

Abstract ID: 93167

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Area of Research: Computational and structural science

PhD Programme: PhD Metabolic and Cardiovascular Disease (DK-MCD)

Semester: 7

## **A novel platform for testing synergistic effects of anti-aging drugs**

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### **Background/Aims:**

Aging is the primary risk factor for several chronic diseases including cardiovascular and metabolic-syndrome related problems such as atherosclerosis, hypertension, type II diabetes, stroke and myocardial infarction as well as cancer and neurodegenerative diseases. Through the application of pharmacological geroprotectors, substances that slow or delay aging and repair age-associated damage, it may be possible to extend the period of our lives when we are free from severe disease and frailty. The goal is to find an optimal composition of low dose caloric restriction (CR) mimetics that reduces the prevalence of toxic side effects without compromising the conveyed extension of life expectancy.

### **Method/Results:**

We developed a novel platform that serves as a potent health span indicator since it integrates the measurement of various aspects of age-associated dysfunction through the precise determination of climbing activity, which declines with age. To explore synergistic effects of CR mimetics we use wild type fruit flies (*Drosophila melanogaster*). Through combination of different anti-aging compounds tested in wild type fruit flies we could identify different combinatorial effects: e.g., healthspan improving, boosting and even toxic effects.

### **Conclusion:**

The new semi-automated climbing platform is less time consuming and shows a better reproducibility. The climbing distance measurement is more accurate and there is an option to analyze additional parameters like climbing direction, speed, or acceleration. Most importantly, in contrast to previously used methods, we can analyze single fly performance and classify the animals into different performance categories.