

Does a High-Fat Diet Accelerate Biological Aging in Mice?

Presenter: Samuel I. Bloom

Advisors: Stephen J. Ives, PhD and T. H. Reynolds, PhD

ABSTRACT

Age and obesity are risk factors for many chronic diseases. Likewise, age and obesity disrupt normal adipose tissue function, which is linked to the inflammatory response and increased oxidative stress. Telomeres are the endcaps of eukaryotic chromosomes that maintain chromosomal stability, as well as the

s telomeres. However, to date, the shelterin regulation of telomeres in mice has not been examined. Thus, the present study examined the effect of a high-fat diet and aging on C57Bl6J (N=15) mice. The expression of genes involved in the regulation of telomeres in the inguinal and epididymal white adipose tissue was examined with age and a high-fat diet. TRF1 (TRF1) and 2 (TRF2) are involved in the regulation and protection. TRF1 mRNA levels were significantly lower in mice on a high-