Headlines of the Future

A podcast by Bayer

Episode 4 – The Imminent Wave of Aging

Kate Hayes (host): Welcome to Headlines of the Future, brought to you by Bayer.

Fascinating clues to help solve some of the most pressing global challenges from climate change to feeding a growing population to curing diseases can be found in science and innovation. I'm Kate Hayes. And I'm your host of the podcast, Headlines of the Future brought to you by Bayer. In this podcast, we get to hear from visionary scientists, thought leaders, and entrepreneurs to learn more about how the science of today may positively impact our lives in the future.

We're so happy you've joined. Today, we're going to talk about something that in one way or another, we hope will affect all of us. Healthy aging. With increasing average global life expectancy, the world is now facing two new challenges; systematically how to manage the extra costs associated with longer-term care and also on an individual level, how to handle the prospect of possibly spending more years in declining health, or even better, finding ways to stay healthy and active longer. As always, we've invited two extraordinary experts on this topic, Dr. Mike Devoy and Michael Hodin. **Michael Hodin is the CEO of the Global Coalition on Aging.**

And **Dr. Mike Devoy is Chief Medical Officer at Bayer Pharma**. Thank you both so much for joining. So, to start, please share with us in one sentence, what is to you, personally, the most fascinating thing about aging. Michael, we'll start with you.

Michael Hodin: Thanks, Kate. So, you know, on a personal basis, it's really the ability, the opportunity to keep working. Keep engaged. I'm at a point in my life where if I were living probably, you know, in the mid to late 20th century or before, or even a few years ago, I'd be what they call retired. And although I love golf and tennis and enjoy vacations, the idea of the ability to keep active, keep working, keep engaged, even starting a new venture, which the Global Coalition on Aging has been over the last decade. So that's really exciting and that's what the prospect of this new demographic shift has brought to us.

Kate Hayes: I'd like for you to explain a little bit more about the Global Coalition on Aging. What is this organization?

Michael Hodin: So, we formed roughly 10 or 11 years ago. And it was based on this idea that there is this global mega-trend of aging, 2 billion of us on the planet by mid-century, more old than young in every single society as it modernizes. And this is true around the world, whether we're living in Europe, the United States, Japan, but also Latin America, Asia, both rich and poor Asia.

And we have this idea that in order to achieve this goal around healthy aging, we involve the business community. And we would work with a relatively small number of global companies, cross-sector and cross-discipline. So, Bayer joining some of their pharma colleagues like Novartis Pfizer and Lily, but also Intel, Phillips, technology companies, Uber - Mike Devoy and I have recently been working with the CEO Uber Health - Home Instead, the global eldercare company, and we wanted to bring the business voice and the business strategy to this topic of healthy aging and shift it from, “Oh my God. There are all these old people, what are we going to do about them?” to “This is a huge opportunity for all of us and something that the business community can contribute to in a huge way.” So that's what the Global Coalition on Aging is, and I think we're executing on that plan.

Kate Hayes: Wonderful. We'll come back to that and more about “Oh my God, there are all these old people what to do with them.” But first I want to go to Mike and ask you what to you is personally the most fascinating thing about aging?

Dr. Mike Devoy: Thank you, Kate, and it’s great for me to join you and Michael Hodin here today. For me looking from the medical perspective, it's that people can enjoy a very long life expectancy and enjoy really great health in that and live to a healthy aging.

But what drives me is why can we not make that possible for everyone in society? So that as we live longer, all of us can go about our lives. Michael can still play golf, tennis, and run the GCOA. But that's my aspiration that we can bring that to everyone in society, as our population ages, and as we approach mid-century and 2.1 billion.

So, what is it that can bring that essence of healthy aging to all of us as we age? Because we know at the same time, lots of chronic diseases, unfortunately, do join us as we get older. But there's no reason that should be the case because we see lots of examples of people who have a very healthy, long lifespan.

