Announcer (00:00)

The following is an encore presentation of Conversations on Health Care.

Mark Masselli (00:08):

Our guest is a widely published researcher whose latest findings are attracting attention. He says, new evidence shows that humans are approaching a biologically-based limit to life. He'll explain why he calls it a glass ceiling, and not a brick wall.

S. Jay Olshansky (00:23):

We have become so successful in extending life, in allowing people to live out past 60, 70, 80, even 90, that the majority of the population is going to be exposed to the basic biological process of aging, which is immutable currently. So if you expose enough people to this immutable force, the gain in life expectancy must slow down.

Margaret Flinter (00:50):

Jay Olshansky is a professor of epidemiology and biostatistics at the University of Illinois, Chicago. We are talking to him about his findings, and what they mean for the health care sector, for policymakers, and for all of us in our personal lives.

S. Jay Olshansky (01:05):

I can tell you that in the world of aging science, there is a tendency to embellish and exaggerate the effects of one treatment or another. Unfortunately, our field is filled with people that have been selling longevity for thousands of years. I call anti-aging medicine the second-oldest profession.

Margaret Flinter (01:24):

This is Conversations on Health Care.

Mark Masselli (01:35):

Well, Dr. Olshansky, welcome to Conversations on Health Care.

S. Jay Olshansky (01:39):

Thanks for having me. Delighted to be here.

Mark Masselli (01:41):

Yeah. You conducted this analysis with researchers from the University of Hawaii, Harvard, and UCLA. We know we've seen dramatic increases in life expectancy, or we think we have, over the 19th and 20th century. This is a result of healthier diets, medical advances, many other quality of life improvements. But you looked at life expectancy at birth in the world's longest-living populations since 1990. Maybe you could share with our listeners, what did you conclude about this being a glass ceiling and not a brick wall?

S. Jay Olshansky (02:16):

So look, historically there have been two revolutions. The first revolution was basic public health in the early part of the 20th century. It brought down early-age mortality. It saved children from dying from infectious diseases. It was enormously successful. Women stopped dying as frequently as they had throughout history from maternal mortality. So we witnessed about a 30-year increase in life expectancy in the 20th century. It was an amazing public health revolution, nothing like we've ever seen in human history.

(02:50):

There was a second revolution that happened in the latter part of the 20th century, as major chronic fatal diseases, heart disease, cancer, stroke and so forth began to succumb to advances in medical technology. We got very good at manufacturing survival time for people. These treatments, these surgical procedures, these medicines are actually enormously successful at restoring health back to where it is without these medications. In this latest paper, we took a look at the latest set of reductions in life expectancy, and demonstrated that something that we predicted in 1990 was going to happen actually happened.

(03:37):

What we said was, we have become so successful in extending life, in allowing people to live out past 60, 70, 80, even 90, that the majority of the population is going to be exposed to the basic biological process of aging, which is immutable currently. So if you expose enough people to this immutable force, the gain in life expectancy must slow down. This slowdown in the rate of improvement is not a consequence of harmful behavioral risk factors. It's a consequence of success. Of living long enough to experience something that is currently immutable, which is the aging process. So this is what we expected about 30 years ago. It's exactly what happened.

Margaret Flinter (04:25):

Well, Jay, I want to sort of level set our conversation, which I think is such a fascinating one. One, I want you to share with our listeners, what is life expectancy right now in the United States, and how does it compare to others? But part B of that would be, almost everything that I've been reading has talked about the deaths of despair, and how the deaths of despair is what is really driving this. I wonder, I know this is going a couple of levels into this, but is that segregated by social factors and disparities factors, and are you kind of separating those things out? So start that wherever you like. Thanks. I know it's a few questions in one.

S. Jay Olshansky (05:08):

Lots of questions in there. So first of all, let me explain what life expectancy is, because I think a lot of people don't really understand what it is. For a baby born today, how do you figure out how long that baby's going to live? The way in which this is done is that we use something called a life table. It's nothing more than an accumulation of all the death rates that exist today for people at all ages. We assume those remain constant. Under those conditions, we can calculate how long an average baby today would live. This is not the same as the prevalence of the older population, which will rise pretty dramatically during the course of the 20th century, due to past trends in birth rates. So right now in the United States, life expectancy is about 80. It's a little higher for women, a little lower for men.

