Dr. Mariam Hanna

Hello, I'm Dr. Mariam Hanna, and this is The Allergist, a show that separates myth from medicine, deciphering allergies and understanding the immune system.

It's honestly really scary being a parent. Seriously, babies don't come with an instruction manual, and if they do, it was written somewhere in IKEA. You spend months figuring things out, then food enters the picture, and some infants are apparently excited to eat, but most just spit it right back, and most are really messy. Some react, and then there's even more anxiety. Then you meet the allergist. Enter us.

I've been using more and more ladders in my practice, because hey, parenting can be scary, but many parents are in fact capable of navigating scary things. My evolving understanding of reaction thresholds has also influenced my thinking. There's often also more wiggle room than what we once believed, so maybe we can get away with it in more kids.

Recently, I finished a follow-up clinic full of kids who had received ladders through my clinic. As I reflected on those visits, a different question was arising: Have we over-medicalized infant feeding? Has a muffin a day become the new apple a day? And more importantly, what are ladders actually doing? Are they changing the natural history of food allergy? Or are they simply identifying children who are going to outgrow this allergy anyways, if you waited?

The question really sits at the center of some of the most important debates in food allergies nowadays: patient selection, safety, safety, safety, disease modification, and the role of dietary advancement therapies.

To help us explore all of that and what the evidence really tells us about the milk and egg ladder specifically, I'm delighted to welcome today's guest. Dr. Juan Trujillo is a consultant pediatric allergist at Cork University Hospital. He's a senior lecturer at the University College Cork. He is also a leading researcher in food allergy and immunotherapy. His work has focused on food allergy oral immunotherapy, and you betcha, food ladders. This guy has authored more than 50 peer-reviewed publications in the field, and a lot of them talk about ladders. Dr. Trujillo, welcome to The Allergist, and thank you for taking the time.

Dr. Juan Trujillo

Mariam, thank you so much for inviting me. I'm such a nerd about your podcast, so thank you so much.

Dr. Mariam Hanna

I always love having guests that are listeners. All right. So, in a nutshell, and this is going to be a long nutshell, but how do we summarize where we stand today around the evidence base for ladders for IgE-mediated food allergies?

Dr. Juan Trujillo

So, the answer will be quickly: we don't have enough evidence to feel that the ladders are are the best outcome for food allergy patients. However, because of necessity, we need to use them in particular places that needs this type of treatment. Okay?

And that is something that has been in my mind for the last seven years. I've been here in Ireland for seven years, and before that, I never even thought what a ladder was. I was trained in Spain, in Barcelona, and then I came to a place that it's not about how many ladders do we do for patients. Every patient with a milk and egg first diagnosed will have a ladder at the beginning, no matter what is the circumstances.

So that changed completely the way that I'm thinking about that, and the only thing that I did was recollect the information of gathering information from people like Jonathan Hourihane, Carina Venter, Rosan Meyer, that were introducing these ladders for IgE-mediated, and I recollected more than 15 years of information of that. So, that's what I did. I didn't invent the wheel.

Dr. Mariam Hanna

But it's impressive because we are using this term so comfortably everywhere that, really, have we moved a lot past expert opinion into evidence-based, or are we still acting out of necessity and blanket application for everybody?

Dr. Juan Trujillo

I hope that we have moved a little bit further. I don't want to say that we have moved for expert expert opinion yet. I think that the information that we have in comparison to the conventional treatment that is avoidance is still not enough, and it will never be enough.

But why do we need to think about that? Imagine yourself like if we were talking about COVID and not having a vaccination versus a vaccination. Are we going to wait until further information and long-term evidence to actually start doing a vaccination? Then half of the population will be dead in the world. It's just like that, no?

My feeling is like this: every time that I've seen in a country like in Spain, that we have approximately like in a city like Barcelona that is 3.5 million people, more than 350 allergists, and then I come to Cork, 5 million people in the country and only four to five allergists, you need to adapt what you have so that you can make it possible that everyone deserves some sort of chances to get better. And that is the necessity that we are looking around.

Dr. Mariam Hanna

Are we over-medicalizing out of necessity, creating extra doctors' appointments, extra counseling, extra nursing needs by telling everybody that they're doing a ladder and then monitor for symptoms or reactions?

Dr. Juan Trujillo

Oh, I will say the contrary. Just Sorry, I'm obsessed with ladders, huh? I will give you a a comparison.

