

Table S1. Statistical methods used for survival analyses

Index	Paper	Graph		Statistical Test						Lifespan Statistics						
		Survival Curve	Log Cumulative Hazard Plot or Mortality Curve	Log Rank Test	Wilcoxon Rank-Sum Test	Fisher's Exact Test	Cox's test	T-Test	Gompertz	Mann-Whitney Test	Maximum Lifespan	Mean Lifespan	Median Lifespan	Last quartile lifespan	Intercept mortality rate function	Slope mortality rate function
1	Alcedo and Kenyon, 2004	O		O							O	O				
2	Andrade et al., 2005			O							O	O	O			
3	Bauer et al., 2007	O		O							O		O			
4	Bishop and Guarente, 2007	O		O							O		O			
5	Blumer et al., 2003	O		O							O		O			
6	Budovskaya et al., 2008	O		O							O		O			
7	Civetta and Clark, 2000		O								O		O	O	O	O
8	Clancy et al., 2001	O		O							O	O	O			
9	Cohen et al., 2006	O									O		O			
10	Christina et al., 2009	O		O							O		O			
11	Curran and Ruvkun, 2007			O							O		O			
12	Doonan et al., 2008	O		O							O	O	O			
13	Evason et al., 2005	O									O	O				
14	Fabrizio et al., 2005	O									O	O				
15	Fox et al., 2004	O	O								O		O		O	
16	Gallagher et al., 2000			O							O	O	O			
17	Gerisch et al., 2001	O									O	O	O	O		
18	Gerisch et al., 2007	O		O							O	O	O	O		
19	Greer et al., 2007	O	O	O							O	O	O	O		
20	Hansen et al., 2007	O		O							O	O	O			
21	Hansen et al., 2008	O		O							O	O	O			
22	Harrison et al., 2009	O		O							O	O	O			
23	Holzenberger et al., 2003	O		O							O	O	O			
24	Honjoh et al., 2009	O		O							O					
25	Hwangbo et al., 2004	O									O			O		
26	Joeng et al., 2004	O		O							O	O	O			
27	Kapahi et al., 2004	O		O							O	O	O			
28	Lambert et al., 2004	O		O							O	O	O			
29	Li et al., 2008	O		O							O		O			
30	Libert et al., 2007	O	O	O							O	O	O			
31	Liu et al., 2005	O		O							O	O	O			
32	Mair et al., 2003	O									O			O		
33	Matheu et al., 2007	O									O	O	O			
34	Mehta et al., 2009	O		O							O		O			
35	Morley and Morimoto, 2004	O									O					
36	Olsen et al., 2006	O									O					
37	Padmanabhan et al., 2009	O									O					
38	Petrascheck et al., 2007	O		O							O	O				
39	Ren et al., 2007	O		O							O	O	O			
40	Schriner et al., 2005	O									O	O	O			
41	Shaw et al., 2007	O									O	O	O			
42	Sheridan et al., 2000			O							O					
43	Smith et al., 2008	O		O							O					
44	Steffen et al., 2008	O		O							O	O	O			
45	Syntichaki et al., 2007	O									O	O	O			
46	Tong et al., 2007	O		O							O	O	O			
47	Valenzano et al., 2006	O	O	O							O	O	O	O	O	O
48	Viswanathan et al., 2005	O		O							O	O	O			
49	Wang et al., 2005	O		O							O		O			
50	Wilson et al., 2006	O		O							O	O	O			
51	Wood et al., 2004	O	O	O							O	O	O			
52	Wu et al., 2009	O	O								O	O	O			
53	Xue et al., 2007	O		O							O					

## References

- Alcedo, J. and Kenyon, C., 2004. Regulation of *C. elegans* longevity by specific gustatory and olfactory neurons. *Neuron* 41, 45-55.
- Andrade, M.C., Gu, L. and Stoltz, J.A., 2005. Novel male trait prolongs survival in suicidal mating. *Biol Lett* 1, 276-279.
- Bauer, J.H., Chang, C., Morris, S.N., Hozier, S., Andersen, S., Waitzman, J.S. and Helfand, S.L., 2007. Expression of dominant-negative Dmp53 in the adult *fly* brain inhibits insulin signaling. *Proc Natl Acad Sci U S A* 104, 13355-13360.
- Bishop, N.A. and Guarente, L., 2007. Two neurons mediate diet-restriction-induced longevity in *C. elegans*. *Nature* 447, 545-549.
