This Longevity Equation Sheds New Light on Wealthspan

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Health, wealth, and technology shape how long — and how well — you live. Here’s the equation that explains why.

Modern medicine and technology have pushed life expectancy to an all-time high — but more time isn’t always better time. Without the right support systems in place, poor **quality of life** in our later years can strip away longevity’s greatest gift: the ability to actually embrace and enjoy it.

Healthspan contributes the vitality and resilience you’ll need as you age, while **wealthspan** — often overlooked — provides the resources to support the journey. Together, they form the foundation of a new framework called the Longevity Equation, which maps how health (H), wealth (W), and technology (T) combine to shape how well and how long we live. Expressed as (H × W) × T^?, it reveals that these forces don’t simply coexist — they multiply, amplify, and in some cases undermine each other.

The equation was created by Dr. Dawn M. Carpenter, DLS, director of financial longevity at the **Milken Institute**, a nonprofit, nonpartisan think tank working to accelerate measurable progress on the path to a meaningful life. We spoke with Dr. Carpenter about what the equation means, why it matters, and how to wield it in service of healthier and happier years ahead.

Q: What prompted you to develop the Longevity Equation?

A: I think it started off with this observation that we’re living longer. But many people don’t feel secure in that longevity because there are these extra years. So the question is, how much quality living do you have in those extra years? I knew intuitively that it wasn’t a simple question of health. There were other factors involved.

We oftentimes look at longevity singularly as biology, but I see it more as a system. So I knew that there was a correlation with financial well-being and this idea of technology. I'm trained as an ethicist, so technology isn't just the wearables that you wear or the phone you carry around. It's also whatever prompts you to have human agency or make decisions. I knew that was a factor, but I really began to think about it as a multiplier.

So the equation was meant to be a thought exercise on how to explain in a very simple way how these multiple variables interact together.

Q: What is the actual Longevity Equation and how does it work?

A: I'll answer without getting technical, because this was never designed to be an equation for mathematical purposes. It was really to help describe the interaction between variables.

Very simplistically, longevity is the sum of health. We experience health on a spectrum, just as we experience financial well-being on a spectrum. You have those with fragility at one end of the spectrum and optimization and well-being at the other.

But most of us don't reside at either one of those ends of the spectrum. We're somewhere in between. And so the equation was meant to say that health and wealth are multiplied because they depend on each other.

It's important because we can't fully use our financial resources if our health limits us. But you also can't sustain health if you don't have financial stability.

And this idea of technology, as I mentioned, is the multiplier. It expands what's possible, but it also amplifies inequalities if access is uneven. As an example, you might imagine that two people can have the same medical diagnosis, but one has savings and maybe paid leave or access to telehealth, but the other doesn't. So the outcome isn't just medical, it's economic, and it's structural.

The equation is really less about predicting lifespan and more about explaining why two lives with similar starting points could have such dramatic differences across a life course.

Q: What are the different portions of the equation?

A: In this equation, longevity equals health times wealth (that portion is in parenthesis), multiplied by technology to a beta. What a beta does is it shows the function of compounding, so you could think of it in terms of looking at how quickly a positive gain or a negative gain impacts our relationship between biological health and financial well-being.

And so the equation is meant to say: let's think of those levers in health that could be moved to help propel us towards more optimal health outcomes. But let's imagine what could be developed if you also had an intervention or a lever that also existed in the financial space. So together, you're optimizing your opportunity for even better outcomes if you could think about how they interact together.

Q: Can you share how the factors in the Longevity Equation determine lifespan?

A: The equation is not a formula for predicting how long someone will live. If I had that, I would have solved the quintessential question. It's better to understand it as a framework for explaining whether life can be coherent, stable, and expandable over time.

Health gives you this physical and mental capacity to participate, right? But wealth gives you the ability to absorb shocks and to make choices and to plan beyond an immediate crisis. If you look at the technology variable, technology can widen access to both, whether that's remote care, better financial planning tools, assistive devices, or more flexible work.

Technology magnifies, on the other hand, the inequalities that we have when it lands in systems that are already uneven.

To ground it in something tangible, let's say that someone has just had a cardiac event. Whether those additional years are lived with quality depends on whether or not you can afford follow-up care, adjust your work schedule, manage the transportation that it takes to get to where you need to go to get the care that you need, or just navigate the system.

Lifespan is biological. But lived longevity is institutional. The goal of putting this equation together is to say that we do not live in a world of silos, although we behave that way because our institutions were developed that way.

Now we're forced to re-examine that because we never imagined when our systems were designed that we'd be living 20, 30, or more years in what we once called retirement.