Kate Hayes: Right. So, when you talk about why couldn't it be possible for everyone to have a healthy, long life? I would imagine that science could make it possible. I wonder if you could help set the stage, Mike, for how did we end up here and what is the role that science played? If you look back 200 years ago, the average life expectancy was around age 30, around the world. And then even in 1950, the global average life expectancy was only around 46. So now we're talking about age 70 on average. How did we get so far in so little time?

Dr. Mike Devoy: You are absolutely right. Our life expectancy globally on average has doubled in not much more than a hundred years, and that will lead us to this staggering number of first, living over 60 as we approach mid-century.

And there are obviously a lot of different factors that have played into that. Some such as just better nutrition, better general healthcare, better education, because a lot about living longer is understanding how to live that life. And those things have contributed along with better medical care, a better understanding of diseases.

You talked about 1950 and it was really in the mid-late fifties, we first had effective drugs for blood pressure introduced that people could take, which had a dramatic effect in terms of reducing heart disease and stroke, for example. So, we've had a lot of scientific breakthroughs, a lot of improvements in health care that's really contributed to that.

And the exciting thing, and I think one of the reasons that Michael's so enthusiastic about the future, is those breakthroughs - if anything - are accelerating. And also, now we bring together the scientific, if you like medical breakthroughs with the digital, the Silicon breakthroughs, in terms of providing healthcare, what we sometimes call a bio revolution.

And at the same time, as I mentioned, as we get older, we have these what we call age-related, chronic diseases, heart failure, chronic kidney disease, stroke, for example. Problems with our eyes such as age-associated macular degeneration. So, a lot of the focus is about preventing and treating these chronic diseases such as cardiovascular disease which affects over 500 million of us at the moment.

And there's a big burden for the individuals and their families and the healthcare system. But what I see is a lot of advances coming that mean these intractable diseases, diseases we were told just to live with, slow down, don't live your life. You get breathless, you are disabled from a stroke that we can intervene and prevent those with drugs, with adjustments to lifestyle, with digital interventions. And then as we look forward, what's very exciting is that approaches in regenerative medicine, cell and gene therapy, where we may be able to stop/reverse/cure some of these chronic conditions. That's not quite with us yet, but you know, scientists are working very actively on those sorts of approaches.

So, we've made a lot of progress then I think to really bring my vision of what our healthy aging should look like, it's really pulling through all these scientific innovations together with all the other aspects of living a healthy life, which is why the GCOA is such a fascinating collaboration because you meet the CEO of Uber Health, then you meet a colleague from Phillips and you meet people who are taking care of people in their homes, and you have pharmaceutical companies like Bayer there. It's really an intersection of all aspects of society and medicine that really will address this.

Kate Hayes: Yeah. So, I mean, I think when many of us think about aging, you know, we're thinking about it from our own personal perspective, like, “yeah, I can live longer than my grandparents did and that's fantastic.” And it's wonderful that science has brought us this far, but like, as you said, it sounds like the next step is how to live longer without being basically in a nursing home or not able to leave your home and do much because you have all these health problems that weren't as big of a problem when people weren't living this long.

But then you think about the whole systematic effect of what to do like Michael, you said, “oh my God, what do we do with all these old people?” So, I wonder if you can help us understand from a societal and economic point of view, what are the major challenges of an aging population.

Michael Hodin: Yeah. So, what we are beginning to see and clearly need to do an even better job on is a cross-society, cross-discipline collaboration on getting to healthier aging. Obviously, medicine, science, and healthcare are at the center in many ways, but Mike also alluded to more knowledge about our own healthcare and about having healthier aging. So, the engagement with, education and training and learning, parts of our society and parts of our government. And a third component, which in some ways, is at least as important as the health care component itself or the economic and finance ministries, because we have to get to the place where we have an understanding that there's a different set of priorities with respect to how we spend our money.

We have always understood the importance, and I would hope on a personal level that we continue to spend our public funds and even our individual personal decisions for the children. Childhood immunization, children's education, etc. But with 2 billion of us on the planet over 60, the idea of spending our money on, for example, adult immunization to join childhood immunization, is not only a good thing to do, but it's in our societal self-interest. Spending our money on 50, 60, and even 70-year-olds, learning and training, so we can continue to be active and contributing members of society in addition to spending our money on our 3 5, 8, and 20-year-olds education.

