

Supplement materials

DO-SRS Imaging of Metabolic Dynamics in Aging *Drosophila*

Yajuan Li, Wenxu Zhang, Anthony A. Fung, Lingyan Shi*

Department of Bioengineering, University of California San Diego

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Corresponding to: Lingyanshi@ucsd.edu

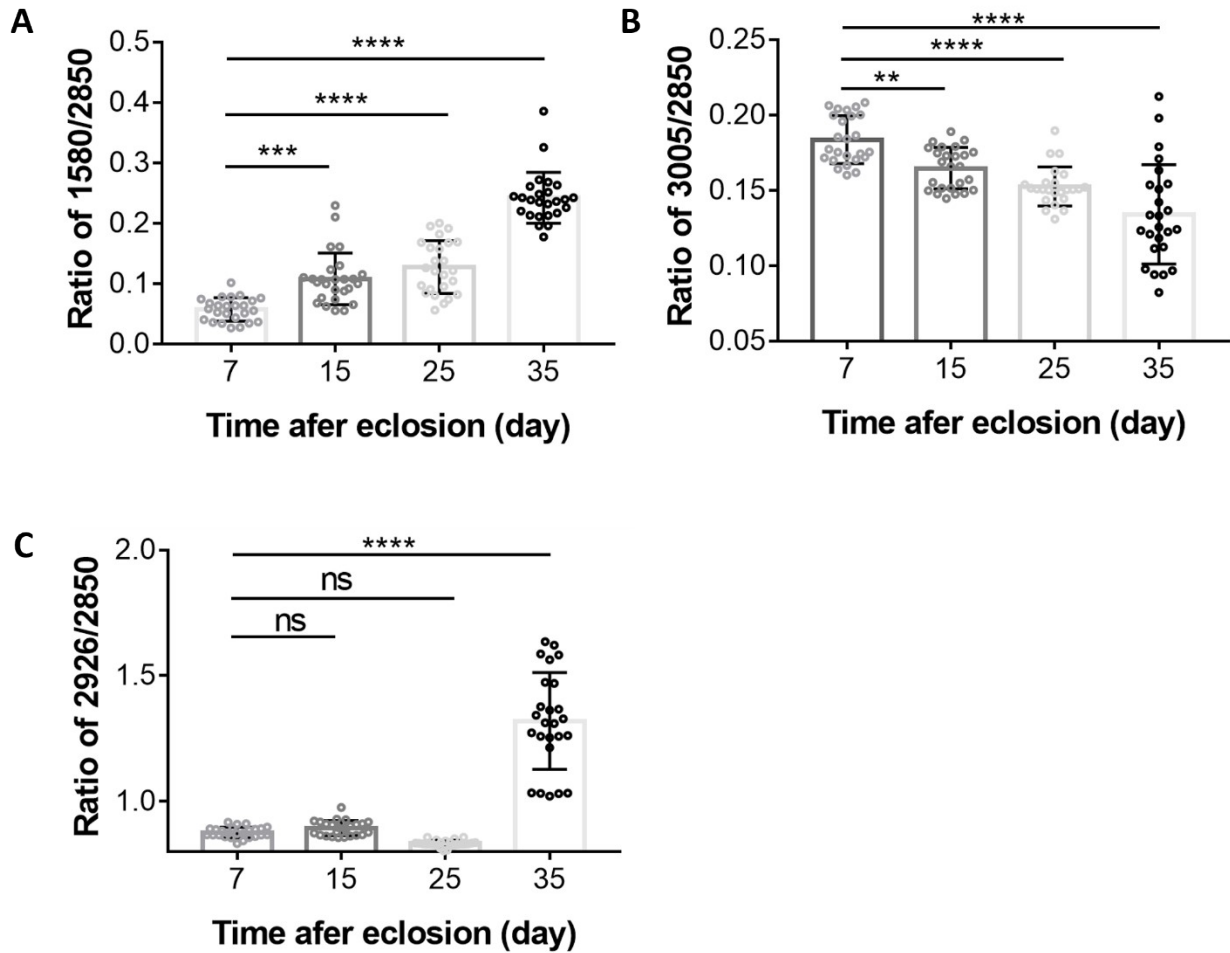


Fig. S1. (A), (B) and (C) The Raman peak ratios from 2926/2850, 3005/2850 and 1580/2850 were quantified from the spectra measured from fat body tissues of 7, 15, 25 and 35 day flies respectively and plotted as Mean \pm s.d., $n=25$, from 3 or 5 different individuals for each group. The quantification results were shown as (mean \pm s.d). **** indicates $p < 0.0001$, *** indicates $p < 0.001$, ** indicates $p < 0.01$ and ns indicates nonsignificant difference in an unpaired t test.

