as a nurse?

**Dr. Polina Stepensky:**

It's not very common. No. Because it's not only to work as a nurse, it's also to have a certificate and to do all steps. I have a certificate of formal nurse here in Israel. It's not very common.

**Benyamin Cohen:**

So how does being a nurse, how does that impact you being a doctor? What kind of skills did you bring with you from nursing to being a doctor?

**Dr. Polina Stepensky:**

I think it's very good experience, it's amazing experience for me as physician. Because first of all, I know how it works. So I know how to work as a nurse. Also, during my studies here in Jerusalem, I worked as a nurse in Hadassah Mount Scopus in pediatric intensive care so I started to work with children when I was in medical school. And also from an emotional standpoint, as a nurse I was very close to my patients because it is 24/7 hours in the night shifts and we have a lot of time to speak with patients and to speak with families. I think it's a very good emotional experience to be a nurse, and now to see how to work as a physician through the eyes of a nurse.

**Benyamin Cohen:**

Do you think nurses have a closer relationship with the patients?

**Dr. Polina Stepensky:**

Yes.

**Benyamin Cohen:**

Because they spend more time?

**Dr. Polina Stepensky:**

Yes. I think yes. Because you know, as physicians sometimes we don't have time. We don't have time to speak. We don't have time to listen. We don't have time to sit with the families. I am trying to do it, but if I have a list of 25 patients and also I have in-patient service, sometimes it's very difficult to do. I think

one of the things that I learned during my experience is to hear the nurses and to listen to them and to listen to their experience and their vision. It's very, very useful for physicians.

**Benyamin Cohen:**

Tell us a little bit about what you do here at Hadassah. Which department do you work in and what is involved in that?

**Dr. Polina Stepensky:**

Yeah, so I graduated medical school in 1998 and I started my residency in pediatrics here at Hadassah Mount Scopus. And after it, I did pediatric hematology-oncology and bone marrow transplantation. Now I am the director of Department of Bone Marrow Transplantation and Cancer Immunotherapy.

**Benyamin Cohen:**

Is that just with children?

**Dr. Polina Stepensky:**

No. I am also responsible for adults and children, but my first specialty is pediatrics. So I have a big experience with genetic diseases, with diseases of the immune system, and with some congenital and genetic problems with bone marrow. But also I'm working with patients with leukemia and lymphoma for different kinds of patients for whom transplantation of bone marrow is only the single chance to be cured.

**Benyamin Cohen:**

And Hadassah, they were one of the first in Israel to do bone marrow transplants?

**Dr. Polina Stepensky:**

Yes. It was in 1982. It was the first and the biggest department in Israel in the field of bone marrow transplantation.

**Benyamin Cohen:**

How many bone marrow transplants do they do here a year?

**Dr. Polina Stepensky:**

Last year we did 174.

**Benyamin Cohen:**

Wow.

**Dr. Polina Stepensky:**

Yes. During more than 30 years, at Hadassah we've performed than 4,000 transplants.

**Barbara Sofer:**

I'd like to ask you. People often ask me why you brought the transplants to a new level. People come from different countries in the world where they have bone marrow transplantation, but they're not

successful. But you're successful. For those of us who aren't doctors it's hard for me to explain what you do and I'd like you to give it another try to explain why people say you're the only one in the world who can save children and sometimes adults. Can you tell us about that?

**Dr. Polina Stepensky:**

I think it's very good because it's why we are so successful, because we are thinking not only about the disease, but also about the basic science behind the disease. We are trying to understand the genetic defect, the molecular defect, and to understand what happened and what is wrong within the cells and within the bone marrow. And not only to see the disease but to understand the mechanism of the disease. If you understand this very deeply, it's much easier to transplant. Because we understand what exactly we have to fix and how to fix it and which level of immunosuppression we need to perform the transplant. So I think it's very useful to understand the basis of the process, the basis of the profession, not only okay, we can give this medicine and this medicine, this is the dose.

**Barbara Sofer:**

In a way, it's the most personalized medicine in medicine, is that right?

**Dr. Polina Stepensky:**

You're absolutely right. It's very personalized because if I know the genetic defect and I checked what happened with the cells of the patients, because we are trying also to do it in lab, to understand what happened within the cell. If I understand what happened within the cell, I know how to fix it. What is the dose of medicine? Maybe we can give more, maybe we can give less, so it's very personalized. We are trying to tailor the treatment according to patient.

