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2 SPEAKERS

Patrick Aebischer

Peter Bowes

START OF TRANSCRIPT**[00:00:00] Patrick Aebischer**

We have to start to prepare our species to the social acceptance of living longer. One of the most important thing for me is the quality of life. It's not only the time, you know how much, but can you live with a great quality for 80 years?

[00:00:21] Peter Bowes

Hello and welcome to a Live Long and Master Aging podcast. I'm Peter Bowes. This is where we explore the science and stories behind human longevity. Now for this and more episodes over the next few months, I'm happy to announce that the LLLAMA podcast is joining forces with Amazentis a Swiss life science company that's pioneering cutting edge, clinically validated cellular nutrition. Under its Timeline brand. This will be a partnership for a series of episodes exploring the research behind cellular nutrition, why it matters for our longevity, and also finding out more about the scientists making it happen. Today, I'm joined by Professor Patrick Aebischer, the chairman and co-founder of Amazentis. Patrick is a medical doctor and a neuroscientist, a longtime researcher and author. Dr. Aebischer, welcome to the Live Long and Master Aging podcast.

[00:01:14] Patrick Aebischer

Hello. Good to be here with you.

[00:01:16] Peter Bowes

It's very good to talk to you. We're all living, aren't we, through extremely uncertain times at the moment, trying to move forward with whatever it is we do the best we can. And I'm curious, how are you coping with this? I suppose we could call it the new normal. There's nothing normal about it, though, is there?

[00:01:31] Patrick Aebischer

Like everybody else, trying to do the best out of this? Trying to enjoy time for reading. You're a bit confined. But also I'm personally very much interested in the outcome. And I'm working quite a bit on the pandemic, on the development of vaccines like everybody else, trying to contribute to a good solution to this very difficult problem that we're going to have to live with.

[00:01:52] Peter Bowes

Yeah, I wanted to ask you about that. And I knew you were working in terms of looking at a vaccine. And of course, it is the number one question that everyone has in terms of when there may be a vaccine and what sort of progress is being made?

[00:02:06] Patrick Aebischer

I think it's encouraging, you know, given the short amount of time that science had to come up with a vaccine, as you know, there are various types of vaccine. All this is new because the old way to produce vaccine would take much longer. So there are new technologies that have been developed that can accelerate this. So we first have to see if the vaccine is, you know, functional, if it's safe. Can we scale it up and can we distribute it, you know, to which is quite of a challenge to nearly eight billion people. So, you know, those are enormous challenges. But I think I've never seen the science trying to really find a solution. In such a small amount of time and really with a real collaboration that is on the scientific aspects of things.

[00:02:52] Peter Bowes

And it is almost a unique situation, isn't it? You mentioned the collaboration. I don't think I've seen anything quite like this. This is a global collaboration, clearly a global pandemic that we're all facing. But this really is laboratories around the world pulling together in a way that we probably haven't seen before.

[00:03:07] Patrick Aebischer

Is the first time, when you think about it, the outbreak, beginning of the year. And we already now in phase three clinical trials with at least four different vaccines. You know, this was just unthinkable. So we have one the tool. But also, you know, the will define at least on the scientific community, a solution because nobody could hide from this problem. You know, depending if you're poor, rich, extremely rich, you know, we're all the same. We're humans and we have to face with this little nano particles that is really challenging our species.

[00:03:39] Peter Bowes

And I often hear scientists like yourself talking about vaccines, expressing a note of caution, a strong note of caution. That even if, as you said, a vaccine is found. We are not out of the woods and that we need to see whether it's effective and there is so much that can potentially go wrong, isn't there?

[00:03:57] Patrick Aebischer

So the first signs are encouraging, but it's not going to be a solution. You know, despite what some politicians say, this thing will not be resolved in the next six months or even probably 24 months. You know, we will have made progress. Hopefully we can start to live with it. We will learn how to live with it, you know? And I think hopefully we will protect the people that need the most first. We know we need to distribute this this vaccine to the most needed person. And I think all this is new. You know, for the world that I think we have to find that we're all together in this difficult time as a species, as not as individuals from a country or another.

[00:04:35] Peter Bowes

There are also social implications moving on from this virus. Let's hope we do find a successful vaccine. But it has changed the way in which we all work, in which we all socialize, necessarily at the moment. But I don't think things are going to go back to how they were that we will be forever changed because of this.

[00:04:54] Patrick Aebischer

Yeah. I think we'll have to find a new normal now. And I think it's obvious that, you know, the kind of things that we have, the tools that we have allow us to continue to work at it for some of us, you know, maybe if you're a factory, it's a little more difficult. But I think, you know, we in terms of education, just think about, you know, we knew and we've been pushing quite a bit for online education, but this is the time to kind of, you know, implement that, to try to find a new equilibrium between, you know, online virtual reality, but also a physical presence because we're a human being and we need also to interact physically. But again, finding this new normal is a very exciting but you know also challenging thing to do in the coming months and years.

