

Mayo Clinic Q & A - Dr. Tambi Jarmi - Pancreas transplant - ...

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SUMMARY KEYWORDS

pancreas transplant, transplant, patients, diabetes, pancreas, transplant center, diabetic patients, organ, insulin, diabetic, life, small bowel, blood sugar, mayo clinic, center, abdomen, hope, meaning, cure, solid organ transplant

SPEAKERS

Dr. Halena Gazelka, Narrator, Dr. Tambi Jarmi

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- N** Narrator 00:01
Coming up on Mayo Clinic Q&A,
 - D** Dr. Tambi Jarmi 00:04
I believe any diabetic patient deserves a chance to be educated about pancreas transplant and maybe evaluated. These types of patients that they only have diabetes that have not been controlled. Those are the best candidates for a pancreas transplant alone.
 - D** Dr. Halena Gazelka 00:22
Diabetes occurs when the pancreas doesn't produce enough insulin, or the body is resistant to insulin. For those with severe diabetes, a pancreas transplant may be an option to bring life back to normal.
 - D** Dr. Tambi Jarmi 00:37
The idea of a pancreas transplant actually is to cure diabetes. I like to call the pancreas

transplant or the pancreas as an organ as an organic pump. The mechanical pump does not cure, it controls. The organic pump, which in the pancreas transplant, it does cure.

D Dr. Halena Gazelka 00:55

Welcome everyone to Mayo Clinic Q&A. I'm Dr. Halena Gazelka. Today we are going to talk about an exciting treatment for diabetes. Diabetes is a lifelong chronic disease with the potential for significant complications. But major advances have been made in its treatment over the last decade. Despite this, a number of people with diabetes still struggle with the disease. To restore normal insulin production and improve blood sugar control, pancreas transplantation may be a good option for some patients. Joining us to discuss this today is Mayo Clinic nephrologist, Dr. Tambi Jarmi. Thanks for being here today Dr. Jarmi.

D Dr. Tambi Jarmi 01:34

Absolutely. It's my pleasure.

D Dr. Halena Gazelka 01:36

Well, before we get started, would you just remind our listeners, what is diabetes, and there are type I and type II? What's the difference?

D Dr. Tambi Jarmi 01:45

Correct. Diabetes is an abnormality in consuming or metabolizing their blood glucose. So, diabetic patients, they have a hard time adjusting their blood sugar to the level that their cells need it. And it could be a result of a deficiency in the production of the insulin, which comes from the pancreas, the organ that is responsible to produce the insulin to control the diabetes, or it could be a result of a resistance to that insulin. So, when we have more of a resistance, it's called type II. If we have a production problem, it's called type I. That's the main difference between the two, and both of them will result in an abnormal blood sugar in this patient population.

D Dr. Halena Gazelka 02:36

That's interesting, Tambi. So, in the second, type II diabetes, you essentially have what you need, you just can't use it, correct?

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Dr. Tambi Jarmi 02:44

That's absolutely right. You do have what you need. It's that you can't use it, and maybe you don't have enough of what you need, but the production process is relatively intact.

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Dr. Halena Gazelka 02:57

What in the world is the pancreas? Where is it, and what does it mean to have a transplant?

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Dr. Tambi Jarmi 03:02

So, the pancreas is in the mid abdomen or in the middle of the abdomen, and it's in the back close to the spine. It's attached to the small bowel that comes right after the stomach and is attached to the small bowel. And to have a pancreas transplant, it's a replacement of the endocrine function, what we call it. It's not a replacement to the digestive function of the pancreas because the pancreas has two major functions. One is to control the blood sugar in the bloodstream, and one also to provide the appropriate digestive enzymes to help us digesting the food. So, that's why it's connected to the small bowel. What it means to have a pancreas transplant, it's not to take the old one out and put a new one, actually the old one stays in. The surgery is far away from the old pancreas, and the old pancreas continues to function and help the digestive system. So, that functionality will not be changed or altered by the pancreas transplant. The pancreas, the organ that's been transplanted, will mainly be for diabetic controls or blood sugar treatments. It will not provide any digestive benefit to the patients.

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Dr. Halena Gazelka 04:33

So, are you actually taking a pancreas from someone else who is deceased and transplanting it in as we might with another organ?