- Blumer, M., Kahn, B.B. and Kahn, C.R., 2003. Extended longevity in *mice* lacking the insulin receptor in adipose tissue. *Science* 299, 572-574.
- Budovskaya, Y.V., Wu, K., Southworth, L.K., Jiang, M., Tedesco, P., Johnson, T.E. and Kim, S.K., 2008. An elr-3/elt-6/GATA transcription circuit guides aging in *C. elegans*. *Cell* 134, 291-303.
- Civetta, A. and Clark, A.G., 2000. Correlated effects of sperm competition and post mating female mortality. *Proc Natl Acad Sci U S A* 97, 13162-13165.
- Clancy, D.J., Gems, D., Harshman, L.G., Oldham, S., Stocker, H., Hafen, E., Levers, S.J. and Partridge, L., 2001. Extension of life-span by loss of CHICO, a *Drosophila* insulin receptor substrate protein. *Science* 292, 104-106.
- Cohen, E., Bieschke, J., Percivalle, R.M., Kelly, J.W. and Dillin, A., 2006. Opposing activities protect against age-onset proteotoxicity. *Science* 313, 1604-1610.
- Cristina, D., Cary, M., Lunceford, A., Clarke, C. and Kenyon, C., 2009. A regulated response to impaired respiration slows behavioral rates and increases lifespan in *Caenorhabditis elegans*. *PLoS Genet* 5, e1000450.
- Curran, S.P. and Ruvkun, G., 2007. Lifespan regulation by evolutionarily conserved genes essential for viability. *PLoS Genet* 3, e56.
- Doonan, R., McElwee, J.J., Matthijssens, F., Walker, G.A., Houthoofd, K., Bach, P., Matscheski, A., Vanfleteren, J.A. and Gems, D., 2008. Against the oxidative damage theory of aging: superoxide dismutases protect against oxidative stress but have little or no effect on life span in *Caenorhabditis elegans*. *Genes Dev* 22, 3236-3241.
- Evason, K., Huang, C., Yambe, I., Covey, D.F. and Komfeld, K., 2005. Anticonvulsant medications extend worm life-span. *Science* 307, 258-262.
- Fabrizio, P., Gattazzo, C., Battistella, L., Wei, M., Cheng, C., McGrew, K. and Longo, V.D., 2005. Sir2 blocks extreme life-span extension. *Cell* 123, 655-667.
- Fox, C.W., Bush, M.L., Roff, D.A. and Wallin, W.G., 2004. Evolutionary genetics of lifespan and mortality rates in two populations of the seed beetle, *Callosobruchus maculatus*. *Heredity* 92, 170-181.
- Gallagher, L.M., Jenner, P., Glover, V. and Clow, A., 2000. Cu/Zn-superoxide dismutase transgenic mice: no effect on longevity, locomotor activity and 3H-mazindol and 3H-spiroperone binding over 19 months. *Neurosci Lett* 289, 221-223.
- Gerisch, B., Rottiers, V., Li, D., Motola, D.L., Cummings, C.L., Lehrach, H., Mangelsdorf, D.J. and Antebi, A., 2007. A bile acid-like steroid modulates *Caenorhabditis elegans* lifespan through nuclear receptor signaling. *Proc Natl Acad Sci U S A* 104, 5014-5019.
- Gerisch, B., Weitzel, C., Kober-Eiserman, C., Rottiers, V. and Antebi, A., 2001. A hormonal signaling pathway influencing *C. elegans* metabolism, reproductive development, and life span. *Dev Cell* 1, 841-851.
- Greer, E.L., Dowlatshahi, D., Banks, M.R., Villen, J., Hoang, K., Blanchard, D., Gygi, S.P. and Brunet, A., 2007. An AMPK-FOXO pathway mediates longevity induced by a novel method of dietary restriction in *C. elegans*. *Curr Biol* 17, 1646-1656.
- Hansen, M., Chandra, A., Mitic, L.L., Onken, B., Driscoll, M. and Kenyon, C., 2008. A role for autophagy in the extension of lifespan by dietary restriction in *C. elegans*. *PLoS Genet* 4, e22.
- Hansen, M., Taubert, S., Crawford, D., Libina, N., Lee, S.J. and Kenyon, C., 2007. Lifespan extension by conditions that inhibit translation in *Caenorhabditis elegans*. *Aging Cell* 6, 95-110.
