Kaitlyn Phoenix: Alright everyone, welcome to our conversation today about longevity and aging, “What's so Super about SuperAgers?” I'm so glad you could all join us for the latest in the Live Better Longer series. Today we are talking about SuperAgers, people who have lived past their 95th birthday.

I'm Kaitlyn Phoenix, Deputy Editor of the Hearst Health Newsroom, which produces content for Good Housekeeping. Women's Day, and of course, Prevention

Live Better Longer, is brought to you by AFAR and Prevention. AFAR is a leader in making sure science happens and Prevention is, I think, one of the very best platforms for learning about science. We host these webinars as conversations with research experts, so that we can learn about the innovative interventions that extend our healthy years at any age. There, as you can see, have been more than 4 decades that The
American Federation for Aging research AFAR has been committed to advancing the science of healthy aging, and Prevention has been a well-known thought leader for nearly 75 years.

There's so much fascinating research being done around aging that I'm excited to learn about and to share with you through these conversations with researchers and other experts. Today we'll talk about what science is learning about healthy aging from those who have lived the longest among us. I'm honored to be talking to Dr. Nir Barzilai, Co. Investigator of the AFAR SuperAgers Family Study. As well as Natalie Ramirez, a 95-year-old, energetic and very proud grandmother and great grandmother in Florida.

Dr. Barzilai and Natalie. Thank you both so much for joining me today.

Nir Barzilai: Pleasure.

Kaitlyn Phoenix: Dr. Barzilai, let's start with you. So before we get into SuperAgers, let's talk about Aging. Is aging, flexible?

Nir Barzilai: Yes, absolutely. Yes. Because look we know that aging has a biology because we know who's old and who's young. What people don't realize is that this biology drives diseases of aging. And so, if it drives diseases of aging. We want to interfere before we get diseases. And in laboratories all over the world we went from hope that there's something we can do about it, to actually proving that aging, as you said, is flexible, that we can target this process of aging, and by targeting it we can delay this biology and delay the variety of age-related diseases, so we can live healthier for much longer.

Kaitlyn Phoenix: Aha! That makes perfect sense to me. And can you say, explain what you mean when we say exceptional longevity?

Nir Barzilai: Well, exception, longevity people can define it on their own. What I've started years ago is another SuperAgers study. This is the big one, taking people who were healthy when they were 95 years old. Now there are people who are exceptionally healthy when they're 85. That's also okay. You know, half of us die by the age of 80. Okay? So people who passed 80 and they're still healthier are less and less, but there is a lot of them.
So, we have kind of examples of people who achieve really great health and great age and as long as both those things happen, they can have fun until the end of their lives.

Kaitlyn Phoenix: Aha! Some people might say that having people live longer puts more stress on everyone else living. What are your thoughts on that?

Nir Barzilai: So, look, I'll give an example from my SuperAger study, that was kind of the preliminary to the AFAR SuperAgers Family Study. We recruited 750 Centenarians and their children and family. What did we want to know? The first thing is, do they just live longer? Or do they get diseases when everybody gets their disease? You know, we kind of accumulate disease. At age 60, we get the 1st disease, and treatment and the second disease. And it's treatment. And the treatments are interacting with each other. So are they just sick for 40 more years, or did their healthspan and lifespan? Did it go together? And we found out that it did and quite dramatically. They were not only living healthier, they were living longer.

But that wasn't really even the most interesting thing. The most interesting thing is that they had compression or contraction of morbidity. It's a term that suggests they were sick very little time at the end of their lives. We were there for 6, 5, 8 years at the end of their lives. And they were like 30% of them even didn't have any disease when they were a hundred years old and some of them just didn't wake up one morning.

So we started to think about the concept that's called longevity dividend. What happens if really we can use this example and say, we’re going to make you live healthier and live longer. And one day you won't wake up. What does it mean? The CDC was looking at the medical expense in the last 2 years of life of somebody who dies over the age of 100 versus those who die, you know, when they were 70, and it's 1/3 the cost, and our 100 years old when they were 70, they even didn't go to the to the doctor. And so what I'm what I'm suggesting is that being healthy is actually not a burden on the economy. It's a saving for the economy.