**Benyamin Cohen:**

When we return, Dr. Stepensky tells the incredible story of how Russian families reached out to her to help save their children. Plus, she discusses the unique multiculturalism at Hadassah hospital.

**Dr. Polina Stepensky:**

It's an amazing experience and I think it's very good because we are enriching each other.

**Benyamin Cohen:**

All that and much more after the break.

**Benyamin Cohen:**

It seems that news headlines about the coronavirus are changing each and every day. Keep up to date with everything that Hadassah Hospital is doing to help combat this deadly disease, from discovering ways to alleviate the symptoms of COVID-19 to being part of the global effort to develop a vaccine. To find out how we're dealing with the crisis, visit our website at [haddasah.org/covidupdates](https://haddasah.org/covidupdates). That's [haddasah.org/covidupdates](https://haddasah.org/covidupdates). We're posting frequently about how our doctors, nurses, and researchers are working to fight the further spread of COVID-19. You can also follow Hadassah's latest coronavirus updates on our social media accounts on Facebook, Instagram, and Twitter.

*And now back to our conversation with Dr. Polina Stepensky.*

**Barbara Sofer:**

In a sense we know that in our population in Israel many people still marry first cousins or second cousins.

**Benyamin Cohen:**

My grandparents were first cousins.

**Dr. Polina Stepensky:**

Yes, it's very common. It's very common.

**Barbara Sofer:**

Yes. It's a little less common I think among Jews now, but certainly among the Muslim population people marry cousins. It's a strategy to get people similar backgrounds and also to keep property within the family and they have fewer divorces. But genetically it's a problem. Yet, this genetic problem has another side in which you're able sometimes to cure diseases. Can you explain that?

**Dr. Polina Stepensky:**

It's a very good question. We just wrote a chapter for the textbook of immunology about this problem and I can say to you that around the world more than one million people, one million people came from-

**Barbara Sofer:**

That's a billion in American. Right?

**Dr. Polina Stepensky:**

Yes, yes. Came from the family with inbred marriages. So it's more than, it's like 20% of the population. You know? It's a huge number. You're absolutely right. You know, because when we have these consanguineous marriages, we have a higher chance for some genetic disorders. And it is a cause I was focused on with this genetic disorders because it's not so rare here in Israel in Jewish population, but even much more common in Muslim population. So I started here in Israel, but now the people from different countries around the world are coming to me. You know, from former USSR, but also from Romania, from Jordan, from Egypt. I have all these patients who are coming to me. Also I have online consultations all the time from France, from Germany, from UK because they are facing the same problem. From US. Also from New York, you know, because in New York is a big Jewish population with high rate of consanguinity. And they have all these problems.

**Dr. Polina Stepensky:**

We have the experience and it is because we have the experience we have a very good genetic department here at Hadassah headed by Professor Elpeleg. So we found a few new genes. We understand what happened within the cells. What happened within the body with this genetic mutation? How do we fix it with transplantation? So even in many, many cases we were the pioneers in the world who transplanted these children. And it is a great experience because you understand how you can connect genetic mutations, some genetic problem, to some functional problems within the body and how to treat it and how to cure these children. It is amazing, you know? I think it's an amazing story also, these children who are absolutely healthy now.

**Benyamin Cohen:**

You mentioned a lot about the different nationalities that are coming in here and different cultural backgrounds. Hadassah is a very unique place where you're going to ... A lot of the doctors and nurses here, they're trilingual. English and Arabic and Russian. Tell us about that.

**Dr. Polina Stepensky:**

You're absolutely right. I really like it here at Hadassah that it is very multicultural. So we have the people from different backgrounds within the team, but also our patients coming to us from different backgrounds. It is an amazing experience, you know? Because even in my team I have people who came to me from France, they're working with me. Many Israelis. People who are coming from different parts of USSR because, you know, it's a huge country. It was a huge country. So people came from different parts of it. It was from Lithuania, Estonia, Ukraine, Russia, Georgia, Armenia. It's so different. Also people who are working with me, many physicians from the Palestinian Authority. I have my colleagues from Australia, from US, from UK.