[00:05:37] Peter Bowes

I think it's also put the spotlight, perhaps more than ever before, on the importance of taking care of our general health. And maybe this comes to the point that we're going to be talking about in terms of your work with Amazentis and our own personal health span and longevity. And we've heard so much, of course, about people with underlying health conditions suffering far worse than than others with Covid 19. And if only, I guess, all of us were in a better state of health then perhaps there may not have been as many people dying from a virus like this. It really does show the importance of those those basic things of exercise and and good nutrition.

[00:06:14] Patrick Aebischer

That's for sure. But also and we see the importance of aging well, to some extent, as you've we know, you know, the population, the aging population is more susceptible for a lot of different reason because they are, you know, affected by various disease and makes them weaker towards the virus. So to some extent, we have to learn to live not only longer but better and better health. And I think this is also one of the goal of mission of the new science coming. And that's where Amazentis wants also to try to contribute.

[00:06:45] Peter Bowes

Well, that's what I find so fascinating. And let's talk about that. And for full disclosure, as I mentioned at the start, this podcast is now a collaboration with Amazentits. Very happy to do that. One of my goals is to help people understand the work that scientists are doing. And I guess from your perspective, explaining your work as a scientist to people, to the masses, to people in huge numbers is a crucial element of what you need to do.

[00:07:10] Patrick Aebischer

Yeah. I think the scientists have a responsibility, you know, to say what do we do to, you know, advance the science so as to, you know, enhance our capability, our well-being, but at the same time, to be truthful and not over promise things. And certainly when you talk about aging, you know, we have to be modest about it. But I think, yes, we have made tremendous progress. When you look at, you know, we speak about the revolution of I.T. information technology, of biotechnology. But probably the biggest revolution that we've ever seen is the fact that we have doubled life expectancy over four generations for our species. This is just incredible. If we would have told our great, great, great parents that we would live twice as long as the,y they would have thought. And I think we probably on the way because we start to understand the molecular basis of the aging process to be able to, you know, in fact, not make us eternal but tp gain a couple of generation is something that you could imagine. But it goes also with a lot of social responsibility because, you know, we use as a species we used to live over three generations. We're starting to live over four generations. But what will it be, you know, to live maybe over five or six generations? So, yes, the science is moving. We have to start to prepare our species also to the social acceptance

of living longer. And for this. One of the most important thing for me is the quality of life. It's not only the time, you know how much, but can you live with a great quality for 80 years? That was unthinkable for a generation ago. I am personally 65 now, but I don't feel like an old man so, at all. But probably my great great grandpa was feeling an old, a really old man. So we've made a tremendous progress. The key question is, can we do the same thing for another generation or two? And that's where the science is probably at the time, where we start to be able to act on it and really not have a true science based impact on the process of aging. And good aging meaning that, you know, you would be in good health as you were in your 40s when you're in your 80s. That's really the challenge.

[00:09:33] Peter Bowes

Yeah, you've really gone to the heart of the matter. And I guess the issue as we are able to live longer isn't the focus on lifespan, but we want to be, as you, used that phrase, not to feel like an old man, maybe at 80 years old, to continue with those healthy years, the health span, as we now describe it, and then maybe a few short months where we deteriorate and finally die. But we don't have that prolonged period of ill health before we eventually die.

[00:10:00] Patrick Aebischer

And that's the biggest challenge, you know, is the quality of life. I think it makes no sense, you know, to increase the lifespan if it is not with the quality that, you know, we all want to. And there are a couple of things that we do care a lot. When I say what is good aging, you know, I see four things. First is your mobility. You want to be independent. The second thing is cognition. Of course, this is extremely important. You know, you don't want to forget who you are and your family and so on. Then is being hit by dementia. The third thing is vision for me, because this is part of our life. To be able to continue to read, to be part of the world. And of course, hearing is also a very key. And you see when people have a hearing and eyesight problem, they start, you know, their quality of life diminishes quite significantly. So for me, those are the full criteria. If you think about, you know, acting on aging that we have to keep in mind is mobility, cognition, hearing and vision.

[00:11:06] Peter Bowes

And to keep in mind the fact that these different aspects of our lives, our physicality, they are indeed all connected. And people often focus, I think, on, let's say, their diet for their physical ability to walk or to run or to bend over or to lift something. But as you correctly say, our eyesight, our ability to hear our mental capacity all linked to how we treat our body in terms of diet and nutrition.