These are different kinds of societal priorities that are essential in order to get to that place of not only a healthier aging but an active aging that leads to a more vital society that is both fiscally sustainable and socially viable.

Kate Hayes: So right now, in the US for example, the average age of retirement is around 65, or when people think you should retire, but if you're living another 20 or 30 years, that's a long time to just be sitting around playing golf, like you said. But did policy changes have to take effect in order for it to become normal to keep working beyond that? People don't expect you to retire? That companies don't just write you off?

Michael Hodin: You know, it's interesting when you refer to the iconic retirement age of 65, which I think as we know here, but our listeners might be very interested in this and particularly so that I'm sitting here in New York, Mike Devoy, I know you're there in Berlin and Bayer is, of course, a global company but based out of Germany. This idea of 65 as a retirement age, the first time it was developed was by Otto Von Bismarck in the 1880s. This is not only the last century but two centuries ago. And he came up with that idea for different reasons. It was basically the politics of in those days, depression principality, where he essentially said, if other principalities around what became Germany, join us, we will give you health and social benefits that will be advantageous. Now for everyone over 65, this is what Bismarck said and put into policy for the three people who live past 65 in those days, that is the 1880s. He could afford it. We have a few more people like a couple billion who are living past 65 today. So, the first idea is to get rid of the old notion that 60 or 65 is retirement age and maybe just get rid of retirement entirely. So that's a major piece and you know, there's a lot of government policy that can change around that, but a lot of it within our own possibilities, every company can take the position if they should want to allow people to work as long and engaged as they want. And of course, it may look different for a 70-year-old from a 30-year-old, but of course, the last two years under COVID have taught us, many things can change, and we can move flexibly through that. So that's a critical shift and I'm glad you raised that, Kate. It's one that can be supported by public policy changes, but it's also one that I think we have a lot in our individual capabilities, both from the standpoint of an employer and our individual views of ourselves. So that old age of 65, you know, might've been right for Bismarck in the 1880s, but I'm not sure it's right for us here in the 21st century.

Kate Hayes: Right. Mike, I'd love to hear your thoughts on this.

Dr. Mike Devoy: Michael's really the expert in this area, but I don't live so far away from where Bismark was when he was developing those plans. And in Germany where I live now, the official retirement age is really only a couple of years beyond that. And many people retire earlier so that 65 has become hardwired into a lot of, as you said, Kate, employer’s systems, government social systems for retirement that doesn't fit with where we are as a society now. But it's a pretty radical change of mindset because I think everyone is sort of used to this ‘I'm going to school, studying for a profession, working in a profession, and then retiring.’ And I think we need to look at it as a much more dynamic where you may have two or three careers and adjust as you go through that longer life. I think because both for our own interests and growth, but also from a purely economic and financial point of view, we need to have a much more flexible idea of what our working lives are going to be like and how long they're going to be. But that to me is a very positive thing. I'd say it's great for me and great for society that, you know, Michael is combining some of his personal and social interests also with playing such an active role on a critical global topic like this.

So, I think that's really a model we should be looking for as individuals and as society, but it requires a lot of things that are deeply built into social-economic systems to change to accept that because it's something we're all going to have to work and build on to make it successful.

Michael Hodin: Well, as you're suggesting Mike, it's also built into, or even hardwired into how we think about ourselves. And, as we know, one of the four areas of this new decade of healthy aging that the World Health Organization and the UN have launched is what they refer to as ageism, you know, the idea that there's a kind of set of biases and prejudices built-in as a function of age. Ageism can be seen and reflected in many ways, but probably the most challenging cultural shift that it suggests we take is how we think of ourselves.

So, if people think of themselves as “I'm going to retire at 48 or 55 or 63” that will take us down one path. If people start thinking as themselves as “I want to keep engaged in whatever way, shape or form, it happens including work into my 70s or beyond” it's different. And as Mike alluded, this idea of ageism is also reflected even in the healthcare system and how we think of ourselves.

