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Nobel Laureate Professor Elizabeth Blackburn to deliver Perth lecture on factors in rapid ageing of human cells, causing disease.

Australian-born Nobel Laureate Professor Elizabeth Blackburn will explore how stress, poverty, diet and lifestyle as well as genes contribute to rapid ageing of the body's cells in an address at The University of Western Australia tonight.

Professor Blackburn, who won the Nobel Prize for Physiology or Medicine in 2009, is delivering the Lions Eye Institute's 16th annual Ian Constable Lecture.

She is famous for discovering the molecular nature of telomeres – protective DNA - protein complexes that help stabilise the body's genetic information.

Telomeres have been compared to the plastic tips on the end of shoelaces – preventing the chromosomes from falling apart.

However, telomeres shorten every time the cell divides and if they become too short, the cell can no longer divide – leading to cellular ageing and disease.

"Telomere length can be combined with other information to indicate a person's biological age better than chronological age," Professor Blackburn said.

"Smoking and obesity have both been implicated in the shortening of telomere length and there is a growing body of evidence that the stress of living under deprived conditions can cause telomere shortening and the early onset of disease."

Professor Blackburn will explore how people can protect telomere health in tonight's lecture - *Implications of Telomere Maintenance in Aging-Related Processes and Diseases.*

"There are ways to protect telomeres through diet, exercise, weight and stress reduction," she said.

She is also fascinated with the physical and mental effects of stress and the roles stress-reduction techniques could play in potentially improving telomeres, and the health implications for this.

Research by Professor Blackburn and her team at the University of California, San Francisco, has linked short telomeres to heart disease, diabetes, cancer, chronic stress and post-traumatic stress disorder.

Lions Eye Institute Managing Director Professor David Mackey said it was an honour to have Professor Blackburn presenting this year's Ian Constable Lecture.

"It is wonderful to have such a successful Australian researcher as a role model for our scientists delivering this year's lecture," he said.

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Biographical information: Elizabeth Blackburn was born in Hobart, Tasmania, in 1948. She graduated from the University of Melbourne before completing a PhD in molecular biology at Cambridge University. She continued her research at Yale University before teaching at the University of California. Currently, she is the Morris Herzstein Professor in Biology and Physiology at the University of California, San Francisco. She has received numerous honours and was named one of Time Magazine's 100 Most Influential People in 2007 and won the Nobel Prize for in Physiology or Medicine with co-researchers Carol Greider and Jack Szostak in 2009.

About the annual Ian Constable Lecture: The first Ian Constable Lecture was held in 2000 in recognition of Professor Constable's standing as one of the world's leading ophthalmic surgeons and founder of the Lions Eye Institute.