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Dr. Tambi Jarmi 04:40

Correct. So, in the United States and in the world, a living pancreas transplant is not something that's popular. So mainly, it's a diseased pancreas transplant. So, we take the organ from a deceased donor and the organ comes with a piece, actually of the small bowel of the donor, and that gets attached to the small bowel of the recipient in the front part of the abdomen, and also the organ will be connected in terms of the blood flow. The pancreas should receive blood flow from a small anastomosis with the patient's circulatory system, and it drains also through the venous system. Technically, you will not

be able to feel it even though I'm saying it's in the front of the abdomen, but it's still inside the abdomen, but in front means it's away from the native organ. You will not be able to feel it or touch it or say hey, I have a pancreas transplant. No, that's not the case. It will stay inside the abdomen, and hopefully it will cure the diabetes

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Dr. Halena Gazelka 05:53

You mentioned about type I and type II diabetes. Are transplants appropriate for both types?

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Dr. Tambi Jarmi 06:00

The idea of a pancreas transplant actually is to cure diabetes. So, so far, we do have so much advancement, I think into the diabetic care, all the technology, all the pumps, the glucose monitor, all the systems and I like to call the pancreas transplant or the pancreas as an organ is an organic pump. So, rather than have a mechanical pump, that actually does a great job, but we all need to remember that the mechanical pump does not cure, it controls. The organic pump, which is the pancreas transplant, it does cure. So, my patients a lot of times they will have a really hard time understanding the concept that they're not diabetic anymore. And we have a really hard time with some of them to get them to stop checking their blood sugar, because they've been suffering from this disease for a long time. And they still use to check their blood sugar with a finger. And we tell them you're not diabetic. So, in 2000, if I remember correctly, 18 or 19, around that time, UNOS, the organization that regulates who is a candidate and who is not, all give recommendations in the United States for organ transplant, took that term from the candidacy recommendation meaning type I and type II. So, there is no difference when it comes to transplant between type I and type II, the only major factor is, is the patient using insulin? If so, then why don't we use an organic pump rather than a mechanical pump? So, that's the main issue so far.

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Dr. Halena Gazelka 07:57

That's really interesting to me. I'm not sure that it quite makes sense to me for type I diabetes, I can think through if you don't have enough insulin, you have a new pump that's making insulin. However, if you're a type II diabetic and you have insulin, but you just can't use it, why does making more insulin improve that?

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Dr. Tambi Jarmi 08:16

Because in a type II patient, when they get too difficult to control, they end up on insulin.

So, they have some, they need more.

D Dr. Halena Gazelka 08:28
Okay.

D Dr. Tambi Jarmi 08:29
So, that more could be provided by the organic pump. Still remember, they still have the old pancreas that's still there still providing some and they get an additional. In the type I, they don't have any, so they get a fresh start with a new organ.

D Dr. Halena Gazelka 08:46
That makes perfect sense. Thank you for the explanation. How do you decide if someone is a candidate for a transplant?

D Dr. Tambi Jarmi 08:54
This is actually a very important question because I believe any diabetic patient deserves a chance to be educated about pancreas transplant and maybe evaluated. Now our target is to cure diabetes and ultimately minimize the side-effects or the downstream effects of diabetes. So, the way we decide who is a candidate or not, if the patient is doing absolutely great with their diabetes, meaning hemoglobin A1C is close to normal, on target, they don't get ups and downs on the blood sugar, they don't get hospitalized because of the ups and downs on the blood sugar. Their social support is not also suffering because of their diabetes. Meaning a mom that does not need to drive the child all around because the child has diabetes and they are afraid that they could pass out from high or low, meaning a husband cannot leave his wife at home because he's afraid she's going to go low or high. So, these patients need to be evaluated, versus the one that's doing great, they could stay where they are. But the one that's really suffering from controlling the diabetes, I think they deserve a chance to be evaluated, and they should be a candidate.

D Dr. Halena Gazelka 10:21
In a moment, we're going to talk about the different types of pancreas transplant. But can children have transplants as well as adults? Is there an age range when they're provided?

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Dr. Tambi Jarmi 10:32

Technically, yes, they can. But usually, it's an adult procedure more than children not for any reason, except compliance. So, transplant is a major process, and they have to take medications after the transplant forever. And there is a significant risk of skipping the medicines. And we all know at age 18, maybe, I don't know what age, until you get really following instructions. So, we don't want to risk that the child you know, at age 18, do a transplant, they feel great, they think they're doing great, and they start skipping the medicines. That's the scary part of it. So, we wait a little bit until they are really like involved in their life, daily activities and are responsible.

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Dr. Halena Gazelka 11:24

Right, so they can take responsibility for the decision essentially. Tell us about the three types of pancreas transplants and why each of them might be used.