And, in fact, Andrew Scott who is a professor of economics in London Business School. And he said, guys, you don't know what you're talking about, even. You're totally underestimating because you're saying the medical cost. Okay? So this guy is not in the hospital. But what is he
doing? He's traveling, he's shopping. He's getting houses for his kids. So there's an economical value for being healthy. and this is, you know, in his calculation, 360 trillion dollars within the next 10 years. It's something that we cannot afford not to do so even for this economical reason. Of course, everybody wants to be healthy, but even for this economical reason, if we can imitate those super agers. Okay, we're going to have not only more happy people but we're going to have benefits for the economy. And this cannot be understated.

Kaitlyn Phoenix: I'm so glad you pointed that out, because I feel like so many people don't think about that aspect that these people who are living longer are living healthier, which is great. To continue our conversation. I was wondering, how did you get into studying this topic?

Nir Barzilai: For me, aging was really the major problem that I could see. I remember walking with my grandfather when I was 13 years old, and he told me what he did when he was young, and I was like, how is it possible? You know we look at our grandparents, and we don't see us being them right. We're like, where did they come from? What happened to them?

And that's how looked at that, and I said, "What is this aging thing?" And even when I went to medical school and became a doctor and I knew that cholesterol is important, and I knew that blood pressure is important, but I couldn't see. I couldn't look at the audience and see who has high blood pressure, high glucose, or high cholesterol. But I could see who's old and who's young and this was really a major thing. There were no aging experts or aging biology expert. I went to become an endocrinologist because I thought, "Oh, you know, there are all those hormones that are changing with aging. If we just fix them, it'll be great." It happened not to be true, but I got a really good biological education, so I can ask the bigger questions.

Kaitlyn Phoenix: Gotcha gotcha. That's so interesting. And so far, what have researchers like yourself learned from studying centenarians or Superagers? And what questions still remain.

Nir Barzilai: Okay. So you know we had 3 major theories.
One is that you know those centenarians aged 100 or older. They got to be this age because they did everything right. They didn't know what's right at that time, but maybe they happen to do everything right in their interaction with the environment, and we quickly found out that that's not the case. 50% of them were overweight or obese. 60% of the men and 30% of the women were heavy smokers. Exercise, even moderate exercise, even housework or biking or walking was less than 50%. So it wasn't about the environment. And, in fact, that was when we published this paper first, Jay Leno, at the Tonight Show show made a joke out of it, because he said that the secret to longevity is to be obese, to, you know, to stop exercising. And of course that's not true.

I have a woman who, I argued until her last day, which was when she was 110 years old, because she was by then smoking for 95 years, and I said, nobody told you to stop smoking, and she said all the 4 doctors that told me to stop smoking. They died. And the point is not that if you smoke 95 years you live a long life, which won't be true, but that for them it didn't matter. Why didn't it matter? Because they had, they had genes. They had changes in their DNA that were slowing their aging, so they slow it to such an effect that those risk factor didn't really add anything to them or not much to them.

Kaitlyn Phoenix: Makes you wonder how much longer she would have lived if she hadn't been smoking.

Nir Barzilai: And that was always the argument. But you know, at that certain point I hope, that I live as long as her. So I wasn't arguing, but that when you ask when you ask centenarians themselves, you can ask Natalie what she thinks, the first answer comes. It's in my family, you know. My mother was 102. My grandfather was 108, and you kind of understand that there's genetics. The woman who smoked for 110 years. She had 3 other siblings that died between the ages 102 and 109. Right? So it was in this family. And so this is very important for the SuperAgers, because we know that there is a large genetic component to that. And this is what we're trying to identify.

But I also I also want to emphasize: why are we doing this SuperAgers Family Study? And people might say, well, too bad that you can find genes, but I don't have a gene like that, and I don't want Gene therapy.
But you know we’re finding those changes in the DNA, those genotypes. Or we are finding them in order to find the mechanism by which aging is slowed. We already have two drugs that were developed in part based on our finding the fact that in centenarians we had several genotypes that had functional consequence. We could measure what they do in the blood and they were already turned into medicine. Once by Merck pharmaceutical, and another by Ionis pharmaceutical.

