

Abstract

The effect of dietary restriction and temperature on lifespan of organisms has been documented for the past 100 years. The current study presents the effect of DR and temperature on two populations of flies which have been selected for differential rates of aging for the past 20 years: the ACO's and CO's. I had a factorial combination in order to study the effects of two food regimes (DR and N) and two temperature regimes (H and L). I find that the effect of DR is not same in all populations and all sexes. Only CO males and ACO females show an extension in lifespan upon DR. The effect of temperature on the other hand was consistent across all treatments. CO's however had a more pronounced effect than ACO's. Interestingly, even though only ACO females show an extension in lifespan upon DR, both ACO and CO females have a reduction in fecundity in the DR food regime. The varied response to DR is not unknown, but we propose another theory in order to explain our data and suggest that body size might be an important factor in determining what amount of DR will result in lifespan extension in which body class organism.