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Dr. Tambi Jarmi 11:34

So, there are different ways of dividing the pancreas transplant. The main one is the pancreas transplant alone, what we call it is the pancreas will be used for an early diabetic patient. And that's what we hope for, that diabetic patients only struggling with diabetes control at this point, but they have not yet developed significant other end organ damage. They don't have advanced kidney disease, they don't have advanced heart disease, or advanced retinopathy, or neuropathy, or losing one of their legs because of the vascular injury because of the diabetes. So, these type of patients that only have diabetes, that have not been controlled, those are the best time or the best candidate for a pancreas transplant alone. Now, the combined pancreas and kidney is kidney disease's number one complications is diabetes.

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Dr. Halena Gazelka 12:33

Which is why I'm talking to a nephrologist today, right, specializing in kidneys?

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Dr. Tambi Jarmi 12:37

Correct. So, the majority of the pancreas transplants in this country or in the world, are done as a combined kidney/pancreas. And somehow, it's unfortunate too. That means we left the diabetes for a long time to damage the kidney. And now we have to replace both organs. The pancreas after kidney, or also we do pancreas after other solid organ transplant. Those are the patients that received the kidney transplant, they were young,

they received it at age 25 for whatever reason. And then down the road, they developed type II diabetes, or they had a pancreatic injury that caused them to have diabetes, then we could do a pancreas after the solid organ transplant. So, it could be done in multiple ways. But at the end, it does the same job, it cures the diabetes.

D Dr. Halena Gazelka 13:32

It's amazing. Tell us a little bit more about how a transplant is performed.

D Dr. Tambi Jarmi 13:39

So, in general, what we do in the process is we detect, or we get a chance to evaluate diabetic patients. And obviously, the evaluation process is extensive. We need to make sure that the diabetic, whoever is being evaluated, is completely checked and ready to go through a short period of time, which is the transplant surgery itself and a long period of time that we hope that they outlive the organ, meaning we hope that they have a great life to come. So, we examine them sort of head to toe to make it simple and make sure they are good to go. And then they will be listed. The good news is the wait time for a pancreas transplant is actually a lot shorter than kidney transplant. It averages in the United States about one year to wait for an organ versus six years for a kidney.

D Dr. Halena Gazelka 14:40

Wow.

D Dr. Tambi Jarmi 14:41

Yes, yes sometimes I have been involved in patients that we transplant them within months. So, it's very quick, and they just have to wait. Once we call them, they show up in the transplant center. They get transplanted. The length of stay is about six days here in our transplant center, and after that, their life has changed. They are totally healthy, non-diabetic, they could resume their lives, they could, you know, this ability from diabetes will go away. They go back to society as a productive person, and a new chapter of their life will start.

D Dr. Halena Gazelka 15:24

I would think that has to be an incredibly life-changing, even mentally challenging for people because you've been told maybe from the time you were a child that you need to count your carbohydrates, you need to watch your sugar intake in particular, things like

that. And then to be able to not have to think quite so tightly about those things, that has to be quite a lifestyle change.

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Dr. Tambi Jarmi 15:48

Correct. And I wish we had a chance to share our patient's experience with the diabetic patients, because it is life-changing. You cannot imagine how happy the patients are with a successful transplant. You know, we have patients that could have a normal social life. We had a patient that was able to get pregnant after the transplant and have a normal pregnancy without checking her blood sugar, and a healthy child. So, it is, and it gets to the simple things in life too. And you know, I have patients tell me, well, now I can eat ice cream, and I don't have to worry about it. I mean, these things, maybe for non-diabetic patients are normal, things that we do every day, but diabetic patients really suffer during their course of disease. And for little things, you know, I mean, we eat ice cream, and we don't care too much.

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Dr. Halena Gazelka 16:44

Right? Or to be able to go to a birthday and have a slice of someone's birthday cake.

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Dr. Tambi Jarmi 16:47

Correct. And you don't have to worry about it and count how many calories you did and what extra dose of insulin you need to give yourself. That's all gone. And they are extremely happy after the successful transplant.

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Dr. Halena Gazelka 17:01

Are there any side-effects of having a transplant?

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Dr. Tambi Jarmi 17:04

Of course, you know, any surgery, there are two output into two categories in the immediate side-effects and long-term side-effects. The immediate side-effects, it's related to the surgical procedure itself, you know, patients could with a minimum very small percentage, they could get a complication from surgery in terms of a wound infection or bleeding. In the long run after the transplant, the main side-effects are the side-effects related to medications. There is a slight increase of a long-term cancer because of the medications, and that's something that gets a little bit overlooked at when patients try to look up the information and they get scared of it. But it's actually less than 4% increased

risk. It's not like you are talking about 50% increased risk. And once you are a transplant patient, you are attached to a transplant center for the rest of your life. And we make sure that every health requirement is done. So, meaning we get them to have their annual checkup, their annual exams, their annual requirements, and anything that we could catch early I tell the patients we could fix and cure, even if it's cancer.

