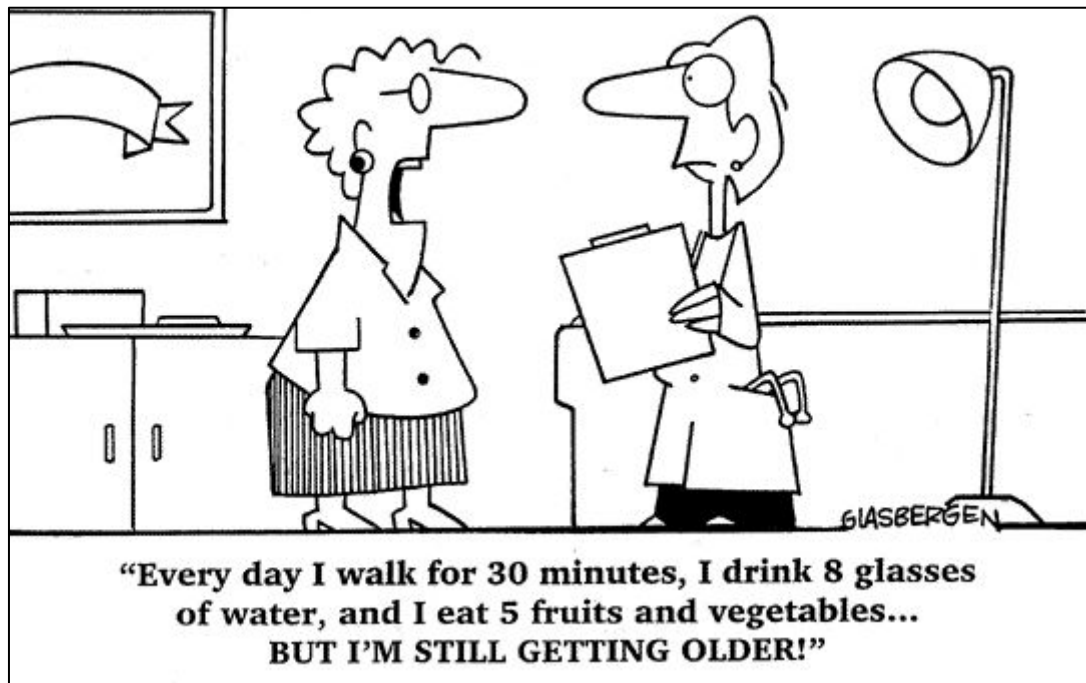


# IGF-1 and Healthy Aging



**Madeline Williams**



Randy Glasbergen

# IGF-1 receptor mutation extends lifespan in roundworms

**Daf-2 Mutations**

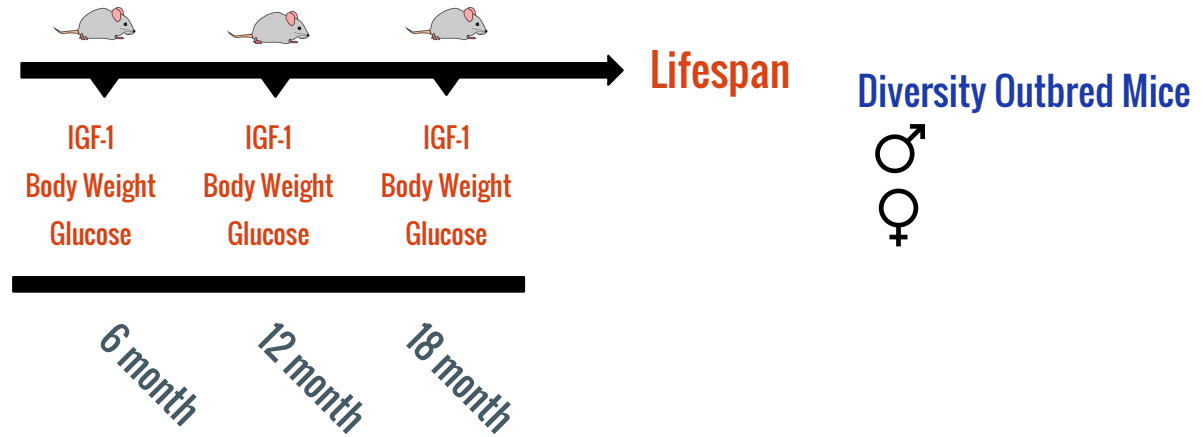


**Changes in Insulin/IGF-1  
Signalling**

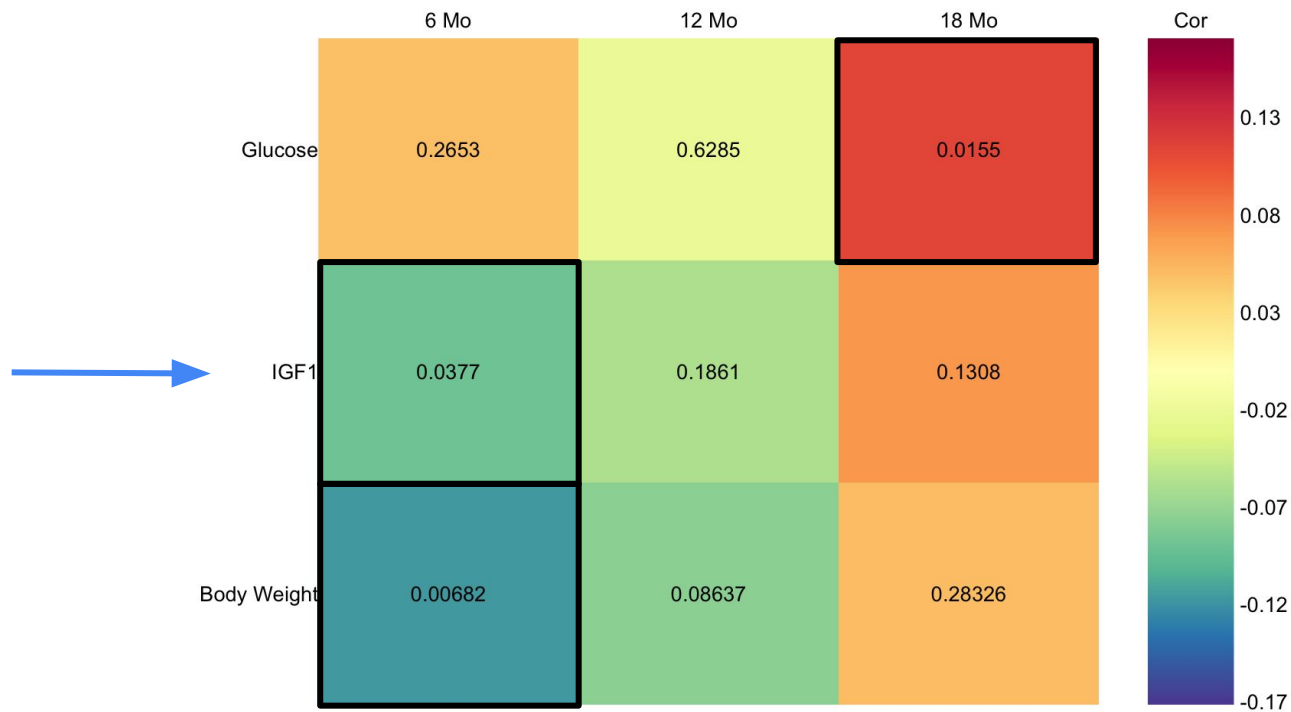
