

Sleep loss, gut, and oxidative stress

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Disclaimer and Disclosures

Disclaimer

This certifies that the views expressed in this presentation are those of the author and do not reflect the official policy of the NIH.

Disclosure

This certifies that I, Dragana Rogulja, have no financial relationship that is relevant to the subject matter of this presentation.

Thanks to

Alex Vaccaro



Yossi Kaplan Dor



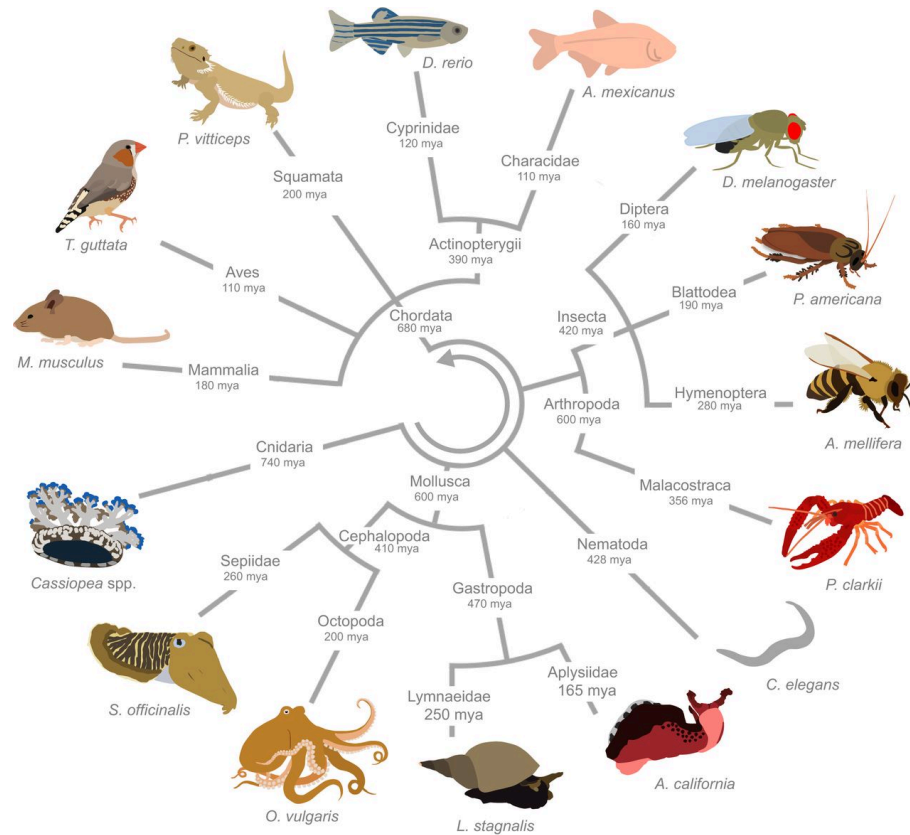
Question:

What is the cause of death in sleep-deprived animals?

Idea:

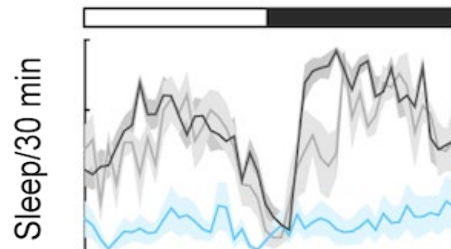
Look all over the body (could there be one cause?)

Sleep is ubiquitous

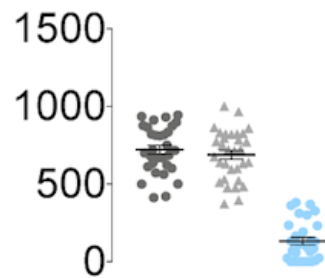


Keene & Duboue, J Exp Biol 2018

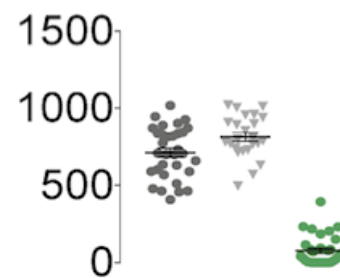
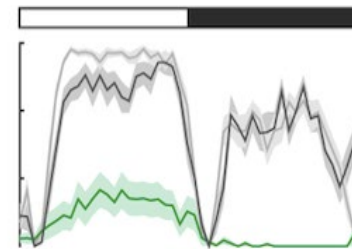
Activation of neuronal population 1



