Calories, Cancer, and Aging

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Abstract:

It has been known for ~60 years that caloric restriction (CR) retards the aging process in laboratory rodents while opposing the development of diverse age-associated biological changes and diseases. Several cancers, both spontaneously occurring and experimentally induced, are strongly prevented by CR. There is emerging evidence that a similar relationship between caloric intake and cancer incidence may occur in humans. Because the overwhelming majority of cancer mortality occurs in individuals over 65 years of age (a rapidly expending segment of our populace), the NIH has funded eight sites to establish formal "Aging Programs" within NCI-designated Comprehensive Cancer Centers. Our effort at the University of Wisconsin-Madison will be described. In addition, the NIH is also concerned about the link between obesity and cancer susceptibility. Potentially germane to this point are gene expression profiling studies which we conducted on adipose tissue from mice on short-term and long-term CR.