We were talking the other day about the example of heart failure, where some of the early symptoms of heart failure, are feeling weak, feeling tired, fatigue, the lack of power you have. “Well, she's 72 and that's what happens when you're 72.” No, she has heart failure, but it's not only the doctor or the community or the family member who might think that about a 72 or 83-year-old and therefore conflating age with a disease, but it's the individual themselves. They're feeling that way and may never even go to the doctor or when they have their check-up, they may not even talk about that because say, “well, you know, I'm already 78 and that's what happens when I get to be 78.” So, this ageism idea is a very much part of the culture, whether we're thinking about healthcare or work and retirement or education, and the reason I think that it was the first project that the WHO and the UN came out with earlier in the year.

Kate Hayes: So, Michael, I'm wondering since this is a global issue, obviously if the UN and the WHO are working on it, there are many countries involved. Are there any countries that are starting to stand out as role models, who are taking a really good approach to help people understand what they need to do to stay healthy longer? Or even thinking about innovations that can help transform the way we care for older people?

Michael Hodin: It's a great question, Kate. And thank you. And I would answer it in two ways. Number one, the answer is yes, and it tends to be those countries that have the largest proportion of old to young in their societies already, which is not so much a function of people living longer, but more a function of the lower birth rates. And those are countries like Japan, Singapore, a number of European countries like Germany, Finland, Italy, the UK, where the proportion of old to young, because of the relatively lower birth rates that we've experienced over the last two or three decades and built into at least mid-century, leads these countries to recognize that let's say an approach through the lens of aging is essential, not just from a health or education point of view, but from an economic point of view.

In Japan, which they even refer to themselves as super-aging, you will have pretty close to 40 percent of the population over 60 in the next decade or so. Well, if you think that you can have sustainable economies in a context where 40 percent of the population over 60 is now retired and behaving the way that demographic did in 1980 or even 2000, you've got to have a basic change in thinking and attitude. Until you get countries like Japan, China for a lot of different reasons, their one baby policy exacerbated by the fact that they're now behaving like everyone else and having low rates of birth.

So yes, there are a number of countries that are at the cutting edge. As Mike knows, the European Union itself for the first time ever two years ago in the formation of its EU government that is now has a five-year period created the Commission on Aging. There's a reason for that. So, there's a lot of interesting work going on and a lot of interesting places.

We see great reflections of that through innovation in biomedicine, in caregiving, and in technology because places like a Japan or a Germany, or the US understand that it is those innovations that will be the basis for a healthy aging and economic viability.

Kate Hayes: Well, you mentioned Japan and I have read a bit about Japan and even like the development of maybe like robotic things to help with the care of the elderly. If you think of 40 percent of the population needing some sort of long-term care, it doesn't seem like there would be enough caregivers to do that. So, do you know anything about robotics or the types of innovation that they're working on? Michael, we'll start with you

Michael Hodin: Yes. There is a great deal and I mean the whole relationship of digital health technology to robotics to AI through other aspects of remote patient monitoring is exploding. We've seen it as many have suggested as a result of COVID and in many ways, the lockdowns, the use of this kind of technology that might've taken another 10 years to get there happened within six to 18 months. You do see a great deal of this in Japan. Another interesting manifestation of that so in the caregiving world, we think of people health being people, which is absolutely true. And the personal touch. But there's the recognition that if we're going to meet the huge expanding demands, we have to increase the capacity to care.

And that has to use technology as well as the personal touch. And so, one of the interesting developments in 2021, one of Bayer’s colleagues at the Global Coalition on Aging, Home Instead, Omaha, Nebraska in the United States global elder caregiving company was bought by a Silicon Valley based technology company called Honor Technology so that they could put a high-touch and high-tech together.

And that's going to be happening everywhere. The Japanese, as you say, are already doing that, but we're also seeing the marketplace respond to that in a very interesting way.

