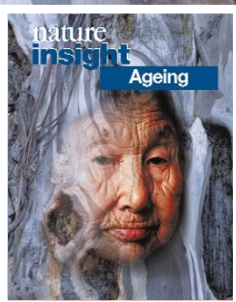


# nature insight

## Ageing

### Cover illustrations

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**E**volutionary history has determined that individuals thrive for long enough to produce and nurture their offspring. Thereafter, the ageing process involves a slow decline in physiological vigour and an increasing susceptibility to age-related disease. Much of human culture and thinking has been shaped by the inevitability of our ageing and death.

The current scientific picture of ageing presents us with an intriguing jigsaw puzzle. We know, for example, that reducing food intake can slow the ageing process, at least in lower animals such as nematode worms. We know that telomeres, which protect the ends of chromosomes, erode as our cells age. But how can we connect together these and other discoveries to give a meaningful picture of the genetic and biochemical processes that underlie ageing? With this goal in mind we have assembled a collection of review articles which rehearse our current understanding of the ageing process from several distinct vantage points.

Why do humans age, when fairly similar creatures (such as turtles) apparently do not? Kirkwood and Austad begin on page 233 by introducing the conundrum of ageing from an evolutionary standpoint. Finkel and Holbrook then review the role that oxidative damage plays in the ageing process, on page 239. Cancer is one of the most prevalent age-linked diseases in our society, and on page 248 DePinho discusses the ways in which age-related cancer may develop. Human ageing is a slow process, and for this reason researchers have often made productive use of organisms such as fruitflies, which have short life spans and can be manipulated in large numbers. Guarente and Kenyon review recent research on ageing in model organisms on page 255. Martin and Oshima, on page 263, then summarize our understanding of human 'progeroid' syndromes, in which elements of the normal ageing programme are accelerated owing to genetic abnormalities. In a concluding commentary article on page 267, Hayflick ponders the future prospects for research on ageing, and what implications the fruits of this research may have for our society.

Although some readers may feel that they are already more familiar with the ageing process than they might wish to be, we hope that this collection of reviews will nonetheless prove stimulating and informative.

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