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In the August 28 [Proceedings of the National Academy of Sciences](#), Michelle Hamilton and colleagues, at the [University of Texas Health Sciences Center](#), have addressed the question 'Does oxidative damage to DNA increase with age?' (*Proc Natl Acad Sci USA* 2001, **98**:10469-10474). They set out to confirm the '[oxidative stress hypothesis](#)', which postulates that aging results from the irreversible accumulation of oxidative damage. They isolated nuclear DNA (nDNA) and mitochondrial DNA (mtDNA) from multiple organs of aging mice and rats, in the presence of [sodium iodide](#) to prevent oxidative damage that may be caused by experimental procedures. They observed a significant age-related increase in 8-oxo-2-deoxyguanosine (oxo8dG) in nDNA from liver, muscle, kidney, brain and heart, and in mtDNA isolated from liver. Dietary restriction, which can retard aging in rodents, prevented oxo8dG accumulation in both nDNA and mtDNA. The accumulation appears to be due to increased sensitivity to oxidative stress, rather than reduced removal of lesions. Thus, accumulation of damaged DNA seems to be another of the inevitable consequences of growing old.

References

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