

Longevity Science Interview with Daniel Perry

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 Mr. Daniel Perry. Mr. Perry is the executive director of the non-profit organization, the Alliance for Aging Research.

So to begin with, what exactly is the longevity dividend all about?

DANIEL PERRY: The longevity dividend refers to the social and economic benefits that would fall out of a successful attempt to slow, even marginally, the biological processes associated with aging in human beings which we also know underline many of the age-related diseases that we will see more of in a society with an aging population. So somewhat like the peace dividend which is often looked forward to at the closure of a long-term war where you can see a lot of resources being diverted back into society and a lot of social and economic good coming from that, we believe that we could make a seven year dent overall in the level of health, vitality, and productivity of people in later ages of life that the benefits back to American society in terms of less pressure on entitlement programs, greater opportunities for older people to be actively engaged in their communities, fewer and less severe encounters with age-related diseases ranging from cancer to heart disease to Alzheimer's- would be an enormous boon to society and a worthy goal.

KYLE JENSEN: Do you see benefits in focusing on specific diseases, or do you think resources should shift generally into aging?

DANIEL PERRY: Well, traditionally, we have funded medical research in this country disease-by-disease. The National Institutes of Health is organized around diseases such as cancer, heart disease, diabetes, infectious diseases, and so on. Medical researchers are trained to go after specific diseases. The journals are organized to showcase research on cases that are seeming to make inroads on specific diseases, but the essence of the longevity dividend is the growing awareness that most of the chronic age-related diseases, which now account for a majority of the health care costs in the United States, all have in common underlying biological changes that occur after midlife and if retarded by nutritional interventions, behavioral interventions, genetic pathways, or hormonal interventions could prevent and lower the risk factor to many if not most of the diseases of aging through a single intervention. We may be reaching the limit of the payoffs that we get from going after diabetes, vision loss, and bone and joint diseases individually as if they are all separate and don't share some common underlying biological roots. Perhaps even less but more concentrated scientific exploration into the changes that take place at the cellular, molecular, and even proteomic level that comes with aging could

produce interventions that are common to many diseases and the payoff could be almost beyond belief.

KYLE JENSEN: What do you see as the big obstacles in getting to this point? Is it science? Is it policy? Or is it a combination of both?

DANIEL PERRY: Well it's the combination of both plus the very strong belief among most people that aging is something that you can't do anything about. People will see the benefits of diet and exercise and stress reduction for specific diseases, but when it comes to aging most people say you have to pick long-lived parents. Well, we know that genetics accounts for about probably 30% in the differences in longevity, an important 30%. But the vast majority of things that come with aging lie outside of genetic reach and even those that are linked to one's inheritance, we know from experimental efforts with laboratory animals, you can follow the pathways of genetic aging and engineer laboratory mice or rats or fruit flies or round worms that look and behave and have the health characteristics of much younger animals. We've not been able to do this yet in humans, but it is a goal that should galvanize the scientific and the medical world and could have really transformative value for society.

KYLE JENSEN: How long do you think it will be until a real hold of longevity science takes place? When will the potential be realized?

DANIEL PERRY: Well, all you have to do is go into any bookstore in this country and go to the health section and you'll see lots of titles about ending aging or immortality or stopping aging in its tracks. I think there is a lot of debate over whether that's conceivable, but I think there is an emerging belief that we can slow down the processes of aging and make real achievements within a reasonable period of time, the next 10-15 years, that could buy back for people now living 5-7 years of healthy, productive life. As one gerontologist said, it ought to take 80 years to get to 60. Now that may be a bit more ambitious than what I'm talking about. I'm talking about seven years not 20 years, but there is a growing feeling among leading scientific authorities that based upon what we know works in laboratory animals, including apparently based on recent data, rhesus monkeys, a very close cousin to human beings. It could be possible that we could engineer healthier, more vital, more satisfying life for people in their 70s, 80s, and 90s in our lifetime.

KYLE JENSEN: The audience of SAGE Crossroads is made up of scientists, policy makers, and curious consumers. If there is one closing statement you would like to make that could sell this whole idea of the longevity dividend to them, what would it be?

DANIEL PERRY: It would be that it is possible to initiate a tremendous benefit to a population that otherwise is going to experience almost chronic, epidemic debilitating and deteriorating conditions. Alzheimer's disease is perhaps the most outstanding example of the devastation that we will see on a massive scale if we don't get serious about understanding the underlying principles of aging and apply them in such ways that really do save the baby boom generation from devastations of such diseases.

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