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Endocrine and metabolic features of familial longevity : the Leiden Longevity Study

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General discussion and synopsis Part B

In model organisms, there are various examples of interventions which extend average and maximal lifespan, but when expressed on a semi-log scale the age specific mortality trajectories have shifted parallel when compared to the control strains. The classical interpretation of the parameters of the Gompertz model is that the senescence rate in these model organisms has not been influenced positively. In **chapter 12** we have proposed the tangent line of the Gompertz equation as an alternative method for assessment of the rate of senescence. Such an approach unmasks different rates of senescence when parameter G has remained constant. In **chapter 13** we have empirically tested this new approach in a population of renal patients, a population known to experience accelerated aging. This study showed that using the derivative function of the Gompertz curve identifies different rates of senenscence under various conditions. In contrast to the parameter G of the Gompertz curve which failed to detect these differences. To estimate the rate of senescence we therefore recommend using the derivative of the Gompertz equation.