

# OUTLIVING OUR BODIES' WARRANTY

Death was handed a rain check in the 20th century, metaphorically speaking. While the life expectancy of humanity probably averaged around 20 years during the last 130,000 years, something remarkable occurred within the last century.

**R**ather than dying young from infectious diseases like influenza, diphtheria, tuberculosis and measles, many more of us began living to older ages. On average across OECD countries, life expectancy at birth reached 79.1 years in 2007. In comparison, for example, in the United Kingdom in 1901, a baby girl could expect to live to 49 years, while boys averaged 45.

“What we have done is add 30 years on average to the life of individuals in most parts of the world. Extending life so dramatically in such a short period of time is a huge achievement, but it has come at a price,” says S. Jay Olshansky, a renowned researcher on human longevity.

Old age was once a rare phenomenon, but advances in medicine, public health and sanitation now mean increasing numbers have the privilege of experiencing it. But deferring death means more people now also experience chronic degenerative diseases associated with old age: fragile bones, muscle atrophy, increased risk of cancer and cardiovascular diseases, loss of mental function and sensory impairments – signs that the human body is reaching its biological limitations.

“We’ve redistributed death from the young to the old and in doing so swapped one set of diseases for another. Even with the benefit of hindsight, most people would consider the health consequences to be an acceptable trade-off, but we still need to consider the implications,” argues Olshansky, who is professor at the School of Public Health at the University of Illinois at Chicago.

The implications are that survival time is added to the end of life, the time when frailty and disability is at its greatest. This often results in a period of serious, prolonged illness that can be emotionally and financially devastating for the dying as well as families and friends.

AS PART OF AN ONGOING debate about the limits to human life, Olshansky cautions us to be careful what we wish for. If we achieve further life extension without health extension, he states, we will not like what we see.

“When you are around people who achieve older ages, but where either the body or mind didn’t make it through, it is a disaster. When they both make it out to older ages it is a wondrous thing, absolutely wonderful. But the way we are pursuing it could result in an increased frequency of imbalance in mind and body in those making it out to older ages.”

One of his concerns is that the current model of medical practice and research is not fit to tackle the aging challenge that confronts it. In the past century, medicine addressed infectious, communicable diseases separately, and was successful because the diseases were largely independent of each other. Now, humans are approaching old age in unprecedented numbers, but the diseases confronting us stem from a common cause – aging. Olshansky believes it makes no sense to address each disease and disability separately. Doing so risks achieving what many fear most; prolonging the period of fragility and disability. ☞

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S. JAY OLSHANSKY



Olshansky believes that by further developing recent scientific breakthroughs, we can decelerate aging in humans.



“What we currently have in the United States are institutions devoted to heart disease, institutions devoted to cancer and the like, and this is replicated around the world. The diseases are siloed and treated as distinct when clearly they are not. What we are suggesting is a new model where we attack all diseases at once.”

**IN MARCH 2006**, Olshansky and colleagues Daniel Perry (president and CEO of the Alliance for Aging Research in Washington, DC), Richard Miller (professor of pathology at the University of Michigan) and Robert Butler (president and CEO of the International Longevity Center in New York) issued a call to the medical industry and governments.

Writing in *The Scientist* magazine, the four suggested “a concerted effort to slow aging begin immediately – because it will save and extend lives, improve health and create wealth.” They argued that biogerontologists now have enough insight into the causes of aging to offer a scientific foundation for the feasibility of extending and improving life.

This line of research, the group stressed, has nothing to do with the hucksters of the anti-aging industry, but is rather based on recent scientific breakthroughs to slow biological aging. These could, if developed further, result in benefits for people living today.

What was surprising was that only five years earlier, Olshansky himself was skeptical that such breakthroughs would occur soon. Writing in *The Quest for Immortality* (Norton 2001), he acknowledged the potential of several lines of research, but believed significant results would be many years away.

“We weren’t very optimistic then, but the evidence now indicates that the aging process can be slowed in a variety of species. In fact, it has already been shown to be achievable. What we are suggesting is that a more aggressive approach to decelerating aging in humans now be taken.”

The four colleagues said that science had the potential to produce what they referred to as a “Longevity Dividend” in the form of social, economic and health benefits for individuals and entire populations. This could be achieved by investigating several distinct areas of research including the mechanisms of caloric restriction, which has been shown to slow aging, and studying the genetics of long-lived people.

