



S3 