And so the thing is, our findings could be translated into medicine and we believe that since our centenarians live kind of 20 years beyond the average, that those things that we’re discovering will add a lot to an increased healthspan and lifespan for the rest of us.

Kaitlyn Phoenix: So interesting! Could you tell us a little about the SuperAger Family Study and the methodology? And who are the participants, and what you're doing with the study?

Nir Barzilai: Sure. So what we want to do is, we want to have somebody who’s over the age of 95 and basically lives independent or can actually pass a very, very basic cognitive function test. And what we want mainly at first is a sample of their DNA. How can we get a sample of DNA? They can spit into- We'll send them an envelope, and they can spit into a tube. And we have enough DNA from that. Okay but that's not enough. We want also DNA from their children, because remember, their children are endowed. So it's engineering in their offspring because their offspring have, you know, half of their longevity, right? A component’s in the or the genetics of that. And those kids, we're using those kids in my study. That is the current study. And we’re finding some really amazing things. The offspring of centenarians are biologically about 10 years younger than the people they are married to. So what we want is, we want the offspring of centenarians and somebody that they are married to. This will be a control for the environment and we want to have a good, diverse reflection of the community. So we take the offspring and the people who are married to them. But I started saying, those offspring are 10 years biologically. Later, they had less cardiovascular disease and less cognitive decline and less mortality right than their control. So we want to create 10,000 of those. Okay, we want to create 10,000 of those. Because if we have the genetics of 10,000, we're just much more likely to
validate our finding, to find all the longevity genes, and to really start manufacturing drugs based on our findings.

Kaitlyn Phoenix: And is this the triad that you talk about for the SuperAger Family Study? The three.

Nir Barzilai: Yes, that's the triad. So we need a centenarian, one of their offspring, and a person who is married to their offspring.

Kaitlyn Phoenix: Gotcha gotcha gotcha. This makes perfect sense. So you want to have all of that data to be able to compare and see what could be the environment? What could be genetics? All of that.

Nir Barzilai: Right. And but remember the offspring of the offspring, and the spouse of the offspring. What is the control is really important because it's the genetic of the control that we compare to the genetics of centenarians. Okay, we are trying to find the differences between them. The offspring comes later because we want to see, okay, do you have the same genetics? And if you have the same genetics, let's see how you compare to your spouse. And are you going to do better?

Kaitlyn Phoenix: Hmm! And what makes this study different from other SuperAger studies.

Nir Barzilai: Well, there are some studies that are looking at the genetics of centenarians around the world but they don't have enough power, and they cannot really find all the relevant genes. Let me just say you know we used, I had. I had a lab with animals, too. Right. And that's how I started my research and we were discovering things with animals, and we were sure that this is going to translate to humans. But it didn't many times right? We kind of were disappointed. We can cure Alzheimer's, but we still cannot cure Alzheimer in humans. And then it became apparent in the last few years that we can do better if we find genes in humans that either protect them from disease or accelerate their disease. And when we started doing that, we accelerated the whole process of getting the right therapy to humans because we knew it's relevant to humans and not only to animals. And this is the same, here we were looking at the people for who aging is slow, and therefore they're not getting diseases or not at the same rate. And this is based on genetic findings and once we have
the genetic findings, we can apply it, we can understand it better, and apply to therapy.

Kaitlyn Phoenix: Aha, okay, so would you say that your primary goals of doing this research is it to get those therapies down the line?

Nir Barzilai: It's nice that you said "What's our primary?" Because there's a lot of things when you say to scientists. They're all 'I'd like this', and 'I'd like that', and we will have it all available. By the way, this is all going to be available immediately on the web. So any scientist can come and do whatever they want to do to discover things. But if we want to say it as one sentence, this has to be translated to human health, right? We want to make sure that we're increasing healthspan of people, you know, kind of dramatically, and allowing them to have better, better, and better aging and better outcomes.

Kaitlyn Phoenix: And I want to point out the use of the term healthspan instead of lifespan, because we don't just want everyone to live longer. We want you to live healthier, longer.