(06:00):

Where are we relative to the rest of the world? I think we're maybe somewhere around 45. The vast majority of other developed countries has a higher life expectancy. Now, don't get me wrong. They're pretty close to each other, but there are some life expectancies up in the mid-80s for females like in

Japan or Hong Kong, for example. The United States, we're several years behind. So it's a pretty big difference between us, and virtually all of these countries are experiencing the slowdown that we talked about in this latest manuscript. Now, you asked about diseases of despair, and there's no question this is happening. If you go back to an article that my colleagues and I published in 2005 in the New England Journal of Medicine, we basically said, "This will be the first generation of children to live a shorter lifespan than their parents."

(07:03):

That was because of the latent effect of the obesity epidemic. Obesity really rose pretty dramatically in the latter part of the last century and the first two decades of this century. It takes a while for the negative health and longevity effects to express themselves. It began around 2010 or so here in the US, and actually in other parts of the world. But there were other causes of death that were also rising as well, and not just in the United States, but elsewhere. There's no question that there's two Americas. I mean, this was actually the original title of one of the manuscripts that we worked on for the MacArthur Foundation.

(07:46):

We were suggesting, there's this one subgroup of the population that's doing really well. They listen to their doctor. They go to their doctor. They take their medications. They are wealthier, more highly educated. They have access to health care. That population is indeed experiencing an improvement in life expectancy that's not that far different from other developed nations. Then there's another part of the country which is larger and growing more rapidly, which is experiencing these diseases of despair, diseases associated with obesity, with drug use, the kinds of behavioral risk factors that shorten life. So we think that that's one of the reasons why the improvement in life expectancy in the United States is much slower than it is elsewhere in the world. I think I answered all of your questions.

Margaret Flinter (08:38):

Yeah. Yeah.

Mark Masselli (08:39):

Well, that's interesting. We serve, community health centers serve special populations all across the country where race and economics have an enormous impact. You raised a number of things. I want to get to them a little later. Certainly GLP-1 drugs, the impact that they have. But I do want for our audience level set that your analyzed data was up to 2019. So that didn't include the recent COVID deaths or the impact there. How do you factor in the country's rising suicide rate? Margaret talked a little bit about that, but I'm really wondering what the impact of COVID is. Obviously, it's not just the initial wave of COVID, but it's long COVID, and a virus that continues to mutate. We don't really know where it will end up. We hope it's in our rearview mirror, but it doesn't seem to be going away.

S. Jay Olshansky (09:34):

So we stopped in 2019 for a reason. Had we gone to 2020, the negative effects of changes in behavioral risk factors and various phenomenon that influenced longevity, it would've looked much worse. We didn't want to have the influence of COVID influence the results of our analysis, so we stopped in 2019. Now COVID, I'll be honest with you, I actually drafted a manuscript early on in the summer of 2020 on COVID. We later discovered that we couldn't really trust the data from the CDC on what was a COVID death, what wasn't a COVID death. I'm not entirely trusting COVID mortality statistics, I'll be honest with you. What I do trust is total mortality.

Mark Masselli (10:24):

Right.

S. Jay Olshansky (10:26):

So the one thing that is stable on a month-to-month basis in the US and other places is the number of deaths that occur every month, and that pretty much stays level. We know there's some increase in the winter months in the Northern Hemisphere. But we did experience excess mortality, I'm pretty sure in excess of 20% in some time periods following the beginning of COVID. So it told you that the negative effects of COVID were pretty dramatic. And it wasn't just deaths from COVID, it was deaths from the collateral damage associated with closing down. There were lots of people who ordinarily would've gone to their doctor to treat medical conditions that they had, that couldn't go to them. Myself, I had to have my gallbladder removed in the summer of 2020. I had to wait, I think it was six to eight weeks, because we couldn't get a bed.

(11:24):

Now that's a relatively mild problem, but imagine somebody being treated for cancer or identifying cardiovascular disease. There were lots of other things going on. Now going forward, I'm going to use the three word answer that I teach my students, which is the right answer to most things. Which is, I don't know. We don't really know what the effects of COVID are going to be going forward. Now, rarely do we have an exposure to an infectious disease that has a positive effect later on. I mean, I had shingles about 10 years ago, actually. It's actually one of the reasons why I'm wearing these hearing aids, because I lost hearing in my left ear, in part due to shingles. That was a result of an exposure to chickenpox that happened when I was 10 years old.

(12:16):

We don't really know what the latent effect of an exposure to COVID is going to be. It could influence the cognitive functioning of some people. It could influence lung function in others. We just don't know, and it's going to take a while to figure out if there's any long-term effects of COVID exposure. Keep in mind, we do have about three pandemics every century. So there will be at least two more in this century. The good news is that we developed mRNA technology that allows us to deal with these conditions much more effectively than we have in the past. So there are competing forces at work that are going to influence COVID mortality going forward.