**Dr. Polina Stepensky:**

It's an amazing experience and I think it's very good because we are enriching each other with different visions, with different culture, with different approach to many things. Because the majority of us, we graduated here in medical school, but during the last few years I worked with my colleague from Australia and she graduated medical school in Melbourne and she did PhD in my lab and it was amazing because it's a little bit different approach. It's the same medicine. Also, we can approach our patients with different approaches from the same background. I understand, I think, much better the people who are coming from former USSR than somebody who doesn't understand what it means. I think it's a fantastic experience here at Hadassah.

**Benyamin Cohen:**

How long have you been here at Hadassah?

**Dr. Polina Stepensky:**

I'm sorry?

**Benyamin Cohen:**

How long have you been here?

**Dr. Polina Stepensky:**

25 years.

**Benyamin Cohen:**

Wow, wow.

**Barbara Sofer:**

I would like to ask you about a story that always moved me, how a cleaning woman in a far-off place in Russia, in the Soviet Union, I guess in Russia, too. So far no one I'd ever known had heard of it, had no hope for her child who had osteopetrosis. Not osteoporosis, but osteopetrosis, like Petrified Forest, that the bones of the body were turning into rock, into stone. First the patient, first a child goes blind and

then a child goes deaf and then the child dies. It was a beautiful grandchild and she needed to help and somehow she saw the name Hadassah on the internet. She wasn't a highly educated person, but she was a cleaning woman, in fact, and she sent out a letter in Russian, in Russian letters even, to Hadassah and the next day she got a letter back from you in Russian. "I think I can help your grandchild." Can you tell us the rest of that story?

**Dr. Polina Stepensky:**

Yeah. It's a great story and it was in the beginning, but from this time I think we transplanted maybe more than 40 children from Russia with the same disease. This dispirited grandmother, she wrote the letter, but when I see the letters from the patients I am immediately answering and trying to answer during 24-48 hours. In the night, doesn't matter, but I understand what it means for patients and for families if they are looking for some hope for a cure. This child came to Hadassah. We transplanted him from an unrelated donor and now he's absolutely fine. He's doing really well. I have many, many stories of these children and my phone is full of pictures of my patients who are absolutely healthy now. I think we have a privilege that we can treat everybody regardless of origin, regardless of borders, because all these children are children. They are children.

**Benyamin Cohen:**

Right. They didn't choose where they're from.

**Barbara Sofer:**

Is it true that you have the greatest success of all the centers in the world? I know you're modest, but isn't it true that you have, in treating osteopetrosis, the best results of any center in the world?

**Dr. Polina Stepensky:**

But I think we have maybe one of the largest cohort in the world with very good results. You know, recently we published our experience and it's too good to be true – but it's 100% survival.

**Benyamin Cohen:**

Wow.

**Barbara Sofer:**

Yes. That's what I wanted to say. You are ...

**Dr. Polina Stepensky:**

We have good results.

**Benyamin Cohen:**

What did it mean to you being able to give back to your native country by helping save these children from where you were originally from?

**Dr. Polina Stepensky:**

I'm originally from Ukraine, but it doesn't matter, you know? It has the same mother tongue. I think it's a great experience for me because the people coming to me are usually very dispirited. You know? They were in a few places around the ... they were in Russia, they were in Germany, they were in the UK, but

one of the good things that they can find here – first of all, I know Russian. Okay? And second, I am already graduated here, so I have a combination of modern medicine and also understanding of cultural background and language. So for me it's a great experience, but I think also for them because we are in touch after the transplant for many years. First of all, we have to check the patients.

**Dr. Polina Stepensky:**

Okay, we have to take some blood tests and to check the level of engraftment and to see that everything is fine, but also from an emotional standpoint. You know, they are like my children.

**Benyamin Cohen:**

You said you have pictures of them on your phone as if they were your real children?

**Dr. Polina Stepensky:**

Yes, yes.

**Benyamin Cohen:**

Wow.

**Dr. Polina Stepensky:**

My children, they already know many of them. Usually, you know, it's Boris and this is Aviram and this is Tomer. So they know many of them.

**Benyamin Cohen:**

When we return, Dr. Stepensky talks about her hopes for the future of her department.