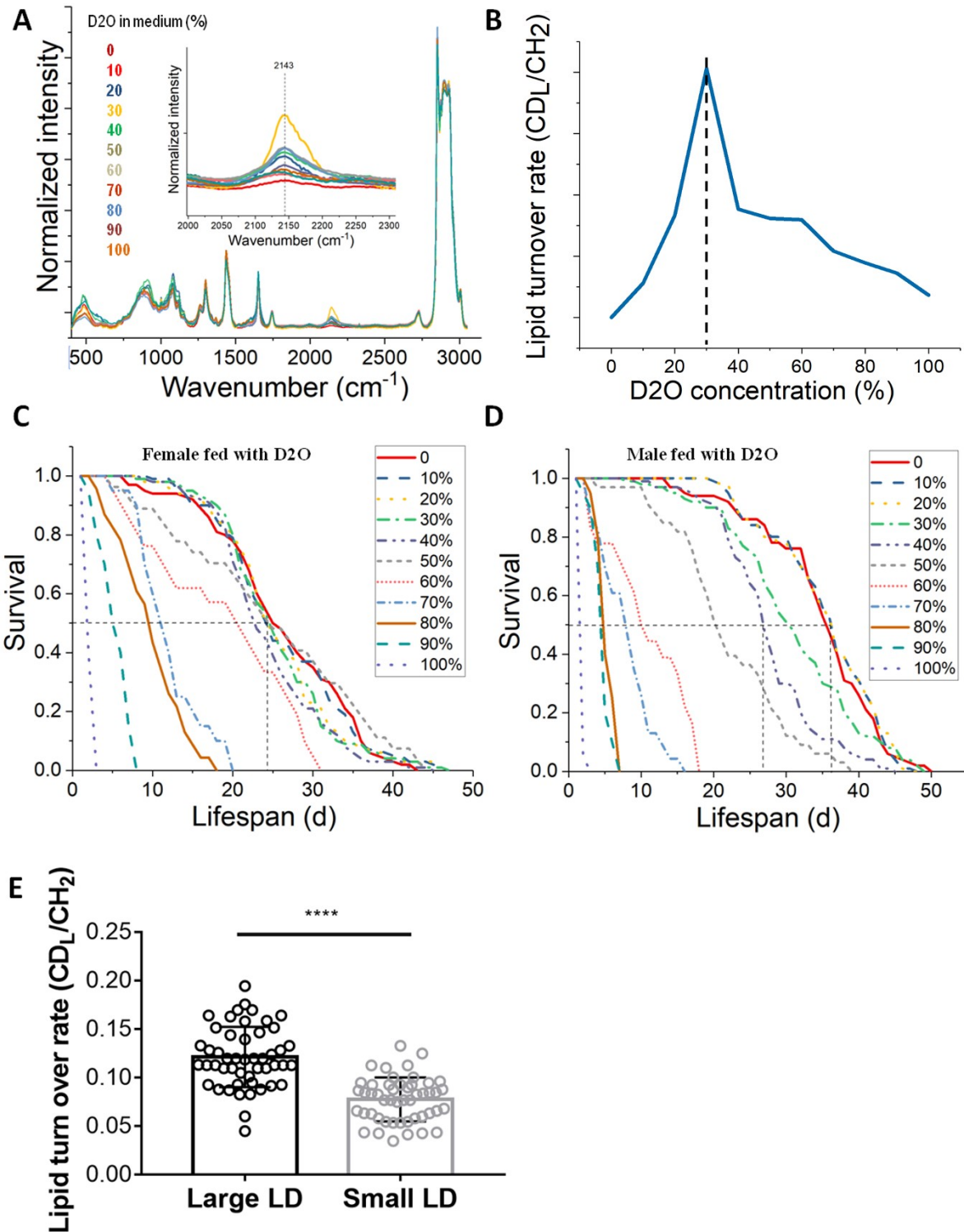


Fig. S2. High D2O concentration can inhibit metabolic activity and shorten lifespan. (A) Averaged fat body Raman spectra were obtained from flies grown in medium of different D2O concentration (0-100%). Each displayed spectrum was averaged from the spectra collected from 20-30 randomly selected fat body regions from 5 individual flies in each group. (B) The C-D signal was quantified

after 24h post-cultivation in medium with different D₂O concentration. (C and D) The lifespan was measured in both female and male flies fed with medium with different D₂O concentration. (E) The metabolic activity of large and small lipid droplets was quantified from the Raman spectra obtained from 5-day labeled 7-day adults. The results were shown as (mean ± s.d.) (n=50, from 3 individuals). **** indicates $p < 0.0001$ in an unpaired t test.