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Dr. Halena Gazelka 18:29

Well, what you said about you're attached to the transplant center for life. That's sort of a mutual relationship. But how do patients decide what should they look for when they're looking to pursue a pancreas transplant?

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Dr. Tambi Jarmi 18:43

I think that's very important, especially with the pancreas transplant because not too many centers in the country now are doing this. There is about 126 transplant centers in the United States, and I think less than 30 perform pancreas transplants if I'm not mistaken. So, it's important to find which center that does the pancreas transplant. Transplant Center does not mean they do pancreas transplant. They have to check for that. And these data is a public data. The to me, I think the most important part when you look at a transplant center is to find a center that has a team approach and consider you as a family member more than a patient. The patients actually will be surprised when they go to a transplant center because they'll have a pre-transplant nurse coordinator and post-transplant life nurse coordinator. They get to know them extremely well on a personal level. And that's what's important, that you have a team approach and accessible personnel in that center that can answer your concerns and answer your questions in a timely fashion. I always tell everybody I know that we are proud, that we take ownership of what we do. Those patients are our patients, they invested in these organs, we invested in these organs, we are obligated for the donor family to make sure that these organs that have been donated survive. And we cannot, you know, and that's the most important fact that in any transplant center, that follow these patients and cannot let their patients go anywhere else.

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Dr. Halena Gazelka 20:32

This strikes me as one of those things that you would want to go somewhere where this was performed regularly, where it was a regular part of practice, because it's a precious gift that you're being given. But it's also a major surgical procedure. And there's care before and after. So, I could see that you'd want a center that not only had a team, but good experience.

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Dr. Tambi Jarmi 20:56

Yes, absolutely. And unfortunately, you know, only a few centers, so the geographic distribution of the centers in the country play a role. So, patients they need to know which centers that do pancreas transplant and close to where they live, because it's, as I said, it's a lifelong relation. They are always going to go visit at least once a year, that center and have a complete checkup done.

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Dr. Halena Gazelka 21:23

Well, that's very interesting. Anything else to share with us today, Tambi?

D

Dr. Tambi Jarmi 21:26

I just hope that we have more access to diabetic patients. You know, as you mentioned earlier, that I'm a nephrologist. I'm a not a diabetic doctor. So, we need to get this amazing opportunity or health advantage to the patient population that's in need. And I hope we will in the future, we'll be able to maybe transplant everybody that needs it. I hope so, I don't know if we could do that. But at least the patient that is in emergent or urgent need for a pancreas transplant, I hope we reach them, and they reach out to us and we'll get things done.

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Dr. Halena Gazelka 22:11

And I know that I signed up to be an organ donor after having discussions about the need for organ donations. And what a challenging time for families when they are in a situation where their loved one is deceased, but to see them live on in many others is very gratifying as well.

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Dr. Tambi Jarmi 22:30

You're absolutely right. There is a fact that every potential deceased donor could save seven lives.

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Dr. Halena Gazelka 22:40

Oh, wow.

D

Dr. Tambi Jarmi 22:41

That's not one or two, it's seven lives. So, it's amazing thing to be an organ donor, and it does really change a patient's life. It does. We see it every day.

D Dr. Halena Gazelka 22:53
Thank you for being here and sharing with us today, Tambi. Any last words for our listeners?

D Dr. Tambi Jarmi 22:58
No, I hope the best for everyone, and organ transplantation is not like what it used to be 50 years ago. The medications we have, the advancement we have, we will get people back to normal life, and they will be back and productive in their society. And I don't think it sounds a big deal as it is. It's not. It's a very piece of cake.

D Dr. Halena Gazelka 23:28
And then you can have a piece of cake.

D Dr. Tambi Jarmi 23:30
And you can have a piece of cake. Maybe not that big piece of cake.

D Dr. Halena Gazelka 23:33
A little piece of cake.

D Dr. Tambi Jarmi 23:34
Yes, yes.

D Dr. Halena Gazelka 23:35
Thank you, Tambi, for being here to share with us today.

D Dr. Tambi Jarmi 23:38
Absolutely. Thank you so much.



Dr. Halena Gazelka 23:39

Our thanks to Dr. Tambi Jarmi, nephrologist at Mayo Clinic, for being here to discuss pancreas transplants for diabetes with us. I hope that you learned something. I know that I did. We wish each of you a very wonderful day.



Narrator 23:53

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