**Dr. Polina Stepensky:**

We are trying to achieve new technologies, to bring new technologies here to Hadassah. We started already our program with a gene therapy facility, gene editing facility.

**Benyamin Cohen:**

All that and much more after the break.

**Dina Kraft:**

I'm Dina Kraft, the host of a podcast called The Branch, which tells the stories of relationships between everyday Israelis and Palestinians, Jews and Arabs. I've been reporting on the lives of Israelis and Palestinians for two decades and people always ask me, "Will things ever get better?" No doubt, the road is long but when peace does come it will be thanks to the groundwork being laid by the people whose story we tell on The Branch. On our show you'll meet musicians who perform together every night, teachers in a bilingual school, social activists who share their struggle, and even parents whose children were killed in the conflict but who have chosen reconciliation over revenge. The Branch, stories of real people forging strong connections and having important conversations even when it's complicated. Brought to you by Hadassah. Find us anywhere you listen to your podcasts or [Haddassah.org/thebranch](https://Haddassah.org/thebranch).

**Benyamin Cohen:**

And now back to your conversation with Dr. Polina Stepensky.

**Benyamin Cohen:**

How tough is it? You do a lot of work with children; it must be very stressful and demanding to have to relay bad news to parents. I mean, I can only imagine what's going through your mind when you have to have those kinds of conversations.

**Dr. Polina Stepensky:**

You're absolutely right. You know? I am already many years in medicine but it is still for me – I am crying for those patients, still crying for those patients, but I understand that this is a part of our work. I prefer to do it by myself because usually I have very good relationships with patients and with families. I think that if we have to say something bad it's better to hear from somebody that you rely on him. It's not easy. I still sometimes don't know how to enter into the room and how to say what I have to say. But it's possible to learn it. It's possible to teach it, but you need experience.

**Benyamin Cohen:**

I bet your previous experience as a nurse probably comes in handy.

**Dr. Polina Stepensky:**

Yes, yes, definitely.

**Benyamin Cohen:**

During those times. Yeah.

**Dr. Polina Stepensky:**

Definitely. Because one of the things that I know, I have to be with family, I have to be experienced, but I also have to be professional. So I can sit with them and cry two hours, but I have to help them. Also in many, many cases if I'm going to say something bad I have to at least try to offer some solution. Sometimes we don't have any solution and in this case I can only be with the family, that's the thing that I can do.

**Benyamin Cohen:**

There's a fine line between, you know, we can tackle this disease, but I don't want to give you false hope. How do you deal with that?

**Dr. Polina Stepensky:**

It's very good question because if I'm going to speak about some disease, practically in the majority of cases we have something to offer. Okay? Now we have modern medicine and we can try to do something. I can explain that maybe it's only 5% of success. But I didn't meet any patient in any family, they told me no, I don't want 5%. Okay? No.

**Benyamin Cohen:**

Right, right.

**Dr. Polina Stepensky:**

The majority, almost all of them, "Okay, we want to take 5%. Let's try." Sometimes I don't have even 5%, okay? So I have to say the truth and I cannot give a false hope. I cannot lie because I don't know how to do it. I think it is very, very difficult to balance between these things. I don't think that we have something right or wrong. It's very personal.

**Benjamin Cohen:**

Sure. You have a very stressful job and you're an overachiever in the professional world. I'm wondering what you do when you're not working to help decompress and to help destress?

**Dr. Polina Stepensky:**

Yes. I have a fantastic family. My children and my husband, we are with my husband almost 30 years, 30 years together. We came together. He is an electrical engineer and it's very good he's not a physician. My children also –my son is 25 years old. He is now in law school at Hebrew University here and my daughter just now finished her military service.

**Benjamin Cohen:**

What does she want to do after that? Does she know yet?

**Dr. Polina Stepensky:**

She wants to be a lawyer also. No, she's also going to law school. Yeah. She's also going to law school.

**Dr. Polina Stepensky:**

I really like to read, to travel, to see movies.

**Benjamin Cohen:**

What was the last good movie you saw?

**Dr. Polina Stepensky:**

The last movie?

**Benjamin Cohen:**

The last good movie.

**Dr. Polina Stepensky:**

Good movie, it was a movie festival here in Jerusalem and it was a movie of Pedro Almodovar.