[00:11:33] Patrick Aebischer

Yeah, that's what we learn more and more. And, you know, there've been a lot of studies from diet and what we call the Mediterranean Diet, which, you know, you find in Greece and so on. That's what a lot of our lot of spots, several spots where people, you know, are known to live quite a long time, up to 100 years. The centenarians, you know. So, for example, in Greece, there's a small island in Greece and it looks like, you know, diet is key. And that was the whole purpose of Amazentis, is to try to understand, you know, what were the ingredients in this diet that was really active at the cellular molecular level on the aging process. And this is a new science. We knew that when we know that diet is important, but can we try to get the active component in this diet so that we could, you know, take them as a supplement because not everybody can live, you know, in the southern island of Greece with the right olive oil, the right fish and the right vegetables. And I think this was what drove Amazentis science when it was initiated.

[00:12:43] Peter Bowes

Exactly. I wanted to talk to you about that and how you founded the company. It was 2007. And what was going through your mind at that stage to to form a company like this? Was there a big idea, in your mind?

[00:12:57] Patrick Aebischer

You know, I'm a neuroscientist. I've worked on neurodegenerative disease for all my life. Maybe Parkinson's and Alzheimer. And I've been on really, I would say the high tech part of it. And I do remember reading an article on superfoods. To be honest, I was quite skeptical because I'm the typical, you know, a molecular scientist that if you don't understand exactly the mechanism, they wouldn't. And I had a postdoc at the time that came and said, you know, I've found there is an article saying that in pomegranates there might be something. And we had the Alzheimer mouse in a laboratory, which is a transgenic mouse that reproduced the disease. And she you know, we've decided just to give some pomegranate extract to really see if what we were reading was true or not. So, again, as a scientist, that was extremely skeptical. And we found some, you know, early indication that there might be something there. And that raised my, you know, interest. And I was asking myself, can we try to de-convolute? So I first I did a lot of reading on pomegranates for it. Interesting that, you know, it was identified already the 15th century as the fruit of youth. So, you know, our ancestors had identified this fruit as a very key, you know, part of diet that was related to kind of anti aging. But no real science was made on it, Because usually when you try to de-convolute that means try to find the active ingredients in something as complex as a fruit like pomegranate. It's very rare that, you know, you found that you were able to find the molecules. Any how to make a long story short. We thought it was worth it. So and then we decided I had already built the two other biotech while I was in the States. That was for, what, nine years at Brown University. So I knew a bit what biotech was, how to put a company together and with one of my old graduate students. Who is now the CEO, Chris Rinsch, we decided, you know, a bit. It was a bit crazy to say, why don't we try to do? Because it was seen as soft science. Nothing serious would come out of it. But I thought it ought to be done. So we've convinced them, you know, major business angels to

invest in our company in this, you know. But we had really an intuition, nothing more, to be honest. And again, it took quite some time. And, you know, you have to be a bit lucky in science. But then we found, in fact, we were able to identify a molecule called Urolithin, that is not you don't find it in the pomegranate. But if you eat pomegranate and you have the right microbiome, then meet the bugs that are colonizing your guts. It transforms those tannins into this molecule and fascinating in a very interesting way. This molecule activates what we call my mitophagy. Mitophagy is the process to rejuvenate your mitochondria and the mitochondria, the small organelles that you find in your cell that produce the energy that the cells needs. Called the ATP. That's the energy of the cells. And this Urolithin is able to stimulate the rejuvenation of those mitochondria. So it is not the whole process of aging, but it's certainly one very important one, because when you age, the number of mitochondria in those cells diminish their less functional. And when you're able to induce, again, this process, you're rejuvenated and produce new mitochondria that provides the cell the energy that it requires. So there but that took, to be honest, 10 years. So it's not something that, you know, you do just in six months in the laboratory and very carefully, we've looked at it first, in vitro cultivating cell, then in small little worms that we called C. elegans. Then in mice and more recently in humans.

[00:17:08] Peter Bowes

Clearly, this is very exciting science. Just going back a little bit, I'm curious to know when you realized that there was something to this, when in those early days you looked at pomegranates, you knew the history, you knew the stories, but you didn't have any sort of scientific proof about how beneficial they could be for us to being quite a light bulb moment for you in your mind. Quite exciting.