Margaret Flinter (13:06):

Well, you've been involved in this debate, and clearly one of the strong voices in it over life expectancy for a long time. We understand you actually have a bet going with a biologist who once wrote that the first 150-year-old person is probably alive right now. I think you said, "No way. That's not accurate." Tell us the kind of pushback you received to your latest research, and what's the basis for your colleague's argument that the first 150-year-old person is probably alive right now? What's the point of disagreement here?

S. Jay Olshansky (13:38):

So the bet is basically simple. Will anyone alive in the year 2000 be alive in the year 2150? If the answer is yes, then he wins the bet and actually gets about a billion dollars. If no one is alive in 2150 that was alive in the year 2000, then my ancestors will win. The premise of this was actually fairly straightforward. This is a friend of mine, Steve Austad. Who actually both of us are very much in favor of work that's going on in the world of geroscience today, this effort to slow the biological process of aging

so that we could extend the period of healthy life, and compress frailty and disability into a shorter time later in life.

(14:23):

The premise is that some new medical breakthrough in geroscience that slows aging is going to come online in enough time to influence enough people so that one of them makes it to 150. Now, just so that people out there know, the world record for human longevity is 122, Jeanne Calment, a woman from southern France who died in 1997. By the way, she smoked for 100 years. Now, this is not a license to smoke, as I like to tell my students, because most people that smoke will die earlier than would otherwise be the case. But it does tell you that smoking is not a risk factor for everyone, just like obesity is not a risk factor for everyone. I think I got to most of your questions. Did I miss anything?

Margaret Flinter (15:08):

Nope. I think that's good. If I translate it, and Mark may be following up on this, is part of what you're saying that we may not change overall life expectancy so much, but maybe we can compress the frailty, diminished vitality years of the life expectancy that we have?

S. Jay Olshansky (15:26):

Yeah, so this is critical. Back in 2018, I published an article in the Journal of the American Medical Association, where the editors asked me to communicate to physicians this whole concept of geroscience and why it's relevant and important. I basically said, "Look, we have had enormous success in extending life. We need to declare victory. We manufactured 30 years of life. We're still manufacturing survival time." Most of us over the age of 60 are living on what I call manufactured time, time that has been created for us by the worlds of public health and our physicians. I mean, look, I'm alive today. I'm 70 years old. And my wife, by the way, also are both alive because of medical interventions that happened earlier in life, not that long ago.

(16:21):

I would suggest that that's the case for many people over the age of 65. So we're patched together. We go to our doctor, you fix us up, you patch us up. You push us out the door, repeat until failure. The problem is that we face a phenomenon in epidemiology called competing risks. Which is another way of saying, the older you get, the more diseases accumulate in older bodies. It's like a game of whack-a-mole. If each mole represents a disease, the older you get, the more of them there are, and the faster they come up. It's not a winning game, but we are playing it right now and we're playing it very effectively. But we need to play it differently.

(17:04):

The reason is that, because we're being patched together by medicine these days living on manufactured time, we run the risk of success that may lead to failure. In other words, we may live long enough to get diseases that we don't want. It's possible that dementia, many forms of dementia including Alzheimer's, could very well rise in the future as a result of reductions in death rates from cardiovascular disease and cancer. Now, don't get me wrong. I'm not saying we shouldn't be going after cardiovascular disease and cancer. It's just that the population level, we need to be cognizant of what we're doing to ourselves.

(17:46):

We've been very successful, but the price we have to pay is the rise of diseases and disorders associated with aging. That's where we are today. That's why we're working so hard to try to change the game of

whack-a-mole. To push it out so that we don't even play the game until much later, and that we can compress that period of frailty and disability into a shorter time. This work on geroscience that both Steve Austad and I agree is going to happen is designed to extend healthy life. Lifespan extension may result. We don't know by how much, but we're fairly certain that it will make us live healthier longer. The translation is that it may take 70 years to become 60, or 80 years to become 70, but the whole idea is to be healthier longer.

Mark Masselli (18:37):

So let me talk a little bit about geroscience and the investments that you'd like to see. But before we get there, GLP drugs, GLP-1 drugs, and the impact that it has on your sort of model. Given that many people who are listening to the show know somebody or themselves are now taking one of the various brand names of the GLP drug. Having a profound impact. It also suggests that it may also have some collateral positive news for us in terms of the health front. How do you factor those types in, and is that a game changer than the sort of general medical interventions that have happened that make us better? Is it a leap forward, versus a step forward?

