

## Re: Caloric restriction and longevity?

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*Source:* <http://sci.tech--archive.net/Archive/sci.bio.evolution/2006-02/msg00522.html>

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- *From:* James Michael Howard <jmhoward@xxxxxxxxxxxxxxxxxxxx>
  - *Date:* Thu, 23 Feb 2006 01:16:54 -0500 (EST)
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On Wed, 22 Feb 2006 12:13:53 -0500 (EST), "g" <gillawton@xxxxxxxxxxxxxxxx> wrote:

"James Michael Howard" <jmhoward@xxxxxxxxxxxxxxxxxxxx> wrote in message [news:dtb2oa\\$176q\\$1@xxxxxxxxxxxxxxxxxxxxxxxx](news:dtb2oa$176q$1@xxxxxxxxxxxxxxxxxxxxxxxx)

On Sun, 19 Feb 2006 00:49:12 -0500 (EST), dkomo  
<dkomo871@xxxxxxxxxxxx>

(Mega excisive snippage)

From the Department of Demography,  
University of California, Berkeley, CA

(D.A.G.); and Office of Population Research, Princeton University,  
Princeton, NJ (N.G.).

**PURPOSE:** Studies based on Western populations showed a negative relationship between dehydroepiandrosterone sulfate (DHEAS) level and mortality, but no study examined this relationship in a non-Western country. We use data from a large, nationally representative sample (n = 963) of older Taiwanese to investigate whether serum DHEAS, predicts subsequent mortality during a 3-year period (2000 to 2003) and whether an effect remains after controlling for baseline health status. **METHODS:** Baseline data collection included an individual interview, physical examination, and blood sample. A logit model is used to test the relationship between DHEAS level and risk for mortality, controlling for age, sex, and smoking status. **RESULTS:** Results show a marginally significant inverse relationship between DHEAS level and 3-year mortality risk. Participants with low DHEAS levels (<54.5 mug/dL) have 64% greater odds of dying than those with higher DHEAS levels (p < 0.06). After adjusting for various indicators of health status in 2000, the odds ratio (OR) for low DHEAS level remains substantial (OR = 1.41), but not statistically significant. **CONCLUSIONS:** Although the analysis is limited by

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the short follow-up and small number of deaths, results are consistent with the notion that DHEAS level has a sizeable effect on mortality.

A correlation does not a cause and effect determination make.

What might we expect if we were to draw blood samples from 10,000 individuals at random and wait three years; then,

Discard all samples from those who had not died within those three years; then,

Discard all samples of those who had died from externally imposed trauma (accidents, murder, etc.); then,

Discard all samples of those who had died as a direct or indirect result of an invasive pathogenic etiology (such as influenza, AIDS); then,

Discard all samples of those who had died from any life-style related disorder (for example, narcotic overdose, smoking-related lung cancer, alcohol abuse-related cirrhosis; smoking-related cardio vascular morbidity; then,

Any other cause unrelated to DHEA; then, if any remained at all,

We MIGHT have a sufficiently controlled sample to work with... maybe.

And then, if a substantial number of the remainder had lower DHEA levels, we would have a correlation that might be significant... maybe.

But we would NOT have established a cause and effect relationship -- but a correlation, only.

It would take an enormous amount of work, in an enormous number of studies, of an enormous number of people, with an enormous number of controls... to arrive at much of significance.

Look how much has gone into studies of triglyceride levels and cardio-vascular studies. And in some ways the jury is still out.

g

Exp Gerontol. 2003 Jan-Feb;38(1-2):35-46.

Calorie restriction in rhesus monkeys.

Mattison JA, Lane MA, Roth GS, Ingram DK.

Intramural Research Program, Gerontology Research Center, National

Re: Caloric restriction and longevity?

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Institute on Aging, NIH, 5600 Nathan Shock Drive, Baltimore, MD 21224, USA.

Calorie restriction (CR) extends lifespan and reduces the incidence and age of onset of age-related disease in several animal models. To determine if this nutritional intervention has similar actions in a long-lived primate species, the National Institute on Aging (NIA) initiated a study in 1987 to investigate the effects of a 30% CR in male and female rhesus macaques (*Macaca mulatta*) of a broad age range. We have observed physiological effects of CR that parallel rodent studies and may be predictive of an increased lifespan. Specifically, results from the NIA study have demonstrated that CR decreases body weight and fat mass, improves glucoregulatory function, decreases blood pressure and blood lipids, and decreases body temperature. Juvenile males exhibited delayed skeletal and sexual maturation. Adult bone mass was not affected by CR in females nor were several reproductive hormones or menstrual cycling. CR attenuated the age-associated decline in both dehydroepiandrosterone (DHEA) and melatonin in males. Although 81% of the monkeys in the study are still alive, preliminary evidence suggests that CR will have beneficial effects on morbidity and mortality. We are now preparing a battery of measures to provide a thorough and relevant analysis of the effectiveness of CR at delaying the onset of age-related disease and maintaining function later into life.