[00:17:32] Patrick Aebischer

Yeah. Because, you know, you suddenly you found it. There's no molecule that we know that can induce this process called mitral fudgie rejuvenation of mitochondria. Here where we have identified them, first molecule that could do it. And, you know, and it came indirectly from pomegranates. But now we realized that not only pomegranates provide, but, you know, for example, nuts, berries and so on contained those tannins that are again transformed by your gut microbiome, and your bacteria into this, urolithin. But what we found, which was also very surprising, is not everybody has the capacity to produce this urolithin out of those fruits. We believe now that the current scientific evaluations is about a third of us have the capacity to really transform efficiently those tannins into this micro into this urolithin. But the other two thirds we can drink and eat as much pomegranate, blueberries, nuts. We don't produce these molecules. So and then came, the idea that we needed to synthesize it. And then, of course, if you take it if you administer it orally, then you have your you you will have the benefit of this molecule, urolithin, despite the fact that you have or not the right bacteria in your gut.

[00:19:00] Peter Bowes

That's a very important point to make, isn't it, that while we talk so enthusiastically about pomegranates and perhaps other fruits as well, that not all of us can benefit?

[00:19:10] Patrick Aebischer

That's right. So only a third of us and even for we start to realize during our clinical trials to get the amount that you need, you would, for example, have to drink between one point five and two liters of pomegranate per day. If you have the bacteria, if you don't have it, you won't produce it. And to be honest, it's quite a challenge because, you know, pomegranate is okay, maybe for a small amount, but I don't think that there would be many people that would be able to swallow, you know, two liters of pomegranate juice per day. So I think, you know, this is also the other part of the equation. So we have to find a more efficient way to get this your urolithin into ourselves. And that's where we were able to producud this, to synthesise it and you could take it as a supplement or now we work it also in a regular pill.

[00:20:04] Peter Bowes

The point that you make there reminds me of the beneficial potential benefits of drinking red wine that realistically to get the some of the known benefits from red wine, we'd have to drink a tremendous amount of it.

[00:20:18] Patrick Aebischer

That's right. That was the first molecule that was discovered because resveratrol is an interesting bug of much less efficient than urolithin. But however and I love you know, I'm Swiss with French. I love great good red wine. But I think we made a calculation that we would have to drink between eight and 10 litres per day. And I think tell you, you your liver would probably not like this a lot. I think, you know, I think that's why we have to go through the supplement route if we want to benefit from those molecules. And that's why you need biotech companies, you know, identifying the active component and and providing them in a way that is easy, you know, to take on a daily basis.

[00:21:01] Peter Bowes

And what you're talking about now is a pure and extremely pure form of urolithin A?

[00:21:06] Patrick Aebischer

That's right. You know, it's like a normal drug. So it's it's a chemical molecule, you know, with a little bit of excipients and something you could swallow or we put it in the supplement, you know, so that it's also a nice experience because, you know, as we do this, we didn't want this to be a drug like this, but should be a real

experience. Now, of course, I am in Switzerland where we started, you know, the Nespresso, for example, coffee the way to do it. So it should be, you know, a nice way to. For me, it's associating, you know, something nice to take a wild benefiting. Usually a drug is, you know, not that nice to take. We have we take them. We swallowed them. But for us, the idea was, can we try to provide, you know, the pleasure of something to take that is good for you? Because often when you take things that you like are not necessarily good for you or at a moderate level, but obviously you shouldn't, you know, exaggerate. So for us, in the philosophy of Amazentis, that is that is also very important. Is the experience that, you know, to have pleasure with the experience of taking a molecule that is good for you.

[00:22:12] Peter Bowes

And in Amazentis terms, this is what you call Mitopure?

[00:22:15] Patrick Aebischer

That's right. That's a name that we gave to the Urolithin. Urolithin is the chemical definition and Mitopure is the brand of the molecule, because this was the first time there was identified, you know, and it will be now present in the various ways. It could be a supplement. That could be a smoothie. It could be a pill. And some people prefer to take it with pills. I don't know, tend to like to swallow pills. I'd rather have a pleasure of putting something in a nice yogurt or in a smoothie. So, again, I have the impression that it's good, is good for me, but it's good for me for the long term. It's good for me now because I enjoy taking it.

[00:22:55] Peter Bowes

And do the beneficial effects. Are they immediately obvious to people or this is more likely? Clearly something is going to take time. We aren't talking about longevity benefits after all that. Perhaps you take the supplement today. You're not going to necessarily notice anything tomorrow.