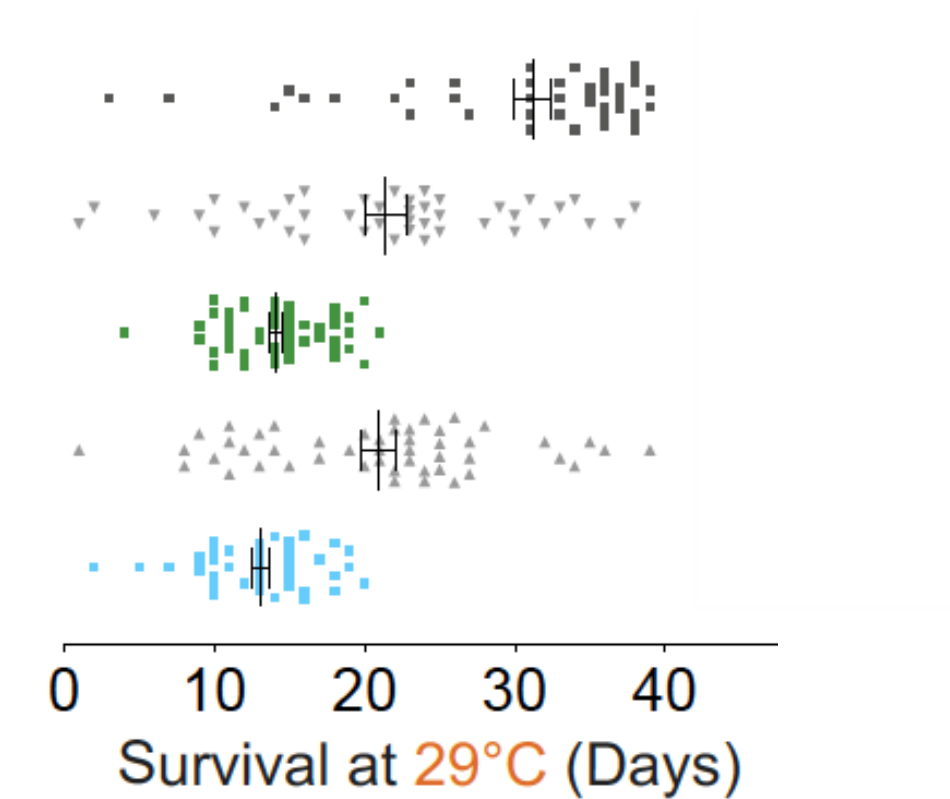
Total daily sleep
at 29°C (min)



