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**Topics of interest:**

Molecular basis of aging, Interactions between diet, health, and longevity at the molecular level.

**Focus of My Research:**

The rate of animal aging is strongly influenced by diet. The more calories consumed, the faster it ages. Well-fed animals not only age faster, they have higher mortality from cancer, heart disease, and diabetes. And the reverse is true: the fewer calories eaten (provided malnutrition is avoided) the slower an animal ages, the lower the death rate from cancer, and the lower the rate of heart disease and diabetes. This dietary regimen of under-nutrition without malnutrition is called caloric restriction. The positive relationship between caloric restriction, health, and longevity has been found from mammals to insects to worms. CR has been viewed as less effective in older animals as and as acting incrementally to slow or prevent age-related change changes in gene expression. However, we found that mice that begin CR in late middle-age reap its benefits almost immediately. Similar results have also been reported in fruit flies.

**Publications:**

**Conserved and tissue-specific genic and physiologic responses to caloric restriction and altered IGF1 signaling in mitotic and postmitotic tissues.**

Spindler SR, Dhahbi JM.

Annu Rev Nutr. 2007;27:193-217. Review.

PMID: 17428180

**Gene expression and physiologic responses of the heart to the initiation and withdrawal of caloric restriction.**

Dhahbi JM, Tsuchiya T, Kim HJ, Mote PL, Spindler SR.

J Gerontol A Biol Sci Med Sci. 2006 Mar;61(3):218-31.

PMID: 16567370

**Identification of potential caloric restriction mimetics by microarray profiling.**

Dhahbi JM, Mote PL, Fahy GM, Spindler SR.

Physiol Genomics. 2005 Nov 17;23(3):343-50. Epub 2005 Sep 27.

PMID: 16189280

**Temporal linkage between the phenotypic and genomic responses to caloric restriction.**

Dhahbi JM, Kim HJ, Mote PL, Beaver RJ, Spindler SR.

Proc Natl Acad Sci U S A. 2004 Apr 13;101(15):5524-9. Epub 2004 Mar 25.

PMID: 15044709

**Additive regulation of hepatic gene expression by dwarfism and caloric restriction.**

Tsuchiya T, Dhahbi JM, Cui X, Mote PL, Bartke A, Spindler SR.

Physiol Genomics. 2004 May 19;17(3):307-15.

PMID: 15039484

**Hepatic gene expression profiling of streptozotocin-induced diabetes.**

Dhahbi JM, Mote PL, Cao SX, Spindler SR.

Diabetes Technol Ther. 2003;5(3):411-20.

PMID: 12828825

**Postprandial induction of chaperone gene expression is rapid in mice.**

Dhahbi JM, Cao SX, Mote PL, Rowley BC, Wingo JE, Spindler SR.

J Nutr. 2002 Jan;132(1):31-7.

PMID: 11773504

**Genomic profiling of short- and long-term caloric restriction effects in the liver of aging mice.**

Cao SX, Dhahbi JM, Mote PL, Spindler SR.

Proc Natl Acad Sci U S A. 2001 Sep 11;98(19):10630-5. Epub 2001 Sep 4.

PMID: 11535822

**Chaperone-mediated regulation of hepatic protein secretion by caloric restriction.**

Dhahbi JM, Cao SX, Tillman JB, Mote PL, Madore M, Walford RL, Spindler SR.

Biochem Biophys Res Commun. 2001 Jun 8;284(2):335-9.

PMID: 11394882

**Caloric restriction alters the feeding response of key metabolic enzyme genes.**

Dhahbi JM, Mote PL, Wingo J, Rowley BC, Cao SX, Walford RL, Spindler SR.

Mech Ageing Dev. 2001 Jul 31;122(10):1033-48.

PMID: 11389922

**Calories and aging alter gene expression for gluconeogenic, glycolytic, and nitrogen-metabolizing enzymes.**

Dhahbi JM, Mote PL, Wingo J, Tillman JB, Walford RL, Spindler SR.

Am J Physiol. 1999 Aug;277(2 Pt 1):E352-60.

PMID: 10444432

**Caloric intake alters the efficiency of catalase mRNA translation in the liver of old female mice.**

Dhahbi JM, Tillman JB, Cao S, Mote PL, Walford RL, Spindler SR.  
J Gerontol A Biol Sci Med Sci. 1998 May;53(3):B180-5.  
PMID: 9597041

**Dietary energy tissue-specifically regulates endoplasmic reticulum chaperone gene expression in the liver of mice.**

Dhahbi JM, Mote PL, Tillman JB, Walford RL, Spindler SR.  
J Nutr. 1997 Sep;127(9):1758-64.  
PMID: 9278556

**Dietary calorie restriction in mice induces carbamyl phosphate synthetase I gene transcription tissue specifically.**

Tillman JB, Dhahbi JM, Mote PL, Walford RL, Spindler SR.  
J Biol Chem. 1996 Feb 16;271(7):3500-6.  
PMID: 8631954

**Dietary energy restriction in mice negatively regulates hepatic glucose-regulated protein 78 (GRP78) expression at the posttranscriptional level.**

Tillman JB, Mote PL, Dhahbi JM, Walford RL, Spindler SR.  
J Nutr. 1996 Feb;126(2):416-23.  
PMID: 8632214