[00:23:12] Patrick Aebischer

So, you know, and certainly it takes time to see if we will have an effect on longevity for our species. But I think what and that's why we've concentrated our clinical trial in in some way and trying to see if something could be seen and could be measured at the reasonable amount of time. And one of the first things, you know, that degenerates while we age is the muscle. You know, we lose muscle strength, so we tend to not walk as much. So, so, so. And our first clinical trials were really geared at trying to quantify if by taking this molecules we can increase, you know, the muscle activity, which is related to mobility. And that's what the first clinical trials have shown is we are increasing what we call the six minute walk and you calculate how much, you know, a walk you could do in six minutes and you could see. So that will not take, you know, two hours. But over several weeks, we see already an effect on your mobility and your capacity, you know, to walk. And I think this is very important. So we also probably think that it has also an effect on cognition and so on. But that would be it. Take time to see that what we're doing. We have really an anti-aging marker, there will be several of them, because there are several ways to tackle the problem. But first is, you know, this energy will be provided to all your cells. So the easiest to evaluate is the muscle function. It's easier to look at the cognitive. But I'm totally convinced that it's probably also very good for your cognitive function, because we know in the brain - I'm a neuroscientist - that, of course, the brain is affected. You know, the same way. And the brain needs a lot of energy. In fact, it's the organ that, you know that consume the most. So I think it will also. And, of course, for hearing, for vision, because it's a whole process. So probably all your cells need to have more energy, while we age or go back to normal energy. But the ones that are the easiest to evaluate. We thought was the muscle, you know. And mobility.

[00:25:19] Peter Bowes

And that is why I make the connection to longevity. Perhaps on an individual basis, because frailty is often the beginning of the end for so many people. I mean, quite simply, falling over because older people don't have that muscular strength anymore. that could ultimately lead to the end of their lives and perhaps a premature end of their life.

[00:25:42] Patrick Aebischer

Exactly. You know, that's one of the key things is that you don't have the same strength. You tend to fall. You break your hip. You go to the hospital, you know. And then you start. It's very difficult to recuperate. And this is the beginning of the end. So I think having, you know, muscle strength is key in your ability to move and to move safely. And that's why we put a lot of emphasis in this first component, because you can quantify it. But also, we know it's the quality of life. It's an essential component. And of course, your ability to move gives you the independence that we all enjoy. As long as we can. And I think that's why this was the first thing that we want to prove scientifically, that this your urolithin can really do something on your muscle function.

[00:26:32] Patrick Aebischer

Just going back to when you formed the company, which you called Amazentis. Was there a reason for that word? Can you explain why you gave, the company, that title?

[00:26:41] Patrick Aebischer

Yeah, that's right. Because, you know, we have people spoke a lot about super fruits. So, you know, you say pomegranate is one of them. But there are a lot of very interesting foods that you find in the Amazon. Acai and so on, so people have looked at - there a lot of smoothies that are now given - unfortunately they don't have the

science behind. But we know that a lot of those fruits grow into nature, into the Amazon. So we were inspired by the Amazon. And at the time I was I had a trip in the Amazon and saw a couple of those fruits that I have never seen before. I said maybe there are some very interesting new fruits that have new molecules that we would be interested to try to find. And that's where the word Amazon is came, even though now, you know, we have concentrated our work on the pomegranate. But I think in the future it's very much thinkable. At least I am interested to look beyond pomegranates. Can we identify all the molecules that have also, you know, a synergistic effect on slowing down the aging process?

[00:27:48] Peter Bowes

That's fascinating. You have had a very varied career, haven't you? You're a neuroscientist by training. You're a medical doctor now working in, amongst other things, cellular biology. You are a strong proponent and advocate for a multidisciplinary approach?

[00:28:04] Patrick Aebischer

Yes. And, you know, I've always been you know, I was trained as a medical doctor, but in neuroscience, you're very much exposed to a lot of technology engineering. It's. It has a system levels. You know, it goes from robotics to artificial intelligence. And I like I always I was always fascinated by the convergence of technologies. And I was I'm very curious by nature and I'm not afraid of looking at the new concept, but I'm very, very keen on doing it, you know, the scientific the deep scientific way. And I think there was one of the motive. It's the one of the motives of Amazentis, you know, is to keep the quality of the science. It has to be science, you know, based and clinically proven. And this is, you know, for us, the real part about this. I can only do this because I am a scientist. And then I run a university. I was president of one of the big two, Institute of Technology is Switzerland before, as I told you, I was at Brown University on the faculty of design. So you know how scientists work. You know, it's by evidence and the quality of what you do is key. You know, I could never promote something I don't believe that we wouldn't have proven scientifically. So for me, this, of course, that would, you know, affect my reputation. And then I work for 60 years. So I would have never done this without the kind of rigor that we've put, for example, in the clinical trials. We read what we called double blind in the same ways you try. You test a new drug and you have people that take it. But the evaluator, neither the person that takes it nor they evaluate know if you're on the active component or just a placebo that doesn't have the active compound. And this is the way science. This is, by the way, the same way that we're now testing new components, new for the Covid. And, you know, and this is the kind of, the scientific rigor was key and it's key, it's at the heart of Amazentis's philosophy.