Dr. Mariam Hanna

That's why you're the right guy to talk to.

Dr. Juan Trujillo

First of all, I move over to the meaning that ladders are the same because egg ladder and milk ladder are completely different with completely different outcomes and completely different numbers. But just by recollection of something that we published three years ago, we compared patients in Spain that were doing avoidance until a cutoff age of three versus patients in Ireland with ladders until age of three. 200 versus 200 approximately.

Patients that have been in the ladders, two appointments. Patients in avoidance, five appointments. So, medicalization is the contrary. For me, medicalization will be doing the conventional treatment, not using the ladders. Okay? It's just because

Dr. Mariam Hanna

Fair enough. Now unpack that for me. The ladders aren't the same. Milk isn't egg ladders. Tell me more.

Dr. Juan Trujillo

So, one of the things that I've been looking around, part of my PhD when I came here was recollection of what I just told you about milk, and it was a comparison between one hospital in Spain and another hospital in Ireland, that is Cork University Hospital, but it has a huge problem is the selection bias. You can't compare Irish population versus Spanish population.

So, what we did is I have a a good number of PhD candidates and students now, and one of them, what we did was comparing four hospitals in Ireland that did the egg ladder versus six hospitals in Spain that did egg avoidance, and we matched them to decrease the bias of selection of patients.

So, when we look at that, if you do a food ladder for milk, it takes 12 months to accomplish the ladder approximately, and 86 to 90% of them will reintroduce milk, I'm saying reintroduce milk and I'm not saying tolerate milk, by the age of three.

But egg takes 28 months to accomplish average the ladder, but 96 to 95% will reintroduce egg without any problems. So, even though that the egg ladder takes longer to finish, the percentage of people is higher to accomplish it, and with milk, it is shorter to finish, but the percentage is a little bit lower. So, that is a difference. Lower. Yeah.

Dr. Mariam Hanna

The other thing that's also started to show up with validation of ladders is the amount of the specific protein of concern, like casein versus whey versus Bos d 8, and this kind of

conversation in the different ladders. Can you comment about that a little bit? This is a trend to talk about from this step to this step, it's this much milligrams of protein comparison. Does that matter?

Dr. Juan Trujillo

No, it doesn't. No, it doesn't. You started saying that this is actually dietary advancement therapies, and this is actually a terminology that I have been adopting from actually your colleagues in Canada and in US that decided to invent that name that actually fits perfectly. And if you saw that first article, it is a little bit of of a Venn diagram that puts the ladders in the middle and put that probably what, 10% of the ladder may be will be an OIT treatment and the other 90 90% will be a reintroduction of food.

And I believe that until we almost impossible to get it, until we know for sure that the ladder is an OIT product that I don't think that it is, we should treat it as a reintroduction of food. And if we're treating it as a reintroduction of food, we need to introduce it and we don't medicalize that. So, we don't actually ask for the number of milligrams, the number of components or the number of specific components proteins in every product. We just tell the parents that this is a guidance and get them through it.

But every time that we make this a little bit more difficult, we're complicating the whole substance of the ladder. Did I make myself sense in this?

Dr. Mariam Hanna

No, I think that's a really key in that ladders are a form of dietary advancement therapies in the majority of the population, with only that small sliver where it may be acting like OIT. And maybe those are the patients that struggle a little bit more or don't succeed as well in the ladder. Like that it's not a 100% success rate at reintroduction at three years or 28 months of implementation.

Can are we at a point where we can predict who's going to succeed at what kind of ladder?

Dr. Juan Trujillo

I think that we are getting there. There are certain areas that I'm looking as what is the best the best way to predict who is actually getting better or worst. I would tell you that there is no difference between a patient that was diagnosed with egg and milk with anaphylaxis as a diagnosis way to continue and progress in the ladder versus people that are not not having anaphylaxis as a diagnosis. So, getting away with that factor, there are other factors that I'm always looking.

And clinically speaking, not even components for me in the in the last couple of years, if the ladder is pushed further and progress quicker are the person are the people that are going to progress and succeed better. So, if I give them, and this is completely empirical, but if in three months for the egg ladder or for the milk ladder, they achieve going to pancakes, I know that the majority of the patients are going to achieve it.

And if they after three months are not achieving that, by many circumstances, parents' anxiety, maybe bigger allergy, maybe problems and different stages. But just by that pathway of of quicker achievement, give me a little bit of more hope that they're going to achieve.

