PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Long-lived flies

ArticleInfo		
ArticleID	:	4046
ArticleDOI	:	10.1186/gb-spotlight-20010410-01
ArticleCitationID	:	spotlight-20010410-01
ArticleSequenceNumber	:	117
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–04–10 OnlineDate : 2001–04–10
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

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Mutations that increase the life span of *Caenorhabditis elegans* encode components of the insulin/IGF signalling pathway. In the April 6 Science, two papers describe mutations that link insulin signaling with longevity in *Drosophila melanogaster*. Clancy *et al*. report that homozygous null mutations in chico, encoding an insulin receptor substrate protein, increased the female fly life span by up to 48% (*Science* 2001, **292:**104-106). They were able to demonstrate that the effects of *chico* on longevity could be separated from effects on fertility, stress resistance or body size. Tatar *et al*. show that the *Drosophila InR* (insulin-like receptor), which is a homolog of the C. elegans daf-2 gene, also regulates adult longevity (*Science* 2001, **292:**107-110). Female flies with heteroallelic combinations of hypomorphic *InR* alleles lived up to 85% longer than controls. Tatar *et al*. provide evidence that the effects of InR are mediated by regulation of neuroendocrine function and juvenile hormone production. The conservation of insulin signalling pathways suggests that similar genes may affect longevity and aging in mammals.

References

1. Genetic pathways that regulate ageing in model organisms.

2. *Science*, [http://www.sciencemag.org]

3. Autonomous control of cell and organ size by CHICO, a Drosophila homolog of vertebrate IRS1-4.

4. A heady message for lifespan regulation.

5. Pleiotropic effects of growth hormone and insulin-like growth factor (IGF)-1 on biological aging: inferences from moderate caloric-restricted animals.