Nir Barzilai: Right. I absolutely. And you know, I think there's a sensitivity and in fact, I realize from my own research that when I just say longevity people assume, okay, you're going to live longer. But you're going to live sick longer, right? And I think healthspan for all of us is the major goal. But please realize that it's the same mechanism. Okay, so if we're delaying, we're improving health, and we're also delaying death.

So they are both things. But I'm sometimes I'm saying, you know our goal is healthspan and if they ask me, what's the side effect? I say longevity, because, hey, maybe you cannot afford living so long. Right? Maybe it's a side effect for you. So healthspan is really important to understand if it wasn't healthspan. If we're just extending life without health, we have no interest in that.

Kaitlyn Phoenix: What does someone have to do to get involved in this study? How long is the process? What is the home kit like?

Nir Barzilai: It's all a web-based study, and immediately that shows you it's difficult, because how many centenarians are on the web. And really, I think our
primary goal is to find those people and the people who will find them are sometimes their grandchildren. Okay? And the grandchildren will say, "Hey, I have this incredible grandmother, and she is absolutely fantastic. And I would like to know why she's going so strong" and this granddaughter will help us register her parents right and her grandmother into this study and when they register into this study, which is a very easy web registration. Then we'll have an address, and we'll have an envelope sent, and the envelope will be clearly explained and marked will have descriptions of exactly what you want to do. Probably with the help of the granddaughter or their parents and really it involves spitting into a tube and an envelope that is enclosed there will be sent back to our labs where we'll process and take the science away from there.

It's really a simple registration. But please understand, this is such an exciting moment for us, because the thought of let's extend your healthspan. Let's prevent your diseases is really here and its already on the way. And we want to accelerate it and start treating you guys right now.

Kaitlyn Phoenix: And how will the data from this study help age-related diseases? I assume it will be all in the data bank together.

Nir Barzilai: First of all, I said that aging drives diseases right. Though you can. For example, you can be born with genetics for Alzheimer. There's one gene that's called APOE. 4. That is a major risk for Alzheimer. You'll get Alzheimer when you're 60 or 70, you'll die when you're 80. When you're born. You don't have dementia when you're one year or 10 years or 50 years. You don't have dementia. You need this biology of aging to get this to get this disease. Okay? So we want to interfere before. We have centenarian's who are AE 4 positive, and they're not demented. They're not demented, and they're not dead. Which shows you the power of targeting, aging and expanding your ability for healthspan. I don't know if they'll ever have a cognitive, cognitive dysfunction, but with it's with this in mind. You understand that the data that we'll have on what genetics, genetics they have, how it interacted with the things that slows. Their aging will be open for people to go and see.

Some of us already have ideas what it could be. Some others are saying, you know I'm not assuming anything. I just want to get all those this data.
And by the way, this data, when we're sequencing the genes of those centenarians, we have millions and millions of data points that can be looked at different ways, and questions can be asked in different ways, and we can do all of that, and learn much more about aging, about the resiliency, our resiliency for diseases, and about really the mechanisms that allow people to do that, and to quote, to start thinking of drug development. You know, how do we target these genes? So, all of us can have it and live healthier and longer.

Kaitlyn Phoenix: So other researchers will be able to access this, too. And so it's kind of thinking as an investment in everyone's future, because other researchers will be able to use it and make innovations with it. This is all so fascinating. One last question I have for you, and then we should bring in Natalie. But one question I have is, is the goal for everyone to be a SuperAger?

Nir Barzilai: You know. I think I think if you ask people, you know, you can ask people how old, you know if you tell them you're going to be healthy for every day of your life, and pick the age that you want to die and people will pick different ages. I picked an age 20 years ago. That was 20 years longer than, you know, older than me. Hold to these 20 years, you know. Now it's 20 years ahead, and I think everybody has a concept. So the answer is not everybody, not everybody wants to live longer. But I think people who you just randomly ask without any connection. That if you tell them we're talking about our ability to extend your healthspan, think they'll become greedy, live longer. We don't always agree, to convince you, we have a very famous, Guy? Who writes all the time in the papers that he wants to die when he's 75. Because why? Why would we age? And we're trying to tell him. Okay, but maybe we can move the age to 80 or 85. Is that okay? So no, it's 75. So not everybody's a believer but we are believers because we see those people, and you'll see Natalie in a second. You know that their ages were stunned. Okay, you don't expect her to really be her age.