Kate Hayes: Well, Dr. Devoy what do you know about some of the innovations that are taking place? Is there anything that you're reading about that really excited you?

Dr. Mike Devoy: So, in the tech and robotics, and it's fighting for pretty obvious reasons that Japan is a place where that's really accelerated. So, the use of robots to take care of people in care homes or in their own homes is amazing. And I think also appreciated and benefiting to the elderly people in those situations and I'm sure we'll see that expand around the rest of the world.

And, it’s one practical step forward. Michael also alluded to what we've seen accelerated in the pandemic. So, how we can use telehealth, digital health to provide ongoing care advice to us and without having to leave home, go to the doctor. So, one of the sorts of phrases of the moment is bringing the care and bringing the clinical trial from the hospital to the home so that we don't have to go to the doctor or to the clinic to get what we need. It comes to us. And that's really the intersection of technology, which is why we had the interaction with Uber Health, for example, in one of our recent calls. And also using digital tools to help people manage their health actively. And first, in that, I mean by preventing cause a lot of the conditions we call diseases of aging are really things which can be avoided and reduced if we take care. So, know using tools to monitor our cardiovascular health, following good advice in terms of exercise, fitness, monitoring our sleep patterns, those things are the first step. And then if we do then develop more severe forms of the disease, how can we manage and control? So, heart failure is one where we know very well, just simple things, just to checking our weight every day, checking our pulse, our breathing can help warn us if we're maybe heading into a more severe situation.

Nearly always intervening early is better than intervening later. And it also is very good for the health care system because being able to intervene and prevent the exacerbation of your heart failure when it's at a very early stage is a much more cost-effective as well as a much more patient-friendly approach than crashing into the emergency room and requiring two weeks in hospital and lots of medical care to recover you back to the previous situation.

So, technology will play a critical role in, you know, delivering my vision, which is this, you know, extra years of a healthy life, where we can do all the things we want to do. And I'd really pick up on what Michael said about the mindset shifts. People should expect to be strong and healthy as they get older.

They shouldn't be told if they go to the healthcare professional “while you're a bit slower, but what you expect your 72, 75, 85 now,” because we know that if things work well, there's no reason you can't be as active at that age as you were 30 years earlier. So that's part of changing also the assumptions we have about what life should look like as we get older.

Kate Hayes: Absolutely. And I'm sure that the widespread access to information now makes that much more feasible, but I wonder if that same information getting to people everywhere. I know all the countries we've mentioned have been developed countries so far. So, what about developing countries? Can you talk about how innovations are being made available to patients with age-related diseases or even younger people, a proactive, you know, preventative care in other countries that aren't as developed yet?

Dr. Mike Devoy: Very strongly we believe that there should be access to innovation and health, but all, not just health for those maybe in richer countries, but also recognizing to achieve that will require a lot of effort by all the participants.

So, healthcare companies, pharmaceutical companies that bring these innovations forward, the governments, the regulators, the health technology agencies that assess these things so that we develop ways of making the cost sustainable and accessible. That should be possible because these innovations ultimately will serve society to keep people healthier, keep them out of the very expensive hospital systems around the world. But, we have to really start planning for these things now, because also as Michael was speaking about aging, we used to think as if you liked something that was happening in so-called Western, richer economies, but it's actually accelerating across the world now.

So, it really impacts on every society. And I know Michael's been working on that as well, so I'm sure will have some interesting ideas on that.

Michael Hodin: Well, thank you. I think there are a few foundational points to understand that Mike Devoy you've just alluded to. Number one, the explosion in chronic disease or what we refer to generally as NCDs - non-communicable diseases - is happening all over the world, particularly related to growing old. It's an interesting reflection of how our healthcare systems look at this by calling cardiovascular, cancer, Alzheimer's, diabetes, etc. non-communicable. So, in other words, our systems, whether they're in the West or in developing countries are still in many ways based on communicable disease models and acute systems. You know, you have an acute event, you go to the hospital. You either get cured or you don't, and you're done. Non-communicable diseases are very, very different and obviously much more costly. Heart failure is unfortunately a good example. Alzheimer's is another very good example and the misunderstanding by many publicly that non-communicable diseases or chronic conditions are a function of the developed world is not realizing that everyone globally has been the beneficiary of the miracle of longevity. And you have people living into the 70s and 80s all over the world across Africa, Latin America, Asia, including Western Europe and the United States. So that's number one, the need is in many good ways because it reflects the miracle of achieving longevity, are much more common than they are different.