Q: Why is wealthspan as important as healthspan?

A: A longer life without financial continuity feels like freedom, but it also gives you more exposure. Wealthspan is not just about luxury, it's about having enough stability to carry a longer life without constant triage.

If you are in a position where you have systems and supports in place, when there are these shocks, you're better able to weather them and navigate around them.

Healthspan tells us whether the engine runs, but wealthspan tells us whether we have enough fuel for the trip. You need the car, but you need the fuel as well.

Without wealthspan, people delay care, stay in jobs that damage their health, and scale back on the various supports that make longevity possible. Oftentimes, we live through this, but don't step back and actually think about how it works.

Q: Technology is part of the equation. In what ways can this support longevity?

A: Technology is one of the greatest enablers of longevity for one really important reason: it can extend reach. It's what can bring care into the home. It can help us monitor our chronic conditions and help us make better financial decisions.

It reduces friction and all those administrative things that we have to do to manage both our health and our financial well-being. It can also make work more flexible.

If you want to think about a very practical tech example, I'd say think about telehealth. For a person with mobility challenges, as an example, flexible work, broadband, and digital confidence can all reduce things like missed appointments for the doctor or the burden of care on the individual and their families.

Compare that with someone without reliable internet, access to a device, or, in some instances, language support, or even digital literacy. That same innovation may exist in theory, but maybe not in practice.

Q: How might the Longevity Equation change people's real-world decision-making?

A: It invites people to think in systems, rather than in silos. Instead of treating health, savings, work, and technology as separate goals, it asks you to think about how these decisions reinforce or even weaken each other across the lifespan.

Oftentimes, when we think of longevity or aging, we're thinking about that maybe last third of life. What this equation is inviting us to do is think about it as a life course. Think about it as an individual. You can change how you view very ordinary choices. Exercise isn't just about well-being in this context. You could think about it as a long-term economic asset.

Emergency savings give you protection for continuity. You can look at something like skill development. It's not just about short-term improvements to land a promotion. It helps you preserve your earning power across a longer life. Even caregiving planning is not just a family matter. It should be part of financial design.

Think of it as compound interest but applied to life design. Small decisions that seem really unrelated to short-term accumulation and are really part of building resilience. The point of the equation isn't to make people anxious. It's meant to help recognize that choices are connected.

Q: What surprised you the most when you were researching the Longevity Equation?

A: Just how many people are doing what culture tells them, but they still don't feel secure. They still feel a sense of disruption or instability, suggesting that the problem is not just a personal discipline issue, it's really embedded in design.

You could do all of the right things, and then still be in a place where it's suboptimal, or sometimes catastrophic.

It’s taken us so long to recognize that, because it wasn’t until we started realizing how many people are living so much longer that there is such strain on the systems and institutions that we have in place that we have to start thinking differently. My biggest surprise is that it just didn’t happen sooner.

Q: How can the Longevity Equation shift the conversation around aging?

A: I think the most important thing is that it can shift the conversation from thinking about aging as decline. In my view, we start aging the moment we leave the womb.

As opposed to thinking about aging when you start seeing the first wrinkles or gray hair, the longevity equation gives us a chance to think about aging in a different way.

Rather than decline, we look at design. How do we choose and create the conditions for an optimal, healthy life?

I know we talk about the difference between healthspan and lifespan. We want to get more healthspan out of the lifespan, and we cannot do that without thinking about these other variables.

What I hope the equation can do is reframe the public conversation around all of this. It helps us to see that the stakes aren’t just biological. They’re moral, they’re institutional, and they’re economic. And by looking at them in a holistic way, we can start having different kinds of conversations.

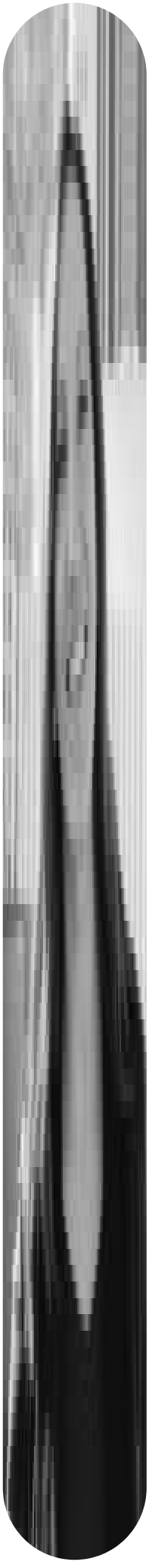
This interview has been edited for length and clarity.

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