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## Dying without mitochondrial gene expression

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Dysfunction of the mitochondrial respiratory chain is involved in diabetes, heart failure, neurodegeneration and aging. In the March 27 [Proceedings of the National Academy of Sciences USA](#), Wang *et al.* described experiments to determine the effect of loss of the mitochondrial transcription factor A (*Tfam*) gene on cell death (*Proc Natl Acad Sci USA* 2001, **98**:4038-4043). [Tissue-specific knockout](#) of the murine *Tfam* gene, which regulates transcription of mitochondrial DNA, caused mitochondrial cardiomyopathy associated with increased cardiomyocyte apoptosis *in vivo*. [Germline mutation](#) of the *Tfam* gene caused embryonic lethality, and evidence for increased apoptosis in day embryos at embryonic day 9.5. These results suggest that increased apoptosis may contribute to the pathology of human disorders that result from mitochondrial DNA mutation.

## References

1. *Proceedings of the National Academy of Sciences USA*, [<http://www.pnas.org>]
2. Dilated cardiomyopathy and atrioventricular conduction blocks induced by heart-specific inactivation of mitochondrial DNA gene expression.
3. Mitochondrial transcription factor A is necessary for mtDNA maintenance and embryogenesis in mice.