Also, and of course, age will be the distinguish between the ladder being successful or not. If you have a patient, we usually start the ladder in milk at what, six months of age or five months of age as soon as we as they're weaning. And in the case of egg, usually is a little bit older because they introduce egg at six or seven months of age, and when they see us, it's nine or 10 months of age. So, the sooner that we start, the majority of them will get a better result.

Dr. Mariam Hanna

Okay. And skin testing and blood work? You said it really quickly, like blood work may not make a difference, but can you comment a little bit about skin testing and blood work and components?

Dr. Juan Trujillo

I am this close to say that in four years if you invite me again, I will say that I was making a mistake and maybe the components are actually quite necessary necessary. But right now,

Dr. Mariam Hanna

Okay, so we will hold you, but 2026, what are your thoughts right now?

Dr. Juan Trujillo

So, skin prick test and component I was trained in Spain, they are obsessed with components more than any place that I've seen, okay? So, we I started recollecting ovalbumin, ovomucoid, casein, lactoglobulin, everything from 2020 that I started. And I haven't seen a difference in progression between them, and we have actually published it in, I think, Pediatric Allergy and Immunology in a couple of months ago.

The only thing that I will say with that is that it's still a good way to diagnose an allergy. But it is not give us it is not giving us a threshold or a cutoff or a progression as it is giving us when you actually do avoidance. It's just like that. So, maybe with more people, because it's only 50 people, I will actually properly say that. But it's just such a small sample that what is giving me right now is the chance to say maybe I'm not going to do so many components because it costs a lot of money, I'm going to use that money for other things.

Dr. Mariam Hanna

Okay. Fair. Who's somebody that you would not do the ladder with? Or is there somebody that you would not do the ladder with? I'm Canadian, so on the top of our ladder, it says over the age of six, previous anaphylaxis, asthma. So, it says some of these things. And I know that not all ladders have this, so is there somebody in your mind that you'd be like we're definitely not talking about ladders in this kind of a patient?

Dr. Juan Trujillo

So, this is for my cohort of patients in CUH, Cork University Hospital. And this is actually quite a little bit of a friendly fight that I have with Jonathan Hourihane, okay? I select patients to get the best success. So, I will never introduce a ladder in a patient older than five years unless there was a really special circumstance. And even with that, my nurses will kill me, okay? That's number one.

Number two will be I will introduce it to everyone that is younger than three, 100%, and the younger the better. But it is about the progression. As I told you, 12 months, 15 months for milk, 28 months for egg. So, if the patient is turning three, three years and a half, and it's still not progressing the way that they should, I'm already having them as a risk factor to stop the ladder before they go to school, so that is going to be a little bit more difficult for the parents when they are going to school. So, I am I stop the ladder two years ago when they were six, now I'm stopping the ladder at year five.

Dr. Mariam Hanna

Okay. All right, that's important.

Dr. Juan Trujillo

Okay? Just because.

Dr. Mariam Hanna

Fair enough.

Dr. Juan Trujillo

And when they come, and it is actually quite dangerous because people think, "Oh, ladders is are for everyone." So, the worst the worst cases that I've seen or the worst cases that I know from people, "Oh, I started a ladder at seven years." So, it is awful because they have an anaphylaxis. But because you shouldn't be starting a ladder at seven years. It is for young people, because the ladder could even be dangerous, because the treatment in that case will become worse than the disease instead of the contrary.

Dr. Mariam Hanna

That's a I think just an important statement that sometimes the treatment can be worse than the disease if patient selection is wrong. So, this is where the medicalizing of ladders bugs me a little bit. Like does it have to be daily? Do they have to be monitored for a period of time? When they're sick, what are you supposed to do in terms of their dose that they're getting in their diet? Is there exercise precautions on this child? Basically, I'm extrapolating things that we say to patients when they're on formal oral immunotherapy. Exactly.

Dr. Juan Trujillo

So, number one risk factors for OIT, asthma. So, non-patient that we have has asthma because they're little kids, and you don't diagnose kids with asthma at below five years of age. So, that's one risk factor that is going to away.

We give them a little bit of guidance of the things that we should be careful about, but we are not so controlled by the same rules as OIT. And that's where my brain thinks this is OIT or this is not OIT, because we need to make this possible that the parent is able to not fear, scared about a treatment, and OIT is quite scary and it should be scary, no? And that will actually give them confidence.