**Benjamin Cohen:**

Pedro Almodovar.

**Dr. Polina Stepensky:**

Yes.

**Benjamin Cohen:**

You remember which one?

**Dr. Polina Stepensky:**

Yes, "Pain and Glory."

**Benyamin Cohen:**

That sounds like a lot of what you do at the hospital. Pain and glory.

**Barbara Sofer:**

Speaking of movies, many of us have seen the series called "Chernobyl."

**Dr. Polina Stepensky:**

Yes.

**Benyamin Cohen:**

On HBO.

**Dr. Polina Stepensky:**

Yes.

**Barbara Sofer:**

When I saw it, I thought of you both because you come from the Ukraine and because you've been treating patients your whole life who have the diseases caused by Chernobyl. Could you tell us, did you watch that series?

**Dr. Polina Stepensky:**

Yes, on HBO. Yes.

**Barbara Sofer:**

What did you think?

**Dr. Polina Stepensky:**

I think it's a great series. It's a great series because it is very true. I graduated my school during the Chernobyl tragedy and I remember it very, very well. It was a lot of lies, but we knew that it was – many, many lies that we knew about it. We knew that it's dangerous, but nobody knew what the level of radiation is and what happened in truth. After it, we met many patients who suffered from leukemia, from aplastic anemia, from thyroid cancer, from radiation which they got during Chernobyl.

**Barbara Sofer:**

There's a rumor that Putin wants you back. It's not based on nonsense, right? Am I right?

**Dr. Polina Stepensky:**

Yes. I have an invitation, all the time. They are asking me, "It is the time to come back."

**Benyamin Cohen:**

Would you ever?

**Dr. Polina Stepensky:**

No.

**Benyamin Cohen:**

No?

**Dr. Polina Stepensky:**

My life is here. I am here already more than I was in USSR. I am in Israel 30 years. So I build myself here, my family, and my children. My children are totally Israeli children. Totally, you know? Even when we were in Minnesota and they asked if I want to stay in Minnesota my children say, "No, no. We are going back."

**Benyamin Cohen:**

What language do you speak at home?

**Dr. Polina Stepensky:**

Hebrew. They're Russian is not bad. Now they are trying to improve their Russian by themselves. They understood that it's not bad to know Russian.

**Benyamin Cohen:**

Probably better than my Russian, I'm guessing.

**Dr. Polina Stepensky:**

But they know also Spanish, French, Arabic.

**Benyamin Cohen:**

Wow.

**Barbara Sofer:**

I'd like to ask you, when you look back and I know everybody told you only geniuses go to medical school and you should just ... you went to nursing school, not that there's anything wrong with being a nurse, but it wasn't your dream. Yet, at some point, you made your dream come true. I'd like you to think to all the listeners here how you made that dream come true. What did you think? What made you go after the dream? What made you think I'm never giving up that dream? And maybe give some advice for those dreamers who are listening about how to pursue their dreams?

**Dr. Polina Stepensky:**

I think, you know, if you have some dream and you have some aim, some purpose, you have to go to your purpose and to your dream and to your target. My target was to help people, to do science, to learn more, to understand different diseases, and to help more people. It was my purpose. It was not easy all the time, but it was also not so difficult because I knew that I have to work hard, I have to learn,

I have to do what I'm supposed to do and to do it by best way that I am able to do. That's all. It's not so difficult.

**Barbara Sofer:**

You were already married with children?

**Dr. Polina Stepensky:**

Yes, yes. You know, but also definitely it's not easy and I have a very supportive family. My mother is amazing and she is very supportive ... My husband is, you know, the biggest treasure that I've found in my life. But you know, also they were part of all these achievements because it is not only my achievement if I achieve something. It is the achievement of all my family. They know about every manuscript that is published. They know about every success in my life and in my work and I think it's very good because it's also like personal example for children. They know that I am working hard so they're used to working hard. They know it's okay, it's fine if they have to do some exam and they have to learn for 24 hours they will learn for 24 hours. They will study.

**Benyamin Cohen:**

Right. If you and I were to meet again in five or 10 years where do you hope to be then? I know your department is moving into a new facility. What are your hopes and dreams for the next few years?

