Interview with Dr. Aubrey DNJ de Grey
Compression of Morbidity

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. Aubrey de Grey. Dr. de Grey is the chairman and chief science officer of The Methuselah Foundation and the editor-in-chief of the journal Rejuvenation Research.

Dr. de Grey, what is the compression of morbidity theory?

AUBREY DE GREY: The compression of morbidity theory is the idea that we may be able to reduce the period at the end of life in which people are frail and decrepit and diseased as a result of their age.

KYLE JENSEN: Now do you feel that the compression of morbidity theory should be the focus of biomedical gerontology?

AUBREY DE GREY: No, not really I don't. It's important first of all to remember that the original description of compression of morbidity by Jim Fries in 1990 did not even propose this. What he proposed was that actually it would be easier to implement changes in lifestyle that would postpone the onset of morbidity than it would be to develop medical technologies to postpone death. In other words, he felt that by changes of lifestyle we could compress the period between the two, but he never suggested that we would actually compress morbidity by intervening in the biology of aging. Indeed, he felt that intervening in the biology of aging was essentially impossible. What we are actually seeing is failure to implement those changes of lifestyle that Jim Fries suggested. We are seeing increase in lifespan and also increase of onset of morbidity. Not much change in the rates of those two so the interval between the two. There is not progress being made in compressing morbidity. There is a bit of variation. In some statistics we see a little bit of compression in some people; in some places we see a little bit of expansion. By in large what we are seeing is exactly what you would expect from postponing aging. In other words, you postpone the onset of morbidity and you also postpone death by about the same amount.

KYLE JENSEN: So from your perspective, what should the focus of biomedical gerontology shift towards?

AUBREY DE GREY: It should be on the equivalent of compressing morbidity, which is to say postponing morbidity so much that there is a much higher probability that people will die of causes that have nothing to do with aging just because they've got longer to do it before they become frail and decrepit, and that's the focus of my work, to try and postpone morbidity essentially indefinitely.

KYLE JENSEN: Now what's the research showing you in that, is it possible?

AUBREY DE GREY: It's looking very good. The general concept is the application of regenerative medicine to the problem of aging, and regenerative medicine is moving forward in many, many areas very rapidly, in stem cell research, in gene therapy, also of course in tissue engineering among other places. The real issue is putting those things all together in a sufficiently comprehensive way that we end up with a truly thorough solution to the problem of aging.

KYLE JENSEN: Now what are the stumbling blocks right now to your science of regenerative medicine?

AUBREY DE GREY: There are no enormous stumbling blocks. There are really just a large number of small stumbling blocks, so it's really just a research and an engineering problem now. We just have to beat away at the small problems that remain, and I think that we're probably less than 10 years away from a really pretty thorough proof of concept in the laboratory in mice demonstrating that the regenerative medicine approach to combating aging really works. It may be quite a lot longer before we really get that working in humans, but the sooner we start the sooner we'll finish.

KYLE JENSEN: The compression of morbidity theory has been a theory accepted by many in the research community. Are there others who agree with you that this concept should be abandoned or refocused?

AUBREY DE GREY: Oh, yes certainly. In fact, to be perfectly honest, the compression of morbidity theory as you call is not really a theory, it's more of an aspiration. People say well wouldn't it be a good thing if we could compress morbidity, but they don't really say how we would expect to be able to do it.

KYLE JENSEN: Lastly, the audience of SAGE Crossroads is made up of scientists, policy makers, and curious consumers. If there is one last statement you could make to them about the focus of compression of morbidity, what would it be?

AUBREY DE GREY: The compression of morbidity is an unduly short sighted way of describing the way that we should be going about combating aging. We need to have a longer term focus. We need to be applying regenerative medicine technologies to aging, and that way we really will reduce the amount of time that people spend at the end of their life in a frail and decrepit state.

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