

Inventory of Supplemental Information

Supplemental Figures (six figures)

Figure S1, related to Figure 1. Increase in amplitude of circadian gene expression upon DR.

Figure S2, related to Figure 3. Male *tim*⁰¹ and *per*⁰¹ flies respond to DR in a similar way as controls.

Figure S3, related to Figure 4. Daily quantitative profiles of 250 lipid like features in control and *tim*⁰¹ flies on DR.

Figure S4, related to Figure 4. Daily quantitative profiles of trilauryl glycerol (TLG, feature 88) in control and *tim*⁰¹ flies on DR.

Figure S5, related to Figure 5. Overexpression of *per* and *tim* had no effect on lifespan under DR conditions.

Figure S6, related to Figure 6. Overexpression of *tim* increases expression, fat metabolism and lifespan in a diet dependent manner.

Supplemental Tables (four tables)

Table S1, related to Figure 1. Statistical analysis of gene expression (qPCR) data by two-way ANOVA with Bonferroni's post-hoc test.

Table S2, related to Figures 3, 4, 5 and 6. Detailed statistical analyses of survival curves provided in the main figures 3, 4, 5 and 6 (provided as a separate excel spreadsheet).

Table S3, related to Figures 3, 4 and 5. Summary of the independent repeats of the lifespan analyses of the survival curves.

Table S4, related to Figure 4 and Experimental Procedures (section HPLC-MS and –MS/MS analyses). HRMS analysis for TGs classified in groups 1-3 in figure 4E.

Supplemental Experimental Procedures

Fly husbandry, media and survival assays

High performance liquid chromatography (HPLC) - mass spectrometry (MS) instrumentation and methods.