- Harrison, D.E., Strong, R., Sharp, Z.D., Nelson, J.F., Astle, C.M., Flurkey, K., Nadon, N.L., Wilkinson, J.E., Frenkel, K., Carter, C.S., Pahor, M., Javors, M.A., Fernandez, E. and Miller, R.A., 2009. Rapamycin fed late in life extends lifespan in genetically heterogeneous mice. *Nature* 460, 392-395.

- 23 Holzenberger, M., Dupont, J., Dacos, B., Leneuve, P., Geloen, A., Even, P.C., Cervera, P. and Le Bouc, Y., 2003. IGF-1 receptor regulates lifespan and resistance to oxidative stress in *mice*. *Nature* 421, 182-187.
- 24 Honjoh, S., Yamamoto, T., Uno, M. and Nishida, E., 2009. Signalling through RHEB-1 mediates intermittent fasting-induced longevity in *C. elegans*. *Nature* 457, 726-730.
- 25 Hwangbo, D.S., Gershman, B., Tu, M.P., Palmer, M. and Tatar, M., 2004. *Drosophila* dFOXO controls lifespan and regulates insulin signalling in brain and fat body. *Nature* 429, 562-566.
- 26 Joeng, K.S., Song, E.J., Lee, K.J. and Lee, J., 2004. Long lifespan in worms with long telomeric DNA. *Nat Genet* 36, 607-611.
- 27 Kapahi, P., Zid, B.M., Harper, T., Koslover, D., Sapin, V. and Benzer, S., 2004. Regulation of lifespan in *Drosophila* by modulation of genes in the TOR signaling pathway. *Curr Biol* 14, 885-890.
- 28 Lambert, H.E., Gregory, W.M., Nelstrop, A.E. and Rustin, G.J., 2000. Long-term survival in 463 women treated with platinum analogs for advanced epithelial carcinoma of the ovary: life expectancy compared to women of an age-matched normal population. *Int J Gynecol Cancer* 14, 772-778.
- 29 Li, J., Ebata, A., Dong, Y., Rizki, G., Iwata, T. and Lee, S.S., 2008. *Caenorhabditis elegans* HCF-1 functions in longevity maintenance as a DAF-16 regulator. *PLoS Biol* 6, e233.
- 30 Libert, S., Ziwiener, J., Chu, X., Vanvoories, W., Roman, G. and Pletcher, S.D., 2007. Regulation of *Drosophila* life span by olfaction and food-derived odors. *Science* 315, 1133-1137.
- 31 Liu, X., Jiang, N., Hughes, B., Bigras, E., Shoubridge, E. and Hekimi, S., 2005. Evolutionary conservation of the clk-1-dependent mechanism of longevity: loss of mclk1 increases cellular fitness and lifespan in *mice*. *Genes Dev* 19, 2424-2434.
- 32 Mair, W., Goymer, P., Pletcher, S.D. and Partridge, L., 2003. Demography of dietary restriction and death in *Drosophila*. *Science* 301, 1731-1733.
- 33 Matheu, A., Maraver, A., Klatt, P., Flores, I., Garcia-Cao, I., Borras, C., Flores, J.M., Vina, J., Blasco, M.A. and Serrano, M., 2007. Delayed ageing through damage protection by the Arf/p53 pathway. *Nature* 448, 375-379.
- 34 Mehta, R., Steinraus, K.A., Sutphin, G.L., Ramos, F.J., Shamieh, L.S., Hub, A., Davis, C., Chandler-Brown, D. and Kaeberlein, M., 2009. Proteasomal regulation of the hypoxic response modulates ageing in *C. elegans*. *Science* 324, 1196-1198.
- 35 Morley, J.F. and Morimoto, R.I., 2004. Regulation of longevity in *Caenorhabditis elegans* by heat shock factor and molecular chaperones. *Mol Biol Cell* 15, 657-664.
- 36 Olsen, A., Vantipalli, M.C. and Lithgow, G.J., 2006. Checkpoint proteins control survival of the postmitotic cells in *Caenorhabditis elegans*. *Science* 312, 1381-1385.
- 37 Padmanabhan, S., Mukhopadhyay, A., Narasimhan, S.D., Tesz, G., Czech, M.P. and Tissenbaum, H.A., 2009. A PP2A regulatory subunit regulates *C. elegans* insulin/IGF-1 signaling by modulating AKT-1 phosphorylation. *Cell* 136, 939-951.