Then the second point as Mike Devoy says is the goal that we all have to scale innovations and make them available everywhere and that is happening. But a way to enable that is for all collaborating partners, both in the private and public sector and including governments whether you're in Southern Africa, Western Europe, or the United States to think of spending on health innovation as an investment, not a cost.

And that investment is for healthier aging that will have not only healthcare productive payback but economic and fiscal productive paybacks which themselves will then lead to greater you know, social integration across the societies. So, we have at our fingertips, the possibility of great things over the next couple of decades.

But there are some very critical public policy reforms that are essential, not least to ensure proper investment in health innovation is supported by government public policy.

Kate Hayes: Absolutely. So, when we talk about health innovation, Mike, I wonder, do you keep up on, you know, what are the latest, innovative approaches that are being talked about for treating chronic diseases? Will we actually be able to cure any of them in the future?

Dr. Mike Devoy: Great question Kate and the answer is ‘I'm very optimistic we will.’ So, and I come back to first is prevention and that's a healthy lifestyle, healthy diet, taking blood pressure tablets, keeping a good weight. Those things matter, but also we will still suffer from these diseases.

And what's exciting is what's happening in the area of what we call regenerative medicine, stem cells therapy, gene therapy, where we really see that potential to intervene in some of these conditions such as heart failure, such as eye disease, and reverse, potentially cure. And so, I think we will, in the next years, start to see some potential innovations, which will now be able to reverse some of these diseases and potentially cure them.

So that's really coming out of all the very exciting science we see in the area of regenerative medicine, which has made great progress in the last few years. And now we start to see the real potential of some of these advances coming into the clinic and becoming available to us. So, it's a really exciting and fast-moving area.

Kate Hayes: Absolutely, it is. What about something like chronic kidney disease? I know that's also a big issue. I mean, we've talked a little bit about diabetes. Do you see something more than dialysis or just taking insulin in the future?

Dr. Mike Devoy: Sure. I see that chronic kidney disease affects a large number of people around the world and is a condition which traditionally has really resulted in a steady decline. And as you say, in the last decades, ultimate intervention with dialysis for some people eventually, if they were fortunate a kidney transplant, but we, we now start to have drugs that can reduce that rate of decline to start to allow people to have a longer time where their kidneys can function well enough to keep them away from dialysis or a kidney transplant. So, they, again, they're taking good care of the diabetes is a key part about reducing your risk of having chronic kidney disease from diabetes. But there are now a number of medicines in the clinic that can reduce that risk and slow the decline. And there's a lot of research ongoing just because chronic kidney disease is coming with this like cardiovascular disease as are all our populations' age and has diseases like diabetes affect a lot of us as we get older.

Kate Hayes: Well, I can say from a personal standpoint, I'm, you know, someone in my mid-forties, I still, you know, I feel like maybe I’m in my 20s. I have no intention of getting old soon and I do try to stay healthy. And I feel like all the information that has come our way has really educated my generation. And you know, we're doing the same things now that we did 20 years ago.

But my parents and my grandparents weren't doing it my age. So, I'm wondering if I can ask both of you, what do you do to stay healthy and prevent diseases? Mike, we'll start with you.

Dr. Mike Devoy: For me, it's about taking care from a lifestyle point of view. So, trying to eat better diets, trying to take regular exercise, get enough sleep.

Sleep is an underestimated, critical health factor that doesn't just, you know, make you more awake in the morning. But if you don't sleep enough, you have a high risk of getting Type II Diabetes. It affects how your metabolism operates. So try to get your sleep regularly and then it's taking advantage of getting your health checks when recommended by the doctor. Paying attention, maybe, to early signs of disease and getting things checked out.

