

A

Classic framework

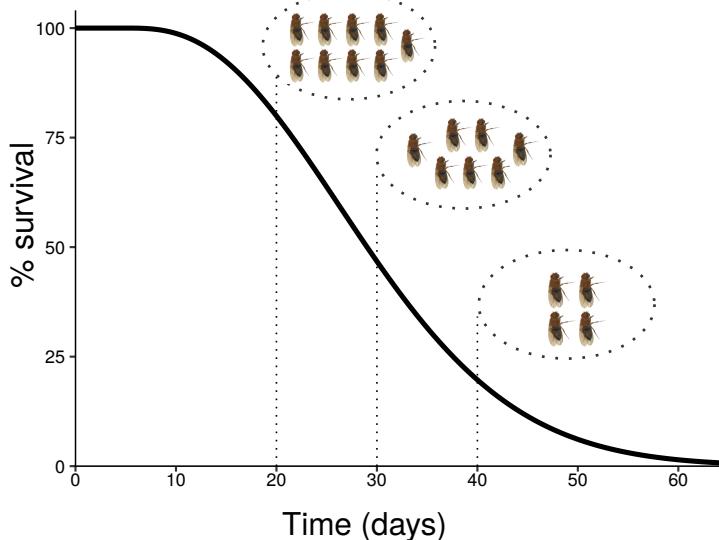


time

Death

B

Chronological age



2-phase ageing framework



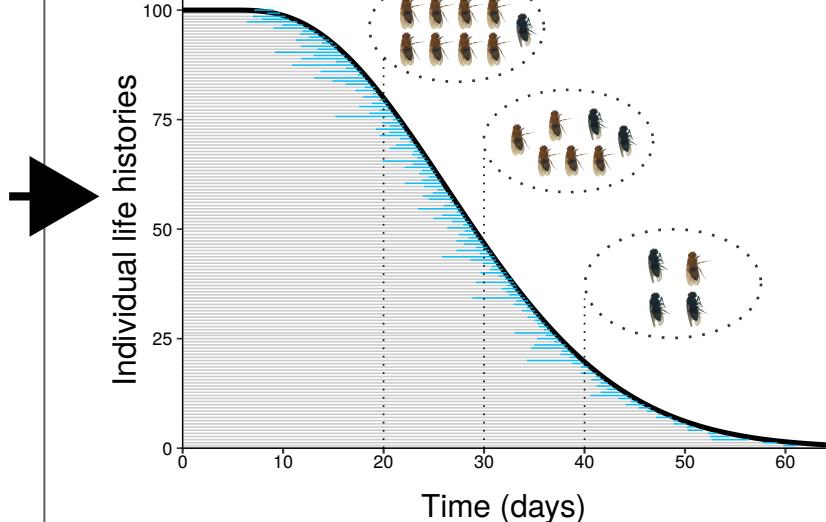
phase 1



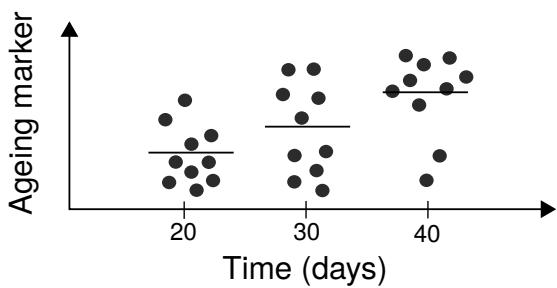
phase 2

Death

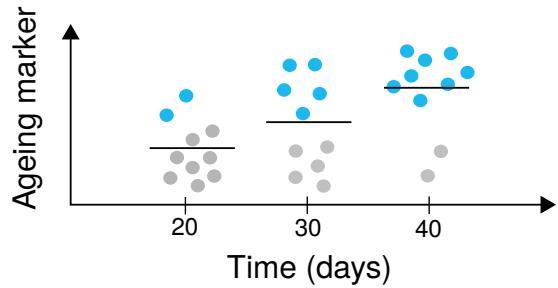
Biological age

**C**

Population based



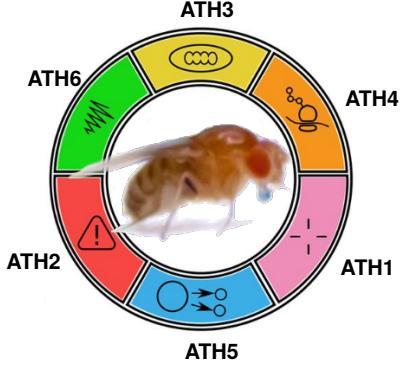
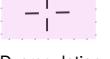
Individual centered

**D**

Ageing transcriptional hallmarks - ATH

adapted from (Frenk & Houseley, 2018)

Classical description

**ATH1**

Dysregulation immuno genes

ATH2

Stress (and DNA damage?)

ATH3

Downregulation mitochondrial proteins

ATH4

Downregulation ribosomes

ATH5

Reduction growth factor

Smurf-based deconvolution