So, giving them recipes with volumes will limitate and medicalize a ladder what it probably does. We usually tell them in my service again, not in that they should be doing it at least three times a week. That is because when I have patients that are in both ladders at the same time, I told them, "Okay, Monday, Wednesday, Friday egg. Tuesday, I don't know Tuesday, Thursday, Saturday milk." And Sunday start introducing all the peanuts or something like that. So, so that they have a little bit of more space to be introducing.

Then, I have encountered with a couple of people that I want to kill when I saw that they are doing this and are, for example, people that are starting the ladders and they actually call them once every two weeks to tell them, "Oh, now you introduce to the next step." That for me is medicalizing, because you are telling them to introduce.

Or what my colleagues in Spain that I love them and are really really enthusiastic about it, but what they're doing is, "Oh, I started the ladder in my hospital." "Oh, how are you doing it?" "I called them, they come to my hospital and I come to my service and I introduce the first step of the ladder every two weeks in the hospital." I say, "My god, the resources that you have in that country is amazing because we can't do that here." So, that particular part for me is medicalizing. So, it's not working. Okay. Just because.

Dr. Mariam Hanna

So, should this be implemented at the primary care level? If there's safe when introduced early on, I mean, this is the other thought. If your nurse can't reach them all to call them, should this be something that we arm our pediatricians and family physicians when they are making that referral for allergy for maybe an egg allergy, that they start talking about the ladder?

Dr. Juan Trujillo

If you have enough resources to see your patients in less than a month, I don't think that it is necessary, like in anything. But if your resources are actually getting complicated, you should be training primary care physicians or giving them the education enough to actually complete this.

There is safety nets here, and we're still struggling, even in Ireland, when we are making decisions that dietetics are using the ladders for in community dietetics to use the ladder in IgE-mediated patients in the community before my allergy dietetics sees them, no? So, depending on the county, I have to take care of four counties, so depending on the county, one county is saying no and we're not going to do it, and the other county is saying yes.

But saying that, it actually depends on the resources. If I am able to provide the service to my whole country, I don't need other people. And if I am not, I need to be the supporting with everyone else.

Dr. Mariam Hanna

Fair enough, fair enough. So, so modified it according to resources availability. Okay, so I had it in my question sequences, the most important question that I was going to finish with, and you're so brilliant, this was the opening answer that you gave me, but I'm going to reiterate it, your take, Dr. Trujillo, on is ladder progression actually disease modifying? Or is it just expediting something that was going to go away in the 90% of patients?

Dr. Juan Trujillo

So, let's say that we're talking about OIT and we're doing OIT in patients that are two years, three years, four years of age. Are we actually giving them OIT or is the natural cycle of them that they're going to outgrow the allergy? We don't know. It's exactly the same for egg and milk ladders, we don't know, but we don't care. Because

Dr. Mariam Hanna

But I mean the problem is is that most milk and egg does go away. It's like most peanut doesn't, most tree nut doesn't. That's the stat I guess that I struggle with.

Dr. Juan Trujillo

Yes, and I understand that, and I feel, I hate that because I love evidence. I feel that I'm making a progression here. I am looking it more from the for the circumstances of number of appointments, numbers of bloods, but if I have to I don't have kids, okay?

AND if I decide for myself, oh, I had it with the lovely weather in Ireland and go back to Spain, I will never return to going back to avoidance because I feel that is actually damaging the kid because we're not doing an active treatment, so maybe maybe it is disease modifying, but I don't have any evidence of of about that. So, I hate that because I don't think that I will ever have it.

Dr. Mariam Hanna

It's okay, I feel like you will have an evidence-based answer in four years, so we'll have to bring you back to tell us more. All right, time to wrap up and ask today's allergist, Dr. Juan Trujillo, you can find him in Ireland everyone, for his top three key messages to impart to patients and physicians on today's topic, ladder validation and progression. Oh my goodness, I couldn't even get that out. Dr. Trujillo, over to you.

Dr. Juan Trujillo

Okay, ladder, age dependent. Never in children older than five years of age. Number one. Food, milk and egg ladders look the same, but they're not the same. And it will always depend on the

place that you are and the support that you have from your resources at your healthcare system to make this possible.

Dr. Mariam Hanna

So succinct, like you could do that in one WhatsApp message. Thank you, Dr. Trujillo, for joining us on today's episode of The Allergist.

Dr. Juan Trujillo

Thank you so much.