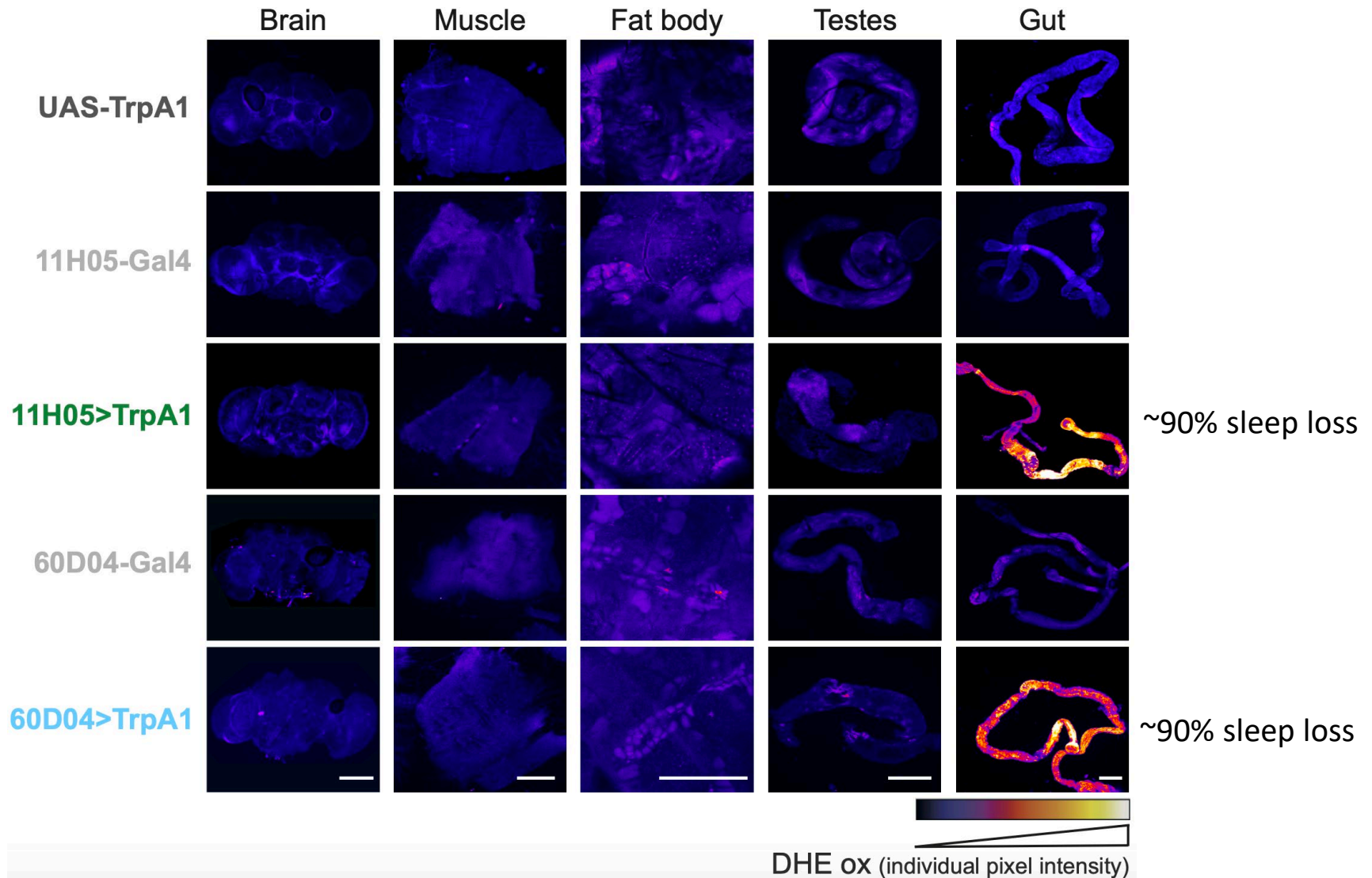
Activation of neuronal population 2



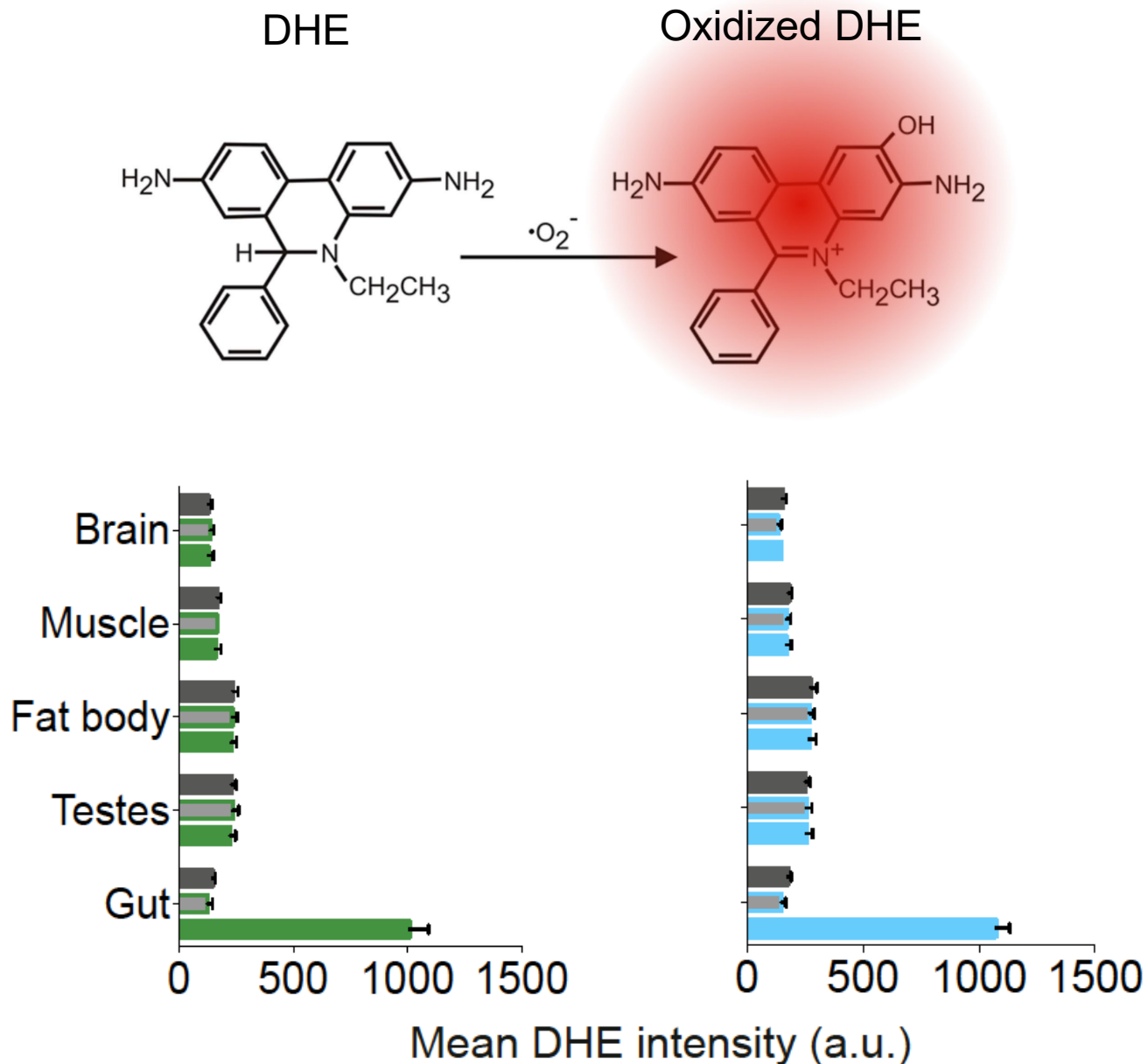