**Dr. Polina Stepensky:**

Yes, definitely. We are trying to achieve new technologies, to bring in new technologies here to Hadassah. We started already our program with gene therapy facility, with gene editing facility.

**Benyamin Cohen:**

Wow.

**Dr. Polina Stepensky:**

We are trying to. First of all, we got an accreditation to give chimeric antigen receptor T cells.

**Benyamin Cohen:**

Say that again.

**Dr. Polina Stepensky:**

Chimeric antigen receptor T cells. CAR T cells.

**Benyamin Cohen:**

Okay.

**Dr. Polina Stepensky:**

These are the cells from the patient which underwent genetic modification to attack cancer cells. We have a certificate to get it from a commercial company, but also we are doing by ourselves. We are trying to develop CAR T cells for different diseases. It's very personalized. So we need a vector, a gene that we can bring within the cells of the patients and to modify them to attack cancer cells.

**Benyamin Cohen:**

So if a patient, just to give me an example. A cancer patient, you can create genetically modified T-cells that can attack that patient's cancer?

**Dr. Polina Stepensky:**

Yes. You are right.

**Benyamin Cohen:**

Wow.

**Dr. Polina Stepensky:**

But genetically modified T-cells from the patient himself, you understand?

**Benyamin Cohen:**

Yeah.

**Dr. Polina Stepensky:**

It is the future.

**Benyamin Cohen:**

Wow.

**Dr. Polina Stepensky:**

And it is something that I really plan that after a few years we will be able to give here.

**Benyamin Cohen:**

At Hadassah?

**Dr. Polina Stepensky:**

Yes. We are working on it in my research lab.

**Barbara Sofer:**

I do want to ask you and I know you're so modest that you don't like to answer these questions, but I know that you had a lead article in "Blood," which is one of the great medical publications in your field, and that you are considered throughout the world one of the great experts. Can you describe how you feel knowing that?

**Dr. Polina Stepensky:**

You know, I'm not thinking about it every day. But I think it's very nice to be a part of a scientific community and to represent Israel in many, many opportunities around the world. To show that we are able to produce good science here in Israel. You know? We don't have resources like in the US or Europe, but I think we are able to do very good science, very good level of science. I think it is not only my pride but also pride of my family, pride of country. I'm very happy that I can be a part of it.

**Benyamin Cohen:**

Yeah. You came all the way from Ukraine not knowing what you'd be able to do and then all of the sudden, you know, not all of the sudden.

**Dr. Polina Stepensky:**

Yes.

**Benyamin Cohen:**

But you were able to accomplish all of that.

**Dr. Polina Stepensky:**

I am sure not.

**Barbara Sofer:**

I can tell you that in the name of all the members of Hadassah in the United States and supporters around the world that we're all proud of you and we're so glad that you always bear the Hadassah name. It's great pride for all of us.

**Benyamin Cohen:**

Dr. Stepensky, I know you have a very busy schedule so we really appreciate you taking the time out to chat with us. It was a really fascinating conversation.

**Dr. Polina Stepensky:**

Thank you very much.

**Benyamin Cohen:**

Thank you.

**Dr. Polina Stepensky:**

It was my pleasure.

**Benyamin Cohen:**

*Spasiba.*

**Dr. Polina Stepensky:**

*Puzhalsta.*

**Benyamin Cohen:**

Pozhaluysta.

**Benyamin Cohen:**

Hadassah on Call: New Frontiers in Medicine is a production of Hadassah, the Women's Zionist Organization of America. Hadassah enhances the health of people around the world through medical

education, care, and research innovations at the Hadassah Medical Organization. For more information on the latest advances in medicine please head on over to [hadassah.org/news](https://hadassah.org/news). Extra notes and a transcript of today's episode can be found at [hadassah.org/hadassahoncall](https://hadassah.org/hadassahoncall). When you're there, you can also sign up to receive an email and be the first to know when new episodes of the show are released. Subscribe to our show on Apple Podcasts, Google Play, or your favorite podcast app. If you haven't already, please leave us a review on the Apple Podcast store. It only takes a minute and when you do it helps others discover Hadassah on Call. The show is edited by Skyler Inman and produced by the team at the Hadassah offices in both New York and Israel. I'm your host Benyamin Cohen and thanks again for joining us today. We'll see you next month.