[00:30:02] Peter Bowes

And that scientific rigor, I think, is more important today. It's always been important, but it's more important today than ever before. When we live in this world of so-called, and I hate the expression, but fake news, when people can look at the Internet and not quite know what to believe.

[00:30:18] Patrick Aebischer

And that's really the real problem, you know, because you can see everything that I said. We said at the end, it's the reputation. So the whole idea that we you know, we're scientists. I was trained as a medical doctor. So this has to go to a certain way. That's the way we we, you know, prove that something is efficient or not. And for me, it is unthinkable to do it a different way. So I think in all this kind of yes, there's a lot of charlatan things inside. So for us, you know, it's to go back. Yes. By the way, they are component in fruits and natural. By the way, a lot of the drugs are developed, you know, from natural compounds. But I think that the way to do it is so important. And I think that's the whole thing that we want to do it, you know, and that's why we've put so much emphasis. It took a lot of time and resources to prove it. But hopefully, you know, this would be accepted by the medical community because this was proven by the regular ways that science move. And for us, I think that the whole team this is this is the way it's the only way we could do it. And for me, when you're talking about aging, it's very important. You know, you it would be criminal to promise things that we don't have. So. So, yes. And I hope I'm convinced that this molecule has a defect. For how long? You know, we don't know yet. But now for the first time, you know, we have a molecule that really has a real impact on the aging. Now, I don't know. It's going to give you five, 10 years. Only time will say but this is a new science that is coming. And I think we have to do it with the same rigour as we do it for the general, I would say, pharma development.

[00:32:03] Peter Bowes

That's always the irony of longevity research. Isn't it? You say only time will tell to some extent in terms of the long term benefits. And that's just the very nature of studying aging.

[00:32:13] Patrick Aebischer

That's right. But at the same time you could try to find surrogates like, you know, if we can show that, like we did that by taking this. If you have suffered from frailty and you could do 300 meters over six minute, but by taking this molecule, you go to four, 450, you've proven that you've had, you know, that you were able to reverse. That is one component of your aging process now. And knowing that this this molecule acts on all your mitochondria, all your cells, you could deduct that it's probably also good for cognition. And that will take time to prove. And that will is what Amazentis will do is that this molecule is also active in cognition. That is on one aspect. We have something very firm and that's why we chose the muscle function, because it's useful. It's a real, you know, good indicator of the aging. But on this one, you don't have to wait 20 years to see if it has a defect or not.

[00:33:09] Peter Bowes

You mentioned that you worked here in the United States at Brown University. And I'm just curious what you learned from the American way of doing things and perhaps the American psyche, I think, must have been quite different to what you used to.?

[00:33:23] Patrick Aebischer

Yeah, I came as a native postdoc, Swiss postdoc to the United States. You know, I was given the possibility because they came with a grant from the Swiss National Science Foundation to go to Harvard, to M.I.T. But I was like, good place, but that maybe smaller that you had a little more freedom to do whatever you wanted. And Brown was the perfect place. It's a liberal college, university of great quality and a great place, Providence. I really enjoyed. And it was the land of opportunity. I came as a postdoc and I guess about six years after I was already a tenured professor and I was the chairman of of a department. This is unthinkable in Europe. So there's this kind of, you know, the sky's the limit, which is fantastic. In fact, the first company I did. I do remember so vividly, I was on a Friday evening, somebody knocked at my door and I saw a person coming and telling and telling me, I've read a lot of things you do. I want to do a company with you. And I said a what? I did or what he was talking about. In fact, the gentleman called Mark Levin is one of the great venture capitalists now in United States, started a big fund called Third Rock Venture in Boston. And that was his first company that he was doing. So I've learned by, you know, by osmosis, I had no clue. And five years after we were on the Nasdaq for an IPO. So I had a crash course. This would have been unthinkable in Europe, certainly at the time. But this is the wonderful thing about the US. You know, everything is possible. And that's what I love. So I owe a lot to the United State, you know about, you know, about not being afraid if you have something that you think is important to try to make it and that's what I what I've learned.

[00:35:09] Peter Bowes

Me too. I've lived in California since nineteen ninety six and noticed and appreciate exactly what you're talking about, that sort of ethos of that can do mentality and that if you think you can't do with it, actually if you try again you probably can't do it or there's someone who is prepared to collaborate with you to make something happen.

