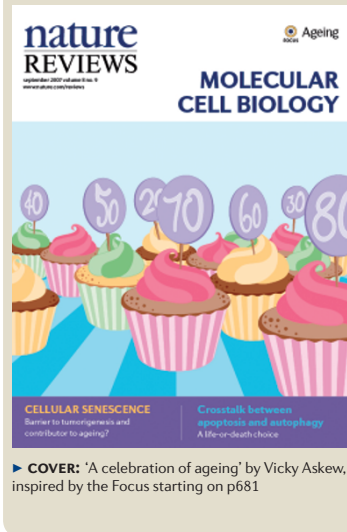




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► **COVER:** 'A celebration of ageing' by Vicky Askew, inspired by the Focus starting on p681



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This month's Focus issue on ageing reflects some of the most topical aspects of this fast-moving and fascinating field. Less than 15 years ago, mutations in genes that are involved in endocrine pathways were shown to increase the lifespans of worms and flies. This cell non-autonomous regulation of lifespan, as discussed by Steven J. Russell and C. Ronald Kahn (page 681), suggests that altered signalling in cells or in a single tissue can coordinate organismal ageing. Norman E. Sharpless and Ronald A. DePinho (page 703) focus mostly on the cell-autonomous mechanisms that function in the replicative decline of self-renewing stem cells, which is thought to contribute to organismal ageing. Philipp Oberdoerffer and David A. Sinclair (page 692) discuss the causes and consequences of changes in nuclear architecture with age. They propose that DNA-damage responses induce cumulative changes in chromatin and nuclear architecture that cause ageing. Manuel Serrano and Maria A. Blasco (page 715) discuss 'convergent' mechanisms (which protect against cancer and ageing) and 'divergent' mechanisms (which protect against cancer but favour ageing) and postulate that the overall balance between these mechanisms ensures a healthy, cancer-free life until late adulthood. A tentative divergent mechanism is proposed by Judith Campisi and Fabrizio d'Adda di Fagagna in a non-Focus article (page 729). They describe the permanent state of cell-cycle arrest known as senescence, and the evidence that senescence protects against cancer but may contribute to ageing.

Focus articles can be found online (<http://www.nature.com/nrm/focus/ageing>) and are accompanied by a podcast that features a round-table discussion with three experts on ageing. The podcast was produced with generous support from Sirtris Pharmaceuticals.

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