Sleep deprivation shortens lifespan



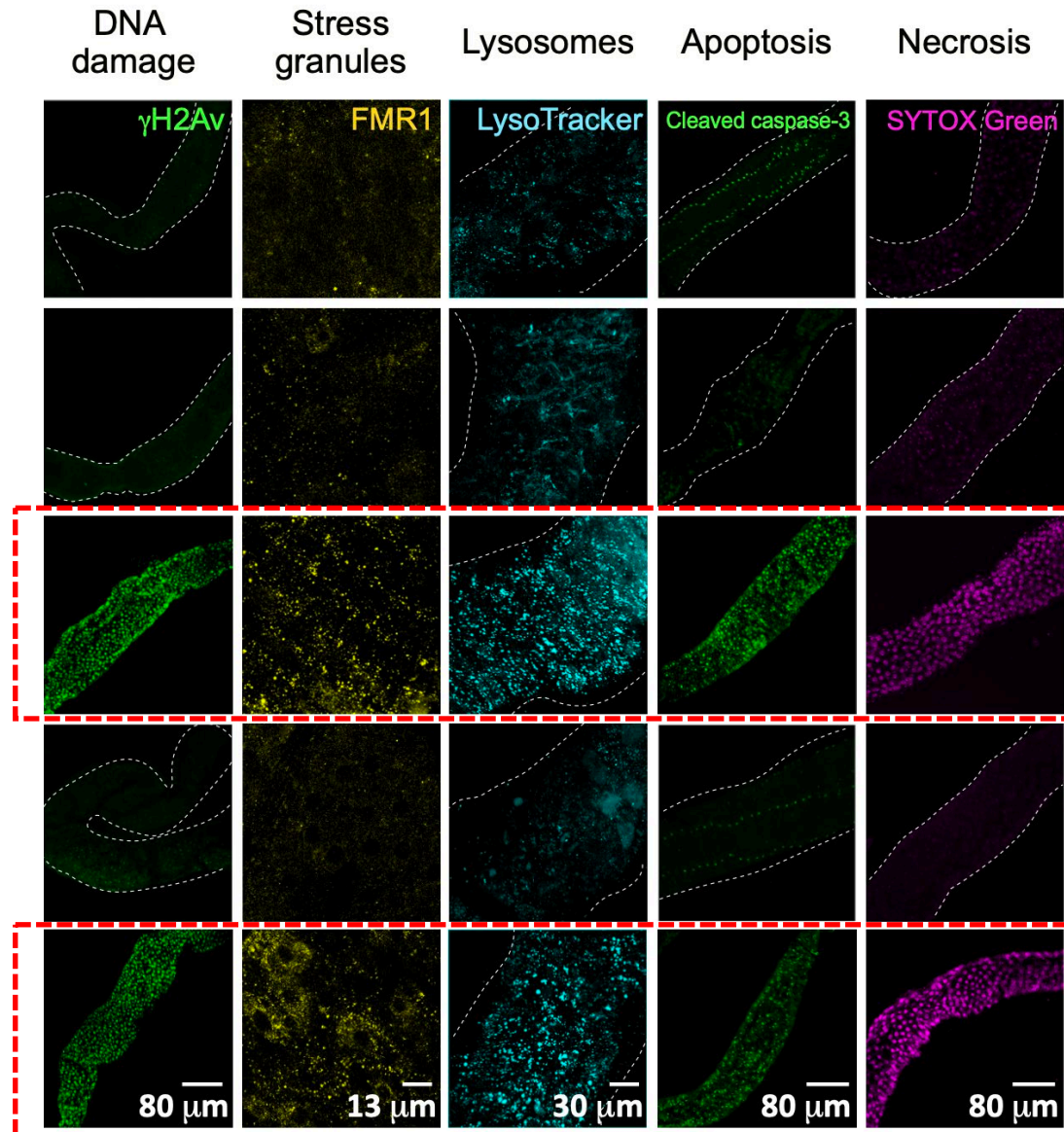
Reactive oxygen species (ROS) accumulate in the gut upon sleep deprivation