Because again, it's much easier to deal with something at an early stage than when it's become a significant problem for you. And I think looking at Michael and I, think it's also clear that males have been less good at doing some of these things, getting proper interaction with the healthcare system early enough to tell them you have a small problem. We can deal with it now rather than ignoring it. So, it's about taking good care of yourself in all those ways, which require a bit of discipline and attention, but I'm with you, Kate. I think that you can expect to be able to continue to do the things you want to do for a lot longer.

Kate Hayes: Absolutely. Michael, what about you? What do you do to stay healthy?

Michael Hodin: So, you know, staying healthy is on my mind a lot, particularly with the last 10 years, since we've created the Global Coalition on Aging. But in addition to the points that Mike Devoy made about sleep about exercise, about diet, two of the most important things that, that I try to pay attention to personally, number one on the prevention side, we know that monitoring your health, early detection, and earlier diagnosis can lead to better treatment or better yet even prevention is just so critical. And I would acknowledge, as Mike says that I'm probably not as good at this as my wife or my two daughters are, but I intellectually recognize the importance and try to follow it. The second part and here too, I would defer to our doctor here in Mike Devoy, but my understanding is the relationship between mental and emotional health and physical health is much more important than we may otherwise realize. And so, therefore, remaining active and engaged mentally, emotionally happy to be very blunt.

I remember there was a survey, I think there's a survey every year, of, you know, which countries or people in countries think of themselves as happy. And the happiest country is supposedly is Finland. Now it's not surprising, maybe that Finland also has one the oldest populations as a percentage of old to young on the planet. Finland, Italy, and Japan are the three probably top. So Fins know they want to remain active and engaged. And that too is another piece to make sure that my mental and emotional health is supporting physical health and then just hope for the best.

Kate Hayes: Hope for the best, but also know that you know, science and innovation are going to help us keep improving as they already have.

I know we're coming to the end of our time. And I have to get back to the title of our podcast, which is Headlines of the Future. And I like to ask each of you, what headline on healthy aging do you expect or hope to read in 2050? Dr. Devoy, we'll start with you.

Dr. Mike Devoy: For me, it would be <u>Science cracks the code of cardiovascular disease.</u>

Kate Hayes: Yes, that would be amazing. All right, Michael, how about you? What's your headline?

Michael Hodin: Mine is similar actually. The headline would be <u>Global leaders celebrate 10th anniversary of the chronic disease vaccine as Nobel Prize goes to five scientists from collaborating pharma labs.</u> And although you didn't ask, I will say that contained within that headline hope are a couple of things. One is the need around this innovation for chronic diseases, NCDs. Second vaccine is one of the more important prevention strategies, but thirdly, the recognition that some of our most brilliant genius and successful science is coming out of pharmaceutical labs. I remember reading an article about two months ago in one of the magazines that I look at, Commentary magazine, which was entitled <u>Thank God for Big Pharma</u>. And it was talking about the therapies, the digital technology, and others that are coming out of COVID. And so, contained within this is not only the hope about the success of such a biomedical strategy but that it's as likely as not to come from the private pharma labs which maybe society doesn't fully appreciate

Kate Hayes: You know, that's very true. And as someone who's married to a pharma scientist, I think that might be my headline Thank God for Big Pharma. I would love to hear society recognize and say that someday because it really is extraordinary. The work, the people like you and people, you know, who are just working across this industry, thinking about these topics are doing to ensure that we all have a healthier future.

So, thank you. And thank you both so much for joining us. Michael Hodin CEO of Global Coalition on Aging and Dr. Mike Devoy, Chief Medical Officer at Bayer pharmaceuticals.

And thank you all for joining us once again, for another episode, it's wonderful to have you along. If you want to learn more about science and innovations that help address some of our most pressing global challenges visit Bayer.com. Listen to our next episode. And subscribe. If you want to share the podcast with others or leave a rating and review. Thanks again for being with us and join us for the next episode.