S. Jay Olshansky (19:23):

So I like this question, and let me tell you why. In the world of geroscience, those of us that are trying to find a way to slow aging, we're trying to get out of this one disease at a time model, where you have one disease, you have one treatment. What we're talking about in geroscience is one treatment influences multiple diseases simultaneously. It lowers the risk of all of them all at once. So is it possible that these new drugs can do that? Maybe. The clinical trials are not in. There's a lot of work that has to be done to make that determination. We don't know if people have to stay on these drugs the rest of their lives. We don't know if there's any long-term effects. I don't know much about the side effects. The answer is the same one that I gave you earlier, which is, I don't know, nor does anyone else.

(20:16):

There seems to be some positive signals indicating that it's lowering the prevalence of diabetes. Well, obesity and obesity-related conditions like diabetes and cardiovascular disease and some forms of cancer. So if it actually has a cascading positive effect on multiple disease endpoints, then it's a really good example of geroscience, of exactly what it is that we're trying to accomplish. Now we would need to document and demonstrate a compression of morbidity in older individuals taking these drugs, but it's too early to tell. I mean, they've been on the market for a while. I'm pretty sure the safety protocol has been established. So it's really efficacy. Does it really do what we think it does? It appears to have some benefits, but it's too early to tell what the long-term implications are.

(21:11):

So there's no way we can include that in our models. That much I can tell you. It's very, very difficult. I can tell you that in the world of aging science, there is a tendency to embellish and exaggerate the effects of one treatment or another. Unfortunately, our field is filled with people that have been selling longevity for thousands of years. I call anti-aging medicine the second oldest profession. People have been selling it for a long time with every conceivable pill that you can imagine. We don't need to exaggerate or embellish to justify why it is that we need to move in this direction of developing gerotherapeutics that slow aging. We're in desperate need in long-lived populations of drugs or interventions or patches, so to speak, that can enable us to live healthier longer. In the end, that's all we want. I had this-

Mark Masselli (22:10):

Let me get you in a little trouble. What shouldn't we be investing in? Because we've got a lot going into NIH. Where is it that you'd sort of say, this has not produced the results it should have produced?

S. Jay Olshansky (22:24):

You mean which of the various gerotherapeutics?

Mark Masselli (22:27):

Well, no. I think just the general investments that go into health at NIH and the like. Because at some point there's a pie. There's only so many slices in it. Geroscience you're suggesting needs more resources. Is there something that you'd sort of say, "Hey. We've spent this money in this type of research, and hasn't been productive"?

S. Jay Olshansky (22:52):

Well, so part of the conclusion of our latest manuscript is we will get diminishing returns-

Mark Masselli (23:00):

Right.

S. Jay Olshansky (23:01):

... from these investments. This cancer moonshot, look, when the moonshot idea was developed years ago, I can tell you that this whole concept of geroscience was considered by President Obama as a potential moonshot. They went after cancer instead, because the vice president's son had brain cancer. But I think if you really want to go after cancer, the way you go after it most effectively is to go after aging. That would be the same answer, by the way, for almost all of the things that go wrong with us, since aging is the primary risk factor for most things that go wrong in older bodies. So yeah, in the end, the answer to your question is interventions that modulate the biological process of aging is the way to go in the future if you want to influence cancer, if you want to influence health and longevity.

(24:02):

It's both mind and body. Keep in mind, if we extend the length of our lives just by extending the functioning of the body without influencing the aging of the brain, we may create a worse condition that we don't want. Whenever you get this mismatch of mind and body at older ages, that's when you run into problems. When you get a healthy mind and body that makes it out to older ages together, it's a really wonderful thing to see. Numerous publications have come out documenting the economic value of extending healthy life. I think some researchers from Harvard and the UK estimated about $38 trillion in added value for one year of healthy life.

Mark Masselli (24:54):

So live long and prosper?

Margaret Flinter (24:58):

Well live long and enjoy life. Along those lines, you pretty much can't pick up a medical publication or the newspaper in this most recent month or two, maybe going back several months, about the potential impact of alcohol, and unsafe at any level, like unsafe at any speed. It kind of ties to both things that

you're talking about, sort of aging, but also the impact potentially on cognition. That one sort of came a little bit out of left field, in terms of decades of safe in moderation, to saying maybe dead wrong on that. And that this might be a contributor certainly to morbidity, at least in terms of Alzheimer's, if not mortality. Do you see any value to factoring in these kind of more recent studies that come out, or are you really sticking with the longevity tables and using that as your guidepost?