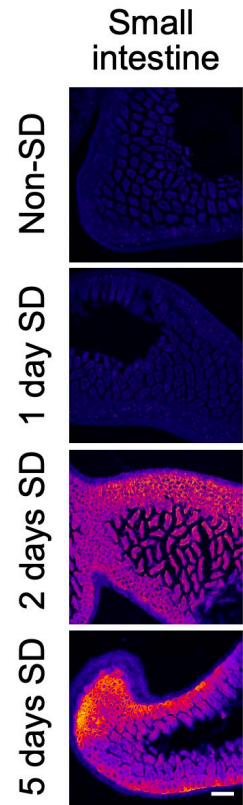
ROS accumulate in the gut upon sleep deprivation



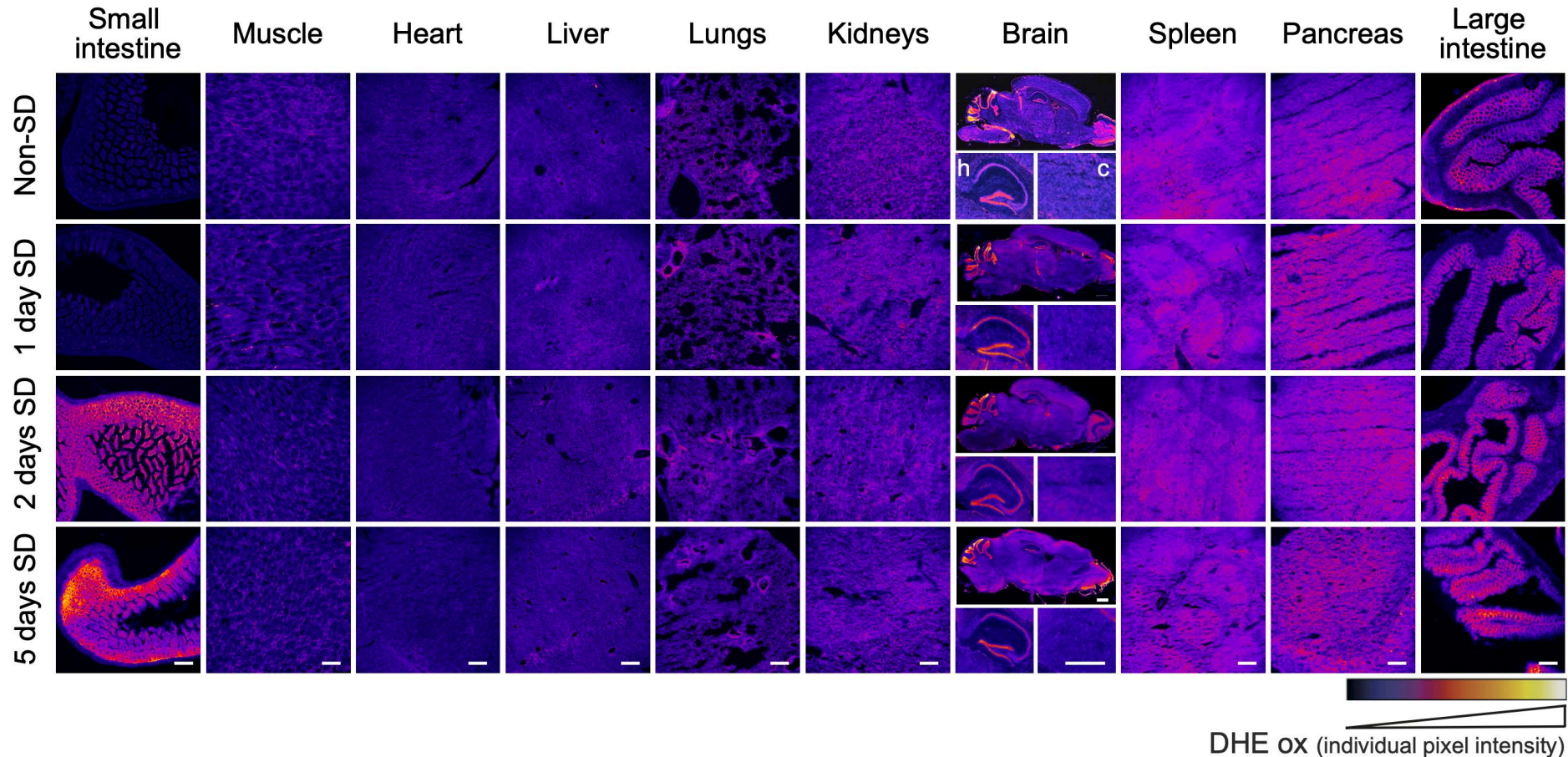
Sleep deprivation induces oxidative cell damage in the gut