**Longer Lifespan**

**Does IGF-1 predict longevity in mice?**

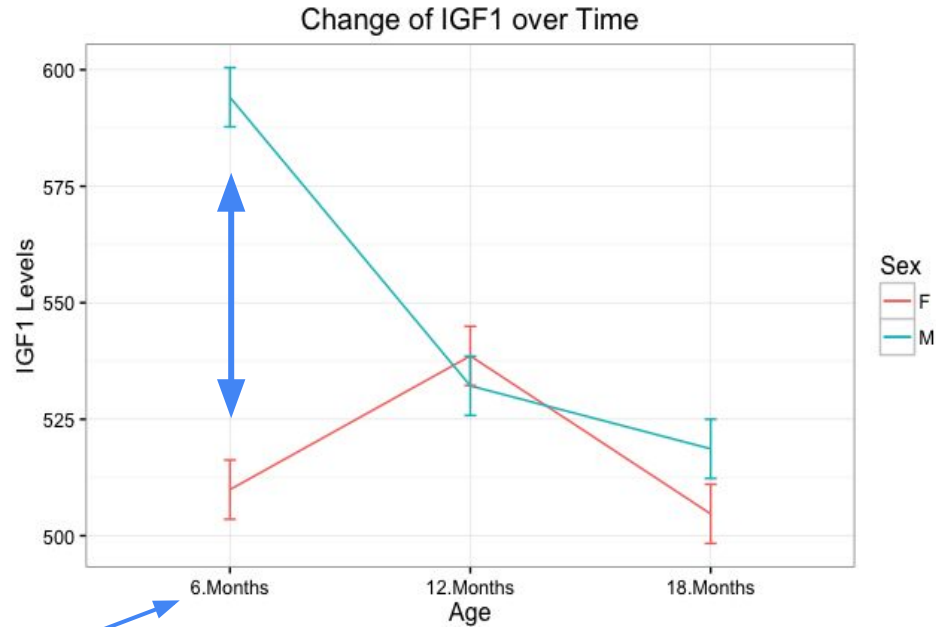
# Data



# Significant predictors of lifespan



# Differences in IGF-1 at 6 Months between the sexes

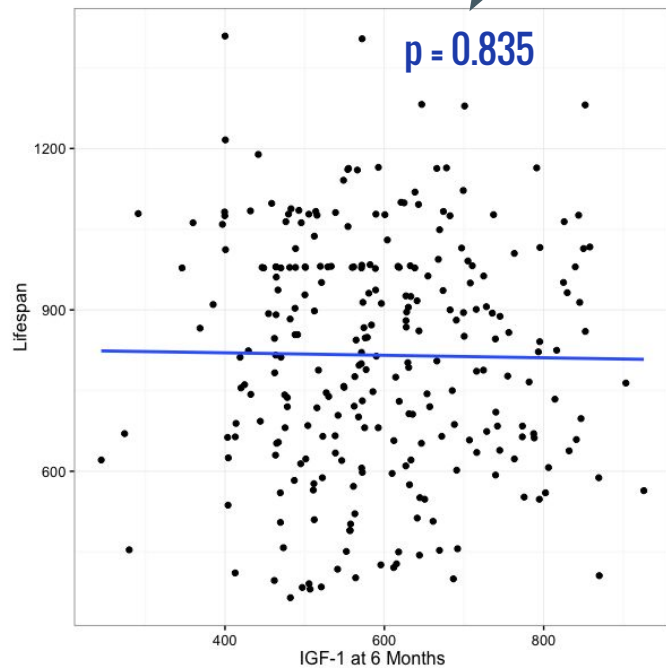


$p = 0.0377^*$

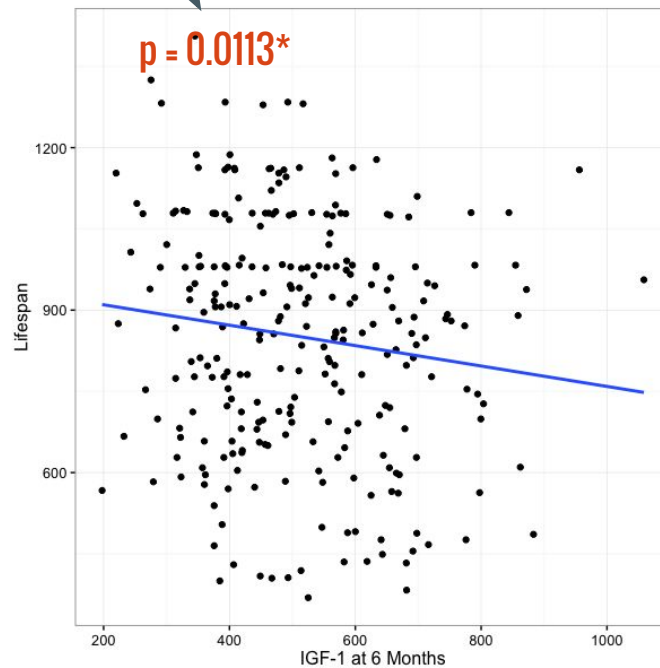
