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Is research on delayed aging a better investment than cancer and heart disease?

By Nathan Gray+, 03-Dec-2013

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Greater investment in research to delay aging may be a 'highly efficient' way to prevent disease, extend healthy life, and improve public health, according to new research.

The study, published in *Health Affairs*, notes that recent scientific advances suggest that slowing the aging process is a 'realistic goal' that could benefit everybody, yet most medical research remains focused on combating individual diseases.

Led by Dana Goldman from the University of Southern California (USC), the study shows that research to delay aging and the infirmities of old age would have better population health and economic returns than advances in individual fatal diseases like cancer or heart disease.

For example, even modest success in better understanding of how to slow the aging process could mean an additional 5% of adults over the age of 65 would be healthy rather than disabled every year from 2030 to 2060, the team said.

"In the last half-century, major life expectancy gains were driven by finding ways to reduce mortality from fatal diseases," Goldman said. "But now disabled life expectancy is rising faster than total life expectancy, leaving the number of years that one can expect to live in good health unchanged or diminished."

"If we can age more slowly, we can delay the onset and progression of many disabling diseases simultaneously."

The joint analysis, which comes from researchers at USC, Harvard, Columbia, the University of Illinois at Chicago and other institutions, assumes research investment leading to a 1.25% reduction in the likelihood of age-related diseases.

In contrast to treatments for fatal diseases, slowing aging would have no health returns initially, but would have significant benefits over the long term, they found.

'Declining returns' in battling disease

The study also shows significantly lower and declining returns for continuing the current research 'disease model', which seeks to treat fatal diseases independently, rather than tackling the shared, underlying cause of frailty and disability - such as the aging process itself.

Indeed, lowering the incidence of cancer by 25% in the next few decades - in line with the most favourable historical trends - would barely improve population health over not doing anything at all, the analysis showed.

Further analysis showed the same is true of heart disease, the leading cause of death worldwide. The study shows that, with major advances in cancer treatment or heart disease, a 51-year-old can expect to live about one more year. A modest improvement in delaying aging would double this to two additional years - and those years are much more likely to be spent in good health.

The increase in healthy years of life would also have an economic benefit of approximately \$7.1 trillion over the next five decades, they added.

"Even a marginal success in slowing aging is going to have a huge impact on health and quality of life," said corresponding author S. Jay Olshansky of the School of Public Health at the University of Illinois-Chicago. *"This is a fundamentally new approach to public health that would attack the underlying risk factors for all fatal and disabling diseases."*

"We need to begin the research now," he said. *"We don't know which mechanisms are going to work to actually delay aging, and there are probably a variety of ways this could be accomplished, but we need to decide now that this is worth pursuing."*

Delayed aging

Several previous studies have already shown how we might age more slowly, they team noted. These have included studies of the genetics of "centenarians" and other long-lived people.

Attempts to slow the signs of biological aging have also been achieved in animal models, using pharmaceuticals and also dietary interventions such as caloric restriction or supplementation. But until now, no assessment has

been made of the costs and health returns on developing therapies for delayed aging, said the research team.

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