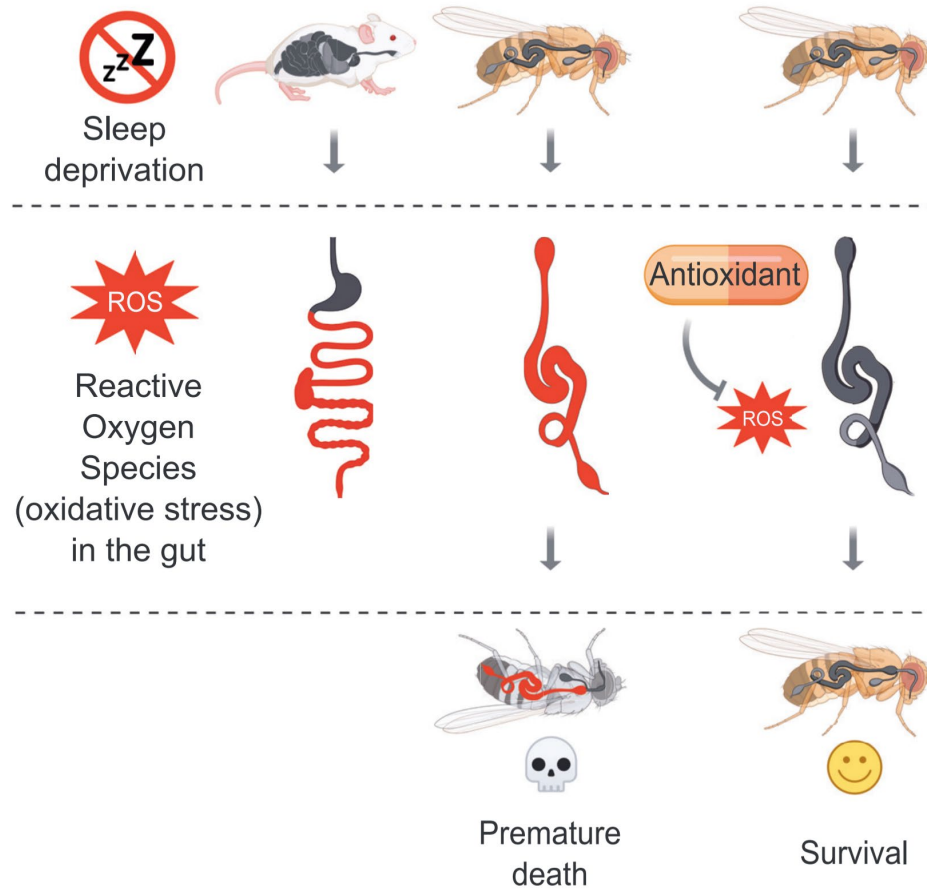
Sleep deprivation in mice leads to increased ROS in the gut



Sleep deprivation in mice leads to increased ROS in the gut



With the Greenberg lab: Liz Polina, Cindy Lin



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