IGF-1 at 6 Months

0.0377\*

Males

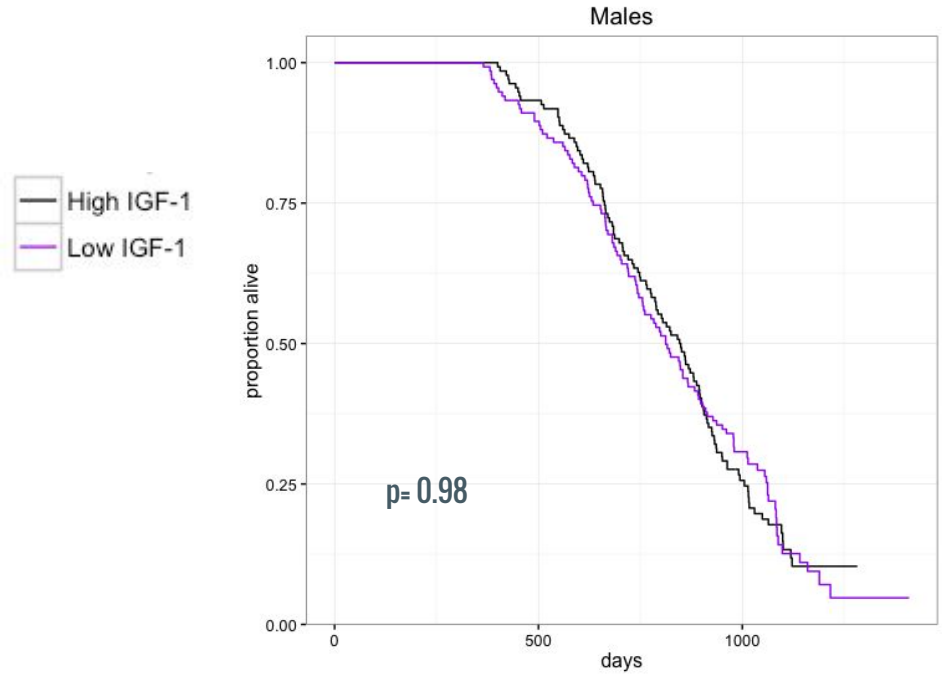
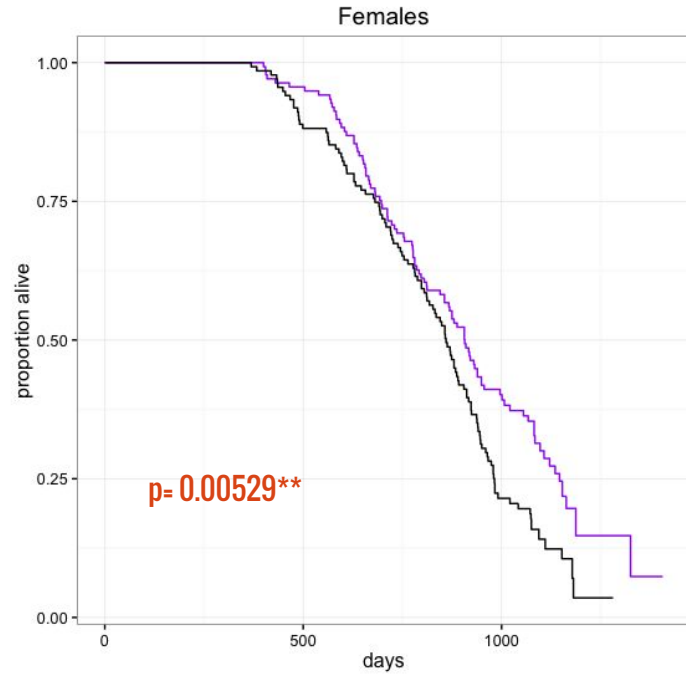


Females





# 6 month IGF-1 levels and survival



# Mitochondrial and nuclear DNA matching shapes metabolism and healthy ageing

Ana Latorre-Pellicer, Raquel Moreno-Loshuertos, Ana Victoria Lechuga-Vieco, Fátima Sánchez-Cabo, Carlos Torroja, Rebeca Acín-Pérez, Enrique Calvo, Esther Aix, Andrés González-Guerra, Angela Logan, María Luisa Bernad-Miana, Eduardo Romanos, Raquel Cruz, Sara Cogliati, Beatriz Sobrino, Ángel Carracedo, Acisclo Pérez-Martos, Patricio Fernández-

Is the answer  
hidden in the  
mtDNA?