“There are many avenues researchers are investigating, and I can’t say which will be successful, but I suggest one will be.” Olshansky then adds to clarify, with one eye on the wave of baby boomers now entering retirement, “What I stress is that the goal is not life extension in and of itself. It is not our intent to make people live longer, rather for them to live healthier longer, to extend the period of youthful vigor for up to another seven years.”

This approach, he suggests, would reverse the trend in prolonging old age and transform older segments of the population into a valuable resource.

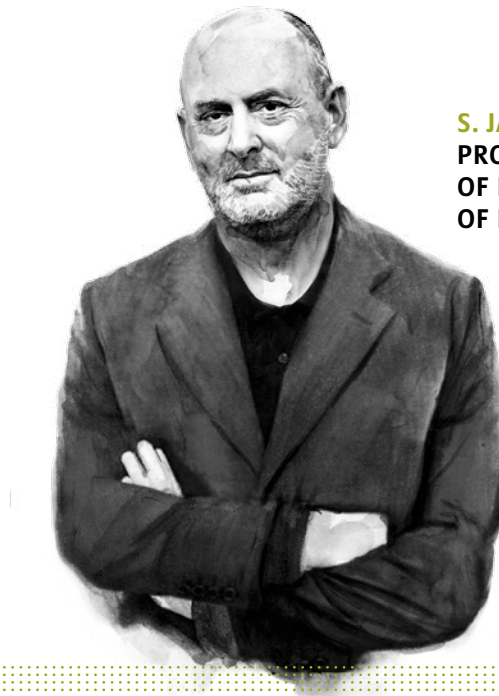
“This is an important point. Older people should not be thought of as a burden, although they are often seen that way. People who make it healthily out to old age are a huge economic and social resource. We must emphasize the extreme value of the older population and not just the cost.

“If we can consistently unlock this resource through improvements in health at older ages for a wider section of the population, we will be able to tap into this extremely valuable subgroup. That would benefit all nations.” \_\_\_\_\_

**TOP 10 CAUSES OF DEATH**

Rank	1900	2007
1	Influenza and Pneumonia	Heart disease
2	Tuberculosis	Cancer
3	Diarrhea and enteritis	Stroke
4	Heart disease	Chronic lower respiratory diseases
5	Stroke	Unintentional injuries
6	Nephritis (all forms)	Alzheimer’s disease
7	Injuries	Diabetes
8	Cancer	Influenza and pneumonia
9	Senility	Nephritis, nephrotic syndrome, and nephrosis (kidney disease)
10	Diphtheria	Septicemia

Sources: US Department of Health and Human Services, Centers for Disease Control and Prevention



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**IF**

**THEN**

**IF** death is part of life, why do we fear it?

**THEN** I believe it is because it is unknown and final. That's the fear that has plagued humanity forever and is the foundation of all major religions: what comes next – if anything?

**IF** *The Quest for Immortality* was written in 2001, has any evidence since emerged that the magic elixirs, potions and supplements offered by the anti-aging industry work?

**THEN** no! And I say that emphatically. It is sad this industry has arisen, but not surprising. People have sold the concept of the fountain of youth for thousands of years, but there is one goal only – to separate you from your money.

**IF** death is the price we pay for sex, as you wrote, should I abstain if I want to live longer?

**THEN** you misread the argument. It is not whether you as an individual have sex, or even have children, but what biology dictates. By the way, sex has been demonstrated to be very healthy so you should have more, not less!

**IF** there are so many anti-aging gurus around, why do none live to a Biblical age?

**THEN** that's a good question. Alan Mintz died at 69. Linus Pauling died of cancer at 93. Jerome Rodale believed he would live to 100, but dropped dead on television at 72. Daniel Rudman, the first scientist to test growth hormone, died at 67 from a pulmonary embolism. You would think anti-aging doctors would, on average, live longer and healthier than the rest of us if they truly had something to offer – they don't.

**IF** I want to live longer, what should I do?

**THEN** choose long-lived parents, avoid behaviors that shorten life (smoking, drugs, obesity, etc.), and follow my recipe: daily exercise, plenty of fruit and vegetables, low-fat protein, a restful night's sleep, sex at least once a day and a regular indulgence in your favorite vice.