



## Happy 150th birthday? New era looms for aging

### High-tech medicine expected to increase life expectancy, experts predict

By Ben Hirschler

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**OXFORD** - Modern medicine is redefining old age and may soon allow people to live regularly beyond the current upper limit of 120 years, experts said on Wednesday.

It used to be thought there was some inbuilt limit on lifespan, but a group of scientists meeting at Oxford University for a conference on life extension and enhancement consigned that idea to the dustbin.

**Paul Hodge**, director of the Harvard Generations Policy Program, said governments around the world -- struggling with pension crises, graying workforces and rising healthcare costs -- had to face up to the challenge now.

"Life expectancy is going to grow significantly, and current policies are going to be proven totally inadequate," he predicted.

Just how far and fast life expectancy will increase is open to debate, but the direction and the accelerating trend is clear.

Richard Miller of the Michigan University Medical School said tests on mice and rats -- genetically very similar to humans -- showed lifespan could be extended by 40 percent, simply by limiting calorie consumption.

Translated into humans, that would mean average life expectancy in rich countries rising from near 80 to 112 years, with many individuals living a lot longer.

Aubrey de Grey, a biomedical gerontologist from Cambridge University, goes much further. He believes the first person to live to 1,000 has already been born and told the meeting that periodic repairs to the body using stem cells, gene therapy and other techniques could eventually stop the aging process entirely.

De Grey argues that if each repair lasts 30 or 40 years, science will advance enough by the next "service" date that death can be put off indefinitely -- a process he calls strategies for engineered negligible senescence.

His maverick ideas are dismissed by others in the field, such as Tom Kirkwood, director of Newcastle University's Center of Aging and Nutrition, as little more than a thought experiment.

Kirkwood said the human aging process was intrinsically malleable -- meaning life expectancy was not set in stone -- but researchers had only scratched the surface in understanding how it worked.

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The real goal is not simply longer life but longer healthy life, something that is starting to happen as today's over-70s lead far more active lives than previous generations.

Jay Olshansky of the University of Illinois in Chicago is confident that longevity and health will go hand in hand and that delaying aging will translate into later onset for diseases like cancer, Alzheimer's and heart disease.

But to get to the bottom of understanding the biology of aging will require a major step-up in investment.

Olshansky and his colleagues have called on the U.S. government to inject \$3 billion a year into the field, arguing the benefits of achieving an average seven-year delay in the process of biological aging would far exceed the gains from eliminating cancer.

Ethically, the extension of life is controversial, with some philosophers arguing it goes against fundamental human nature.

But John Harris, Professor of Bioethics at the University of Manchester, said any society that applauded the saving of life had a duty to embrace regenerative medicine.

"Life saving is just death postponing with a positive spin," he said. "If it is right and good to postpone death for a short time, it is hard to see now it would be less right and less good to postpone it for a long while."

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