[00:35:28] Patrick Aebischer

That's right. And forgiveness that you didn't succeed the first time. You know. I was lucky enough because, you know, it worked. So we did an IPO. It's not. But, you know, I figure that's what I tried to bring back to Switzerland because I love. This is my country. Those are my roots. And so on. So. So but I think we were rather timid. I think we've learned that. I think. But again, and I think that's that's something so key about specifically if you're young and ambitious and have ideas, you don't have to wait for your boss to retire, to do something. The U.S. allows you you know, you give freedom to young, in the academic system, to talk to young and you have to prove, you know, you got have you you set you by yourself. Let's prove me that you could do it. That you can be promoted. That's why, you know, in no time, I would have been told that six years after I was chairman of the Department of an Ivy League school, I would have never thought the unthinkable. But that's why this land of opportunity that you know and its ability to accept that I hope, you know, foreigners to integrate them and so on. I just hope that this will continue over time. But that's a different issue.

[00:36:40] Peter Bowes

Yeah. Do you. I certainly believe this, that only thanks to the Internet, which clearly wasn't around in your early years and mine either, that it has made the world a smaller place. In many senses it is easier. Like you and I right now are communicating. We can see each other actually as we're recording this interview, which would have been unthinkable 20 or 30 years ago. It is a smaller place and perhaps some of us that can do attitude of America is maybe filtering through a little faster to other parts of the world.

[00:37:07] Peter Bowes

So I think very much so. You know, we're becoming, as you say, a small village. And I think this is this is very obvious these days. It is the Covid crisis that we were able to continue to interact to work with our colleagues around the world, which would have been unthinkable. But I think without this, how would you know we were writing letters at the time. It would have been just impossible. So this is the beauty of what technology can bring you today. And but at the same time, you know, as a neuroscientist, our brain is changing. It's the evolution of the man that the human species is not a fixed species. So it's evolved with time. But again, we owe a lot, you know, to United States. It was interesting at the big before the World War, it was Germany, Europe, and then the leadership came to the US. God knows, you know, science. You know, I will say that science was communication of science before the First World War. Was there a German now it's in English, maybe 50 years it'll be Chinese. I don't know. But the world is evolving. But I think because of this, we have and I think the Covid crisis is a good example. Despite of the politics, you know, the scientists work together because we have a common language. It's science. That's what is so beautiful by science, because the law of physics are the same in Beijing, San Francisco or Geneva. And I think we started with those two to share a community, but also a responsibility as scientists, because science has never been as fast, probably as now. And but also we have responsibilities about the application. So even in the field that we work on, on aging, of course, it'd be fantastic if you could slow down dementia, Alzheimer's and so on. But also, we have to be careful that we don't produce people that have lost their minds that live at the expense of society. So I think there is a responsibility of science that is coming over the years that is very important. But that's why it's so fascinating. And I think we have to learn also to speak about that you know to express our doubts, our

hopes and share it, because otherwise, you know, society will not follow. I'm still, you know, flabbergasted that there's so many people that are against vaccines that, again, that are creationists. As a scientist, we were not able to communicate. So we have to learn how to do this. Even in the fields and not over promise things. But really coming up with the rigor of what we think, which has been until now, the best way to do it, which is the, you know, reproducible experimentation paradigm that scientists have developed over the centuries.

[00:39:43] Peter Bowes

And with Amazon is that's exactly what you've been doing for these past few years, that rigorous scientific process. And clearly in 2019, with the publication of the first human clinical trials, that was a pivotal point for the company. And you really are now at quite a key point moving forward, you might have been delayed a little bit because of Covid, as just about every has with just about everything we do. But the next few months are going to be quite interesting, aren't they?

[00:40:08] Patrick Aebischer

That's right. We first published the thing in the top journals in The Nature family. So because we want to have this rigour now, we also have to because I think it's important, that the pleasure part of the experience is important with packages, the way that it does look like a drug that we would have, you know, to swallow painfully. But, and now, of course, this is the time. But again, we could start to do this despite Covid. Because, you know, we could do the kind of thing we could talk through the world and throughout the world. We will start in the United States because, you know, also, I think this is an important market for those kind of things. It's also an import that the you know, that the FDA, you know, was involved in the process, that we also want to have, you know, the rigour to saying this needs to be safe. This is probably the first and most important thing. So and we're hopeful that hopefully people will we'll see the effect because we strongly believe that we can help people, because at the end, you want to help people. You know, as we've said, to live a good life as long as possible. So, you know, to increase the quality of life so that the experience where we're on this earth is an enjoyable one.

[00:41:18] Peter Bowes

And you mentioned the FDA, the Food and Drug Administration, maybe just for listeners, this around the world. Explain the significance of the FDA being involved.