Kaitlyn Phoenix: I know. I think that's the perfect segue. Natalie is a participant in this SuperAger study, and I'm so excited to hear your perspective on all of this. Natalie, thank you so much for joining us and Dr. Barzilai Thank you for your input too, and we'll come back at the end with questions, because I'm sure people will have some for both of you.
Natalie, First I think we’re all curious about this. What are your secrets to feeling healthy and vital? And what's something that you do every day that makes you feel well and happy?

Natalie Ramirez: Feeling well and happy comes from having family. It’s one of the secrets that we ignore or take for granted. I have been privileged and fortunate to have family around me, but we always did that from the get-go growing up with Mom and dad and brother, and siblings and cousins and friends is so, it gives you the enthusiasm and that enthusiasm helps with the growing up with the aging, with appreciating life. I always tell my children smell the roses. Not that necessarily. There were roses. I'm just saying, just look at that sunshine! Look at that tree! Look at that bird! Not the little thing, living in New York gave me an appreciation. People, the people are so incredible. The man in the delicatessen. The man in the Chinese laundry. The painter who came and painted our apartments was fascinated. People do, how they interact, how I interacted with them.

Kaitlyn Phoenix: Tell us your experience with the SuperAgers Family Study home kit. What made it quick and easy for you to do.

Natalie Ramirez: My granddaughter, and she was the one who did found this opportunity, and when we got the kit, she opened it and read the instructions.

To take a little bit of moisture from your mouth and put it in an envelope and send it away and realize that people are learning from that: It's mind boggling! That we have affinity with people that we never knew existed. It’s really wonderful.

So we happily did it, and they took care of putting it in the envelope. So I was just a participant. But they took care of the rest.

Kaitlyn Phoenix: You were the primary participant. What advice would you give to someone who isn't sure if they should join this study?

Natalie Ramirez: Who knows? Maybe they have that particular, a little grain of sand that they really was looking for that grain of sand. Ponce de León before
because this has been going on for centuries, but now we’re in a different place. Now we have the tools of medicine on our side before it was looking for a magic wand. Now, it's not in the wand, it's in the medicine that maybe afforded through these studies that will help people achieve a longer life.

Kaitlyn Phoenix: I love that, that's so true that miracle, that fountain of youth that people are waiting for it could come from this study and the information we learned from the genetics of it.

How do you hope studies like this will benefit future generations like your daughter or your granddaughter?

Natalie Ramirez: Well, just yesterday my daughter celebrated 45 years graduating from medical school.

Kaitlyn Phoenix: Oh, that's great congratulations to her!

Natalie Ramirez: That in all, where did 45 years go? So now she's 71, and my son became 70. On Monday, I had them a year apart, and all of a sudden, these people in are almost SuperAgers. They’re getting there and they have the enthusiasm of youth. Enthusiasm, it's not just an empty word. It's called a zest for living, enjoying a child playing and enjoying something that's very ordinary. That enthusiasm, I think, helps any person who's coming on in years or growing up. It's looking for the unknown. And my daughter entered, very young age. She was the doctor by the time she was 25, and she said I didn't know a thing and here she got her degree and has persevered, and I thank I thank God for it. And we we go forward with knowing that science is there to help us and believe in science completely, in the remission of diseases. Some of our family has gone through cancers and because of the miracles of these science and the sacrifices of the scientists that we have people in remission, that are here because of that help.

So what can we do as the SuperAgers? Join. I tell them anyone that's a SuperAger. Just join and be happy that you can be part of this wonderful search and journey.

Kaitlyn Phoenix: Love it.
Lastly, a question for you. What are some of the things that you're looking forward to accomplishing in your years ahead?