- 38 Petrascheck, M., Ye, X. and Buck, L.B., 2007. An antidepressant that extends lifespan in adult *Caenorhabditis elegans*. *Nature* 450, 553-556.
- 39 Ren, C., Webster, P., Finkel, S.E. and Tower, J., 2007. Increased internal and external bacterial load during *Drosophila* aging without life-span trade-off. *Cell Metab* 6, 144-152.
- 40 Schriner, S.E., Linford, N.J., Martin, G.M., Treuting, P., Ogburn, C.E., Emond, M., Coskun, P.E., Ladiges, W., Wolf, N., Van Remmen, H., Wallace, D.C. and Rabinovitch, P.S., 2005. Extension of murine life span by overexpression of catalase targeted to mitochondria. *Science* 308, 1909-1911.
- 41 Shaw, W.M., Luo, S., Landis, J., Ashraf, J. and Murphy, C.T., 2007. The *C. elegans* TGF-beta Dauer pathway regulates longevity via insulin signaling. *Curr Biol* 17, 1635-1645.
- 42 Sheridan, R.L., Remensnyder, J.P., Schnitzer, J.J., Schulz, J.T., Ryan, C.M. and Tompkins, R.G., 2000. Current expectations for survival in pediatric burns. *Arch Pediatr Adolesc Med* 154, 245-249.
- 43 Smith, E.D., Tsuchiya, M., Fox, L.A., Dang, N., Hu, D., Kerr, E.O., Johnston, E.D., Tchao, B.N., Pak, D.N., Welton, K.L., Promislow, D.E., Thomas, J.H., Kaeberlein, M. and Kennedy, B.K., 2008. Quantitative evidence for conserved longevity pathways between divergent eukaryotic species. *Genome Res* 18, 564-570.
- 44 Steffen, K.K., MacKay, V.L., Kerr, E.O., Tsuchiya, M., Hu, D., Fox, L.A., Dang, N., Johnston, E.D., Oakes, J.A., Tchao, B.N., Pak, D.N., Fields, S., Kennedy, B.K. and Kaeberlein, M., 2008. Yeast life span extension by depletion of 60S ribosomal subunits is mediated by Gcn4. *Cell* 133, 292-302.
- 45 Synthchaki, P., Troulaki, K. and Tavernarakis, N., 2007. eIF4E function in somatic cells modulates ageing in *Caenorhabditis elegans*. *Nature* 445, 922-926.
- 46 Tong, J.J., Schriner, S.E., McCleary, D., Day, B.J. and Wallace, D.C., 2007. Life extension through neurofibromatin mitochondrial regulation and antioxidant therapy for neurofibromatosis-1 in *Drosophila* melanogaster. *Nat Genet* 39, 476-485.
- 47 Valenzano, D.R., Terzibasi, E., Genade, T., Cattaneo, A., Domenici, L. and Cellerino, A., 2006. Resveratrol prolongs lifespan and retards the onset of age-related markers in a short-lived vertebrate. *Curr Biol* 16, 296-300.
- 48 Viswanathan, M., Kim, S.K., Berdichevsky, A. and Guarente, L., 2005. A role for SIR-2.1 regulation of ER stress response genes in determining *C. elegans* life span. *Dev Cell* 9, 605-615.
- 49 Wang, M.C., Bohmann, D. and Jasper, H., 2005. JNK extends life span and limits growth by antagonizing cellular and organism-wide responses to insulin signaling. *Cell* 121, 115-125.
- 50 Wilson, M.A., Shukitt-Hale, B., Kalt, W., Ingram, D.K., Joseph, J.A. and Wolfson, C.A., 2006. Blueberry polyphenols increase lifespan and thermotolerance in *Caenorhabditis elegans*. *Aging Cell* 5, 59-68.
- 51 Wood, J.G., Rogina, B., Lavu, S., Howitz, K., Helfand, S.L., Tatar, M. and Sinclair, D., 2004. Siruin activators mimic caloric restriction and delay ageing in metazoans. *Nature* 430, 686-689.
- 52 Wu, D., Cypser, J.R., Yashin, A.I. and Johnson, T.E., 2009. Multiple mild heat-shocks decrease the Gompertz component of mortality in *Caenorhabditis elegans*. *Exp Gerontol*.
- 53 Xue, H., Xian, B., Dong, D., Xia, K., Zhu, S., Zhang, Z., Hou, L., Zhang, Q., Zhang, Y. and Han, J.D., 2007. A modular network model of aging. *Mol Syst Biol* 3, 147.