## Genetics: Mitochondrial DNA in evolution and disease

Douglas C. Wallace

*Nature* (2016) | doi:10.1038/nature18902

Published online 06 July 2016



PDF



Citation



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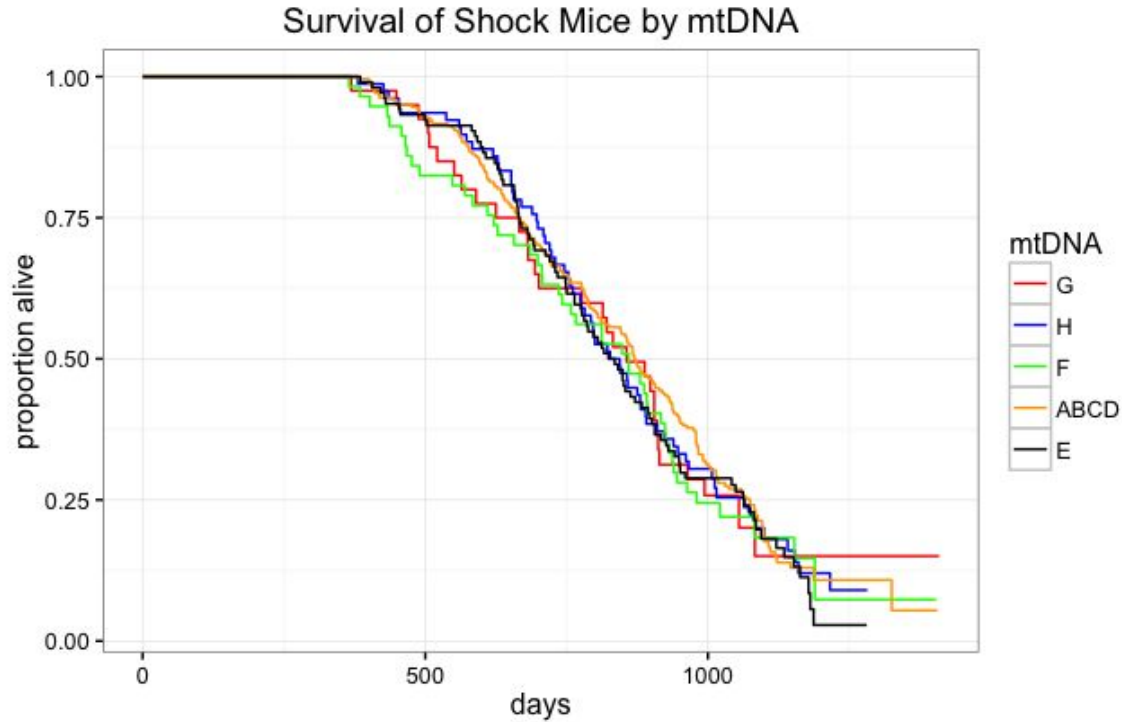
Article metrics

Cellular organelles called mitochondria contain their own DNA. The discovery that variation in mitochondrial DNA alters physiology and lifespan in mice has implications for evolutionary biology and the origins of disease.

# What does mtDNA predict?

Body Weight (6)
Body Weight (12)
Body Weight (18)
Glucose (6)
Glucose (12)
Glucose (18)
IGF-1 (6)
IGF-1 (12)
IGF-1 (18)

→  $p = 0.041116^*$

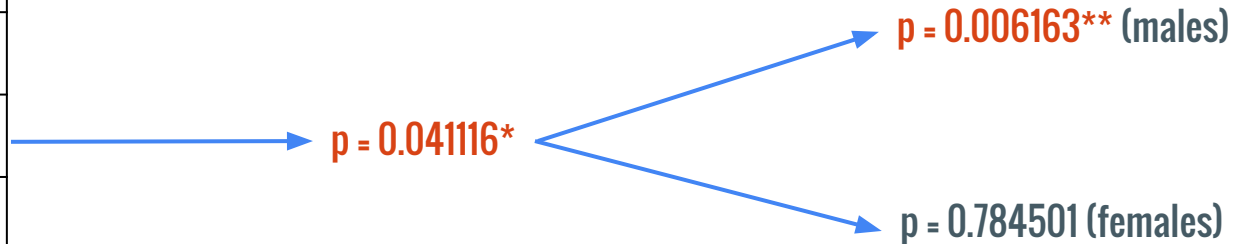


$p = 0.878$

No significant difference between the mtDNA groups' survival

# mtDNA and IGF-1 at 6 months

Body Weight (6)
Body Weight (12)
Body Weight (18)
Glucose (6)
Glucose (12)
Glucose (18)
IGF-1 (6)
IGF-1 (12)
IGF-1 (18)



**Males:**



**Females:**



# What does this mean?

- **IGF-1 at 6 Months**
  - Sex-specific relationships
    - mtDNA
    - Lifespan

# Acknowledgements

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**Elliot Krause**

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**Residential Staff**

**Students**

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