

DIET AND LONGEVITY STUDY

15. Final Comments

The purpose of the experiment was to clarify the impact of dietary restriction (**under**nutrition without **mal**nutrition) on life span. Female mice from a long-lived strain were subjected to one of four different regimens of dietary restriction, or one of two more normal diets. Experimental variables tested included the protein content of the restricted diet, and preweaning restriction. The response variable was the lifetime expressed in months.

The study found that as the severity of dietary restriction increased, so did longevity. Mean life span was shortest for the mice fed the normal unrestricted diet. Mice from the group fed with the lowest caloric intake lived longest of all. Moreover, extreme longevities attained by certain of the restricted mice were reported.

It was also found that food intake limited prior to weaning did not further increase longevity for mice subjected to postweaning dietary restriction. Mice restricted in both calorie and protein intake exhibited shorter mean life span than did mice fed the same number of calories of a high protein diet.

The 349 mice (experimental units) subjected to one of the diet restriction treatments or left as a control are not members of any well-defined population. They are not even selected randomly. Although a random mechanism was used to assign them to one of the six treatments, the mechanism used to obtain the mice was not random. Therefore, any inferences to population must be based on the assumption that these 349 mice are representative of the population.

The cause-and-effect conclusions about the effect of dietary restriction on the life span of the particular mice used in the study can be drawn. The conclusions are valid only for the particular nutrient composition used in the experiment.

The findings call for examining the mechanism by which dietary restriction retards life span. It is also interesting to establish optimal nutrient composition and feeding strategies for these life span-extending diets.