

Interview with Dr. David Meltzer Economics of Longevity Science

KYLE JENSEN: Welcome to SAGE Crossroads, the premier online forum in issues of human aging. These podcasts feature lively discussion with the experts on the ethical, political, economic, scientific, and societal implications of aging related science. Thank you for listening.

I'm joined now with Dr. David O Meltzer. Dr. Meltzer is an associate professor in the department of medicine and an affiliate faculty member at the Harris School of policy studies in the department of economics at the University of Chicago.

In the report, *Exceptional Returns: The Economic Value of America's Investment in Medical Research*, you state data on the value of a longer life that is independent and free from morbidity is hard to come by, why is that?

DAVID MELTZER: Well, I think it's hard to get an exact estimate. I think we have some data on it from various sources. Probably the best source we have to understand how people value extension of life is data that comes from the choices that they make. So for example, when you see someone taking a riskier job that pays higher wages, well a job that's riskier to their health that pays higher wages, implicitly they are putting a value on their health. So you can use data like that to get some estimates on values that people put. The problem is moving from observed facts like that to wage differentials to how people value different types of improvements in health of smaller magnitude or of a different nature makes it very difficult to extrapolate from the choices we see people making to the values they would place on things like medical care. So, those are some of the reasons why it's hard to know for sure. That much said, it's pretty clear that people are willing to give up income and consumption in order to be able to live healthier and live longer, so it's clear that these improvements in quality and length of life are highly valued.

KYLE JENSEN: Your work also seems to argue that longer, healthier life is very valuable yet historically undervalued and conservative. Why do you believe this is true?

DAVID MELTZER: Well, so the way I like to think of it is in terms of length of life and quality of life. So a lot of work in medical cost effective analysis and in other areas have tried to determine the gains to health in terms of both length of life and quality of life. You then weigh those gains versus the costs of the interventions that produce them. What my work is focused on, or at least an aspect of my work, is understanding how extensions of life create costs in ways that may not be obvious. So, for example, when you live longer, you have more years in which you have to support the cost of being alive, medical expenditures. Conversely, if you're living longer and working, you take earnings away from that. It's traditionally been the case that fields of medical cost effective analysis haven't included costs of living longer. As a result, cost effectiveness has also systematically underestimated the costs of life extending interventions. In contrasts, interventions that improve the quality of life don't have these costs due to

length of life. As a result, there has tended to be a bias in traditional methods of cost effective analyses. You spend too much money on things that make you live longer relative to things that improve the quality of life. And that's been one of the major focuses in the work that I've done on cost effectiveness.

KYLE JENSEN: So what do you think is missing from the current economic models when looking at a population that is living longer?

DAVID MELTZER: The costs of supporting those years of life in added years of life that are generated because of medical interventions. One way to think about it is to imagine that our health were improving but somehow we weren't living longer, that we were just living healthier. If that were the case, as we live longer, we wouldn't have to save more and more for retirement, and we'd have more and more available to consume in the present. But as it is, as we live longer and longer we are forced both as individuals and as a society to put aside more of our income now and to reduce our consumption now in order to be able to support ourselves in those added years of life. Now that's not to say those added years of life aren't a wonderful thing. They are great. When we value the gains of medical interventions, it's of course appropriate to consider both gains in length of life and quality of life as important benefits. The point is those benefits need to be measured against costs, and so you need to not only include the costs of the medical interventions themselves but also the added consumption that's needed in order to support those added years of life.

KYLE JENSEN: Do you think that economists and researchers are addressing these deficiencies adequately?

DAVID MELTZER: Increasingly their effects are being understood in the evaluation of technology. So I first worked on this issue about 10 years ago, actually more than that – it's a little more than 10 years ago, and at that time people weren't including these costs. Now these are increasingly included in many cost effective analyses, certainly not all but many of them. One nice thing that comes out of some of this work is that you can often do a sort of back of the envelope calculation to get a sense of how important it is to neglect future costs if they are left out of an analysis. In essence what the analysis is, to look at what the rule of thumb is, to look at the effect of an intervention on length of life compared to quality of life. If it's causing you to live much longer but not causing you to live much better, or slightly differently, if the effects on life expectancy are slightly much larger than the effects of quality adjusted life expectancy then it's possible that the omission of future costs could be a major bias, but for medical interventions that mostly improve your quality of life and don't have a big effect on life expectancy, this isn't a big issue. You can look at any intervention the effects on life expectancy relative to quality adjusted life expectancy, and you can use that as a sense of how important it would be to include future costs and what the bias would be if you were to omit them.

KYLE JENSEN: Lastly, the audience of SAGE Crossroads is made up of scientists, policy makers, and curious consumers. If there was one statement you could make to all of them regarding economics of longevity science, what would it be?

DAVID MELTZER: I think the most important thing to recognize is that one of the biggest challenges to the future ability of this country to extend longevity through medical care is the cost of health care. Tools such as medical cost effective analysis that allow us to determine when we get the most benefits from the spending that we have are a crucial component of wise decisions and one that has been neglected far too long in the United States.

KYLE JENSEN: Thank you. On behalf of SAGE Crossroads, I'm Kyle Jensen.