S. Jay Olshansky (25:54):

Well, personally I stick with the longevity tables, but it's funny you should mention this. Because I was at a conference in Australia two years ago, and I was asked this very question about alcohol, because this issue of safe levels of alcohol came up. There were, I don't know, 5-600 people in the audience. Almost everyone had a glass of wine in their hands. Somebody asked me this question, and I said, "Look, I'm going to be honest with you. You may not like the answer, because you all have a glass of wine in your hand, but there may not be any safe level of alcohol at all." It reminds me of the old discussion of hormesis. You may remember this, right?

(26:34):

This was an argument made decades ago that a small amount of radiation was actually thought to be helpful for you. It juiced up the immune system, so to speak. Until it was eventually discovered that, yeah, no, sorry. There is no healthy amount of exposure to radiation. So this is a tough one to deal with, because alcohol is so prevalent in our world and even in small quantities. I'll be honest with you. I don't drink any alcohol at all, neither does my entire family. But this is a tough one, because alcohol is such a part of our world, it's going to be hard to break that.

Mark Masselli (27:15):

I really want to go to sort of the economic impact of the work that you're doing. Because we've got a lot of folks in the marketplace who are telling them that they'll live to 100 and beyond, right? The insurance companies, the wealth management business. I'm wondering what the implications of your findings for people who are told, for instance, that they're going to retire for over 30 years, and need to save for that eventuality. Any thoughts on that?

S. Jay Olshansky (27:44):

Yes. We actually address-

Mark Masselli (27:46):

Their kids are going to invest, have a lot of money.

S. Jay Olshansky (27:50):

Well, so what's going to happen... The reason why this happened, by the way, is that shortly after our science article came out in 1990 predicting this slowdown, others said, "No, no, no. It's going to accelerate. Life expectancy will rise pretty dramatically. Half the babies born today will live to 100. Life expectancy is going to go up to 100 by 2060." There were lots of companies, including insurance companies and wealth management firms, that completely bought into this hook, line and sinker. So the insurance companies underwrote business under the assumption that larger and larger segments of the population were going to make it to 100. We'll be lucky in the United States if 5% of the birth cohort makes it to 100. So their entire book of lives in the insurance industry is, if indeed that's the assumption that they made, may be in trouble.

Mark Masselli (28:46):

Let me get one last thing, of how you relate to the Blue Zone folks. Any relationship there, who are looking at places around the globe where people are living longer lives?

S. Jay Olshansky (28:57):

Well, there have always been pockets of people that have lived long lives in different places. Blue Zones, this has been suggested to be around for quite some time, and I know there's been some recent research suggesting that people at extreme ages may be exaggerating or embellishing their ages. I wouldn't be surprised by that at all, but it's completely immaterial to these issues of population level life expectancy. By the way, if you're a wealth manager, it is profoundly bad advice to tell all of your clients to plan to live to 100, because they're going to be spending a lot of time working when they could be enjoying their retirement instead of planning for years that they're not likely to live.

Margaret Flinter (29:45):

I have to sort of bring it back to our work in community health centers, which has such a big focus on trying to reduce or eliminate health disparities. Certainly quality of life is huge, the ability to not be beset by some of the challenges and chronic illnesses that we see differences by race, ethnicity and poverty. When you build those tables, it sounds like it's an all in for all the humans that we're looking at in a country. But are you also separating out and looking for progress by different categories of people, where we know that there are differences today in life expectancy by race, ethnicity or poverty?

S. Jay Olshansky (30:33):

Yeah, so we've done that already. We published on that years ago through the MacArthur Foundation Research Network on an Aging Society, where we demonstrated that there are multiple subgroups certainly within the United States, some of whom are doing very well and some of whom are not. And the ones that are not doing well are growing faster than those that are doing well, which is one of the reasons why our life expectancy is so low relative to other countries. I do have one related story. I'll be real quick.

(31:02):

In Chicago, there's a famous street called the Midway Plaisance that runs right by the University of Chicago, where I was a student and faculty member for years. On the right side where the university is, life expectancy is way up in the 80s. On the left side where there's poverty, life expectancy is about 100 years behind. So you can have people living across the street from each other experiencing pretty dramatic differences in longevity. This is a classic example of the influence of the social determinants of health and life expectancy.

Mark Masselli (31:40):

Well, Dr. Jay Olshansky, thank you for this fascinating conversation. Thanks for all the great work. We look forward to seeing, or somebody will see who wins that bet in 2050. Thanks, our audience, for being here. Don't forget to subscribe to our videos on YouTube, and find us on Facebook and X with our account name, CHC. As always, you can go to CHCradio.com to sign up for email updates. You can also share your thoughts and comments about this program. Thank you for joining us. Jay, thank you so much. Great conversation.

Margaret Flinter (32:15):