Well, the thing I'm looking. See the benefit of having these grandchildren and great grandchildren that call me up and share their days with me. That I can go on vacations, that we go to Puerto Rico, that we go to New York. In July we're going to go to New York and hopefully get to a theater show and and be able to do and see some of the old haunts when we when I grew up. I want to take a little tour of the streets that I was able to walk. 5th Avenue and 42nd Street. You gotta go. So I'm hoping to be able to do that.

Excellent, excellent. Thank you so much. I hope you're able to do those things too. There are a lot of great shows on right now.

Thank you, very much. Thank you. Thank you Dr. Barzilai

Now, let's see, here. We have some questions from our audience here. Well, we have one other one I want to start with which is for Nir. Are there other centenarian studies---like the New England centenarian study, the Northwestern SuperAger brain study--collaborating with each other?

Oh, absolutely, absolutely. The principal investigator of the New England Centenarian Study is also helping with in our study, and they have their own study. And we're participating there. We're trying to be a community. And again, it's very important for us, and as far as just set it up straight. We were going to do these studies, and we're going to post them in a way that everybody can harbor them and make really fast progress. So we want validation. And we want other people to come in and other experts to come in, and it will accelerate all our science. So yes, the answer is, Yes.

Great. Then we have our Q&A questions here. What are the top predictive markers genetic or factors (environmental/lifestyle) of a SuperAger?

So I will just give one example. That might be a little bit surprising. But 60% of our centenarians have some changes in their genetics that blocks
their growth hormones. Okay, now, there’s only one growth hormone. But there are many growth hormones. Okay, so please bear with me. But in our study, 60% have something like that. And its impact is remarkable in the sense that even when you take centenarians, they’re already 100 years old and you ask, who’s going to die first? And who’s going to die last? Those who have this low growth hormone levels are the one who are going to live twice as long. They’re already 100 years old. Okay? But they’re going to leave twice as long as the others. I mean twice as long as the rest of their lives, right?

Now, this is a concept that's really interesting, because on one hand, growth hormone is always good for you when you're young. The higher the growth hormone the less sick you are, the more successful you are. And somewhere at the age of 50 it changes when growth hormone is high, you’re doing really poorly. And why is that? Because when you go to the age of over the age of 50, and you start having your breakdown of aging you cannot invest your energy in growth anymore. You have to protect against this growth. So if you have lower growth hormone levels. It's better, better, better for you. So this is kind of an example. That is the scientific example. And they’re drugs that are being developed to stop the action, the action of those growth hormones. So this is, thanks for asking. I just chose this and an example. But there are many others.

Kaitlyn Phoenix: It’s so interesting. You noted there were 3 theories. One is that centenarians did things right. Two is the large genetic component. What is the third?

Nir Barzilai: Right, and I totally realize that I skipped one. Well, the one that I skipped, though I came to back, later is it could be, you know we have already changes in our genes that putting us at risk for diseases, for heart disease or for Alzheimer. I talked about this APOE 4 genotype right? There are genes for Alzheimer's genes for other diseases and we thought, you know, maybe centenarian, you know, being centenarian is one out of 10,000, 1 out of 5,000. Maybe they have the perfect genome. They don't have any of this garbage and we found out that our centenarians have at least, or between 5 and 8 genes that should have made them sick. Like the example I gave. Eventually the APOE 4, we have centimeters with APOE. 4. So we don't have a perfect genome. Okay, we don't have a perfect genome. Our genome, the genome of
centenarians, contains bad genes but they’re protected by the fact that their aging was slow. So those bad genes didn’t come into effect, at least not in the periods that we’re looking at. So yeah, it’s for certain, it’s not the environment. It’s not because. And they have, they don’t have bad genes, but it’s because they have other genes that slows their aging like the growth hormone. Like the other examples I gave.

Kaitlyn Phoenix: Excellent. Our next question is about the cost of longevity drugs, and how accessible they will be to everyone. Will they be very expensive? Is there an ethics component about this to your study?