[00:41:27] Patrick Aebischer

No, of course, because, you know, the FDA protects, you know, the consumers from, you know, a false claim and also, you know, things that could be dangerous for your health. So for us, it was very important to go what we call the grassroot 'general regarded safe.' That means we've send the dossier to the Food and Drug Administration. So to ask them, you know, if they thought we could proceed with this, the FDA has looked at it and think that this is safe. This is extremely important for us because, of course, primum non nocere, at first you don't harm, that we say in medicine. And then for for us, it was extremely important to have this kind of, you know, label and then with oversight of the FDA. And we would do the same thing in EMEA, which is the correspondent of the FDA in Europe, to do it. So we know we're going to work. We're very ambitious. We want, you know, this products to be bought by people because we believe it's a good one, that it would help them, but we would want to do it again the same way with the rigour that we want, even from the regulatory agency. So for us, it would unthinkable not to work very closely with the FDA to promote our product.

[00:42:37] Peter Bowes

Let me just ask you in closing, and I often ask scientists this same question, really looking at your body of work throughout your career and everything that you've learned. What is it that you apply to yourself and your own way of life now with your own longevity or your own health span in mind? If there was something that you could pinpoint and say, yes, I know that and I know that to be crucial. And it's something that I live by every day. What is it?

[00:43:04] Patrick Aebischer

Its funny because we get through the Covid. You know, also, you know, while I was President of university, you have a very busy life. It's hard to do exercise. So now I have a little more time. So I started really to exercise, you know, two hours a day. By just walking because we have the pleasure to live in a gorgeous scenery and so on. And to think because, you know, this is a great thing. I had never had before. Is the diet you're not attracted to now be much more respectful, but also it's difficult to respect everything. So big help by molecule like Urolithin is key. And that's why you have to be very honest. I was very keen and I've been now there for maybe three months on Urolithin. So, you know, I walk to talk. For me, it's very important that, you know, because I truly believe in this molecule. So for me, it was very important to be the first customer. But I found this also a pleasure. And of course, for us, it's wonderful because, you know, this is the results of 30 years of studies. You know, from what I've started as a medical doctor, as a neuroscientist, because we haven't proved yet in their side. But I am hopeful that we will see also an effect on cognition. And, of course, as you age, to be honest, the most precious thing that I have that we probably all have is our brain. So I see the effect in humans on the muscle. I'm even more keen about taking this to try to protect my brain. And I have nothing to lose because I know that this molecule is extremely safe.

[00:44:38] Peter Bowes

And looking forward. I often wonder why people aspire to reach, not necessarily a super great age, but that we talk

a lot about healthspan, maybe from a spiritual perspective, apart from the physicality of being healthy when you're older, which we've talked about. But just being an older person and still being aware. Still being connected, still being involved in life. Is there something, again, that you can pinpoint that you aspire to?

[00:45:05] Patrick Aebischer

Yeah, and I think, of course, you know, you want to. And the son of an artist and my father, you know, lived until he was 90 years old. And he was a painter. And, you know, artists are wonderful because they don't retire at 65. They continue. And the what is the most probably important part of our brain is our creativity. And when you look even at the history of music and so on. You know, you look at Richard Strauss or painting and so on. You have a lot of, you know, a very you know, some of the most important piece of work were often done where those artists were very old. So I think this part of it and the most precious part of it is our creativity, because it express who we are as human beings. And for me, that's probably the most important thing, is to keep this enthusiasm for life. This creativity, this ability to contribute. And of course, for this, you have to have good cognition. You have again to get to have good mobility is better. You know, to have good hearing even though Beethoven, while he was deaf was still, able. But he was a genius. And Degas, you know, a painter was able to sculpture while he lost his vision. But those are exceptional people For more regular people like us I think as much as you have the sense to have a life that is meaningful, the better it can be. And of course, that's why, you know, if we could contribute a little bit to that, I will have the impression that we did something useful.

[00:46:36] Patrick Aebischer

Patrick Aebischer this has been a hugely enjoyable conversation. Thank you very much indeed.

[00:46:41] Patrick Aebischer

Thank you.

[00:46:42] Peter Bowes

And over the coming weeks, we'll be hearing from some of the other researchers who are looking at this fascinating field of science. We'll also explore more about the science behind Mitopure, the pure form of Urolithin A, we'll hear some of the scientists who've spent much of their lives working to understand the importance of mitochondrial health and muscle strength as we age. And if you'd like to read more about Dr. Aebischer's work I'll put some details into the show notes for this episode, you'll find those at our website, LLAMApodcast.com, LLAMA being our acronym, Live Long and Master Aging. This episode of the LLAMA podcast was brought to you in association with Amazentis. The Swiss Life Science Company that's pioneering, cutting edge, clinically validated cellular nutrition. Under its Timeline brand. And if you enjoy what we do, you can rate and review at Apple podcasts. You can follow us on social media at LLAMApodcast and you can direct message me at Peter Bowes. Many thanks for listening.

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