Nir Barzilai: And that's very, that people are asking me that a lot. You know, we talked about the economy Macro economy. Right? We said, there’s a value. There's a longevity dividend for living healthier and longer. But what is the cost of that? And AFAR is also running another study, and I'm also involved in this study that's called TAME. It's Targeting Ageing with Metformin, Metformin is a drug that actually extends healthspan. Not as much as to be a centenarian. But several years of healthspan. And we're doing this trial in order to show the FDA that aging can be targeted. Okay? Which is another problem that we're dealing with. To the FDA aging is not a disease. So, FDA is like, what do you want from us? And we say, well, we want to prevent a disease, so, we are going to show them. But I'm giving this example because this drug Metformin is the cheapest drug in the American formula. Okay, it's really cheap. If FDA will accept what we're showing them. it'll be no cost for providers to give you Metformin. Okay, it's true, though, that we'll have better drugs. Combination of drugs and the cost might be just as we see with other drugs. Right? I mean, it will be expensive for several years, and then it will go generic. It's not going to be different. There will be much more expensive drug and much cheaper drug, and we'll find out how to do that.

I think the motivation of healthcare providers to keep you healthy, has such a big price on that that I don't think the drugs. Most of the drugs are not going to be very expensive for healthcare provider, because they get so much benefit out of that.

Kaitlyn Phoenix: Aha! Is there any relationship between hormones and exceptional longevity?
Nir Barzilai: I just gave the example of growth or months. And I also said that I thought that just fixing all those hormones are going to be beneficial. But it's much, it's much more complicated than that and part of the reason that some of our hormones are declining with age is also a protective mechanism. Maybe like with the growth amount that we don't want to invest in growth, we don't want to invest in reproduction. We don't want to invest in other things. We're trying to figure out what's the right period to use hormones. But if you just take older people and just give them hormones you usually get into trouble or also into trouble.

Kaitlyn Phoenix: Natalie, I have another question for you. Did you participate in studies before, and did you have any hesitation about joining this one? Would you participate in additional ones if they came along?

Natalie Ramirez: Well, I didn't participate before, but I've been always interested. And I got my Facebook pad because of Covid and so for entertainment, for my church services, and to keep up with the family. And one day, lo and behold! I open up the pad, and there is SuperAger. So I read the the ad and it said, 95. And I said, "Well, that's me!" So on my own. I called up and I got a very nice young woman and she explained to me what it was about and I said, "I'm willing to join if you want me, and here I am, and I thank you all!" I was enthusiastic about it. I'm so looking at this is wonderful, wonderful not just for the SuperAger to pay attention to what it means to grow into longevity not just because we get there but how valuable the contribution of the person that came before us for the future generations. So I'm very enthusiastic.

Kaitlyn Phoenix: Nir, some people may be scared to share their genetic data in a study. Can you assure us all about the safety, the security of our genetic data for people who participate? If someone would be hesitant to join a study like this, what would you say to help change their mind, or if you SuperAger, not a researcher, what would make you join this study yourself?

Nir Barzilai: There's a concern about your genetic information and the way we're dealing with that is the way genetic studies are dealing with it is we're keeping your private demographic information. Basically, we're keeping locked and all, all you'll have is the age and the sex of the subject, and
this is enough to understand longevity. If you have a 60-year-old and a 100-year-old, you know who's this information that's going to be available. We can ask Natalie: Does she care if her information is out, I mean, what? What can they find out that she's a centenarian?

Natalie Ramirez: They can have it!

Nir Barzilai: So not everybody has the concern. But the people definitely concerned should know there is an IRB, you know, a review board that looks at all what we're doing and how we're going to store and how we're going to make it available. And it's not going to be. You're not going to be identified publicly with this information.

Natalie Ramirez: Exactly.

Nir Barzilai: I would just say one thing. You let's say that Natalie has an APOE for genotype that puts her at risk for Alzheimer, and she's obviously not. She doesn't have Alzheimer, but somebody could argue that her children might inherit that, and maybe they're not going to be protected from Alzheimer, and they don't want people to know right? So there, there's a reason to keep this information. But we can assure you this is not going to be out there.

Kaitlyn Phoenix: Great. Okay. Now, Nir, why don't you take a stab at another question from the chat box that's striking your fancy.

Nir Barzilai: Somone asked : are there any geographical regions would have statistically more centenarians than other region? And I really want to say two things. First of all the Blue Zones, right? The blue zones without getting into much of that, are zones, are areas around the world where older people are healthy, and clearly a lot of that is environmental. It may be there are olive trees or some foods they're saying. But many is not environmental. But I do want to just say that before we have longevity genes before we have all those medications. The things that we should do is maximize or optimize or improve our exercise, our diet, our sleep, our social connectivity. They all have underlying biology, and they're all targets that we can do right now without waiting to not release results. Okay? And these are really the Blue Zones. Now, if you have an area like that, that is a Blue Zone, and you're going to live longer. Then you have
more chance also to become 100 years old, but I kind of learned to believe I have some facts, but it's still a belief that you don't get to be 100 years old without additional genetic help, okay? And in the blue zone, some are getting 100 and some are dying when they're 50. So, it's the statistics of the population. Okay? So yeah, their geographical location, they're Blue Zones. They're, you know there are more Centenarians in Japan, in Okinawa than anywhere else in the world. They're examples like that.

Kaitlyn Phoenix: Aha! Great I think we might have time for one more question.

Nir Barzilai: Well, very cute and related. Can a person who is a late bloomer in life be considered to be aged later? And I think back. If you think of those growth hormones, the people who have low growth hormones genetically, low growth hormone throughout their life, okay? So maybe they're what you say, late bloomer? Maybe they kind of got to their maximum height later than other people, and that then they have a benefit with aging and so there, there is a situation like that.

Kaitlyn Phoenix: Okay, let's see here, do we have another question for Natalie. Natalie: You seem like a very positive person. Do you have any advice on how to cope with loss, as you age, and outlive many of your family and friends?

Natalie Ramirez: Well loss is heart-wrenching. There is no easy way to go through loss. Loss takes time. People say it's a process. It's not a process. You don't forget anyone you've loved in your life. You remember them on every holiday. You remember them when you're doing something special. And in a way, it's a way of sustaining. It's a way that sustains you through the grief. Not trying to forget just remembering, remembering that they were with you for a time. And that you, by some process did not go earlier than them. I used to think I want to go before my husband, but my husband went before me and I've learned the process of caring for him even though he's not here physically. I remember our hard times that we shared, and also remember the wonderful times that we share. So grief is something that is very difficult to go through, but the love that you have for a person never leaves you and that sustains you forever.
Kaitlyn Phoenix: That's wonderful and I think we all could use a little dose of your warmth and positivity in our lives.

Nir Barzilai: Wisdom.

Kaitlyn Phoenix: Yes.

Nir Barzilai: And you know we wanna change aging, but we don't want to take wisdom away. So there you go.

Natalie Ramirez: I call it the experience of life, cause it's a journey. It isn't just get here to there. It's a road, and that road leads us to many surprises. And I, that's living.

Kaitlyn Phoenix: Thank you so much for sharing such a sensitive perspective on loss.

Natalie Ramirez: Thank you so much.

Kaitlyn Phoenix: So beautiful. What's something you're looking forward to, tomorrow?

Natalie Ramirez: Tomorrow?

Kaitlyn Phoenix: Yeah.

Natalie Ramirez: Well, tomorrow is what Thursday. My granddaughter has an appointment Friday. We usually will go shopping, so we'll have to be the day after tomorrow.

Kaitlyn Phoenix: Okay, okay, you're looking forward to Saturday!

Natalie Ramirez: Day after tomorrow.

Nir Barzilai: Kaitlyn. I just want to say that for tomorrow I hope that we have hundreds new candidates to join the SuperAgers Family Study!

Natalie Ramirez: Amen!

Kaitlyn Phoenix: And on that note, as a reminder. This study is ongoing. If you are a 95 or older, please join. You can go to the website listed here afar.org/superagers. Or if someone in your family or a close friend qualifies head over there.
For updates on the SuperAgers Family Study, you can follow [AFAR] on Facebook, LinkedIn or X. And you can also help AFAR continue to offer webinars like this at afar.org/donate.

Just keep following for our webinars. And we'll be posting our schedule online. I really encourage everyone to support AFAR and all the work that they make possible, so thank everyone for joining us today and following along.

Natalie Ramirez: Bye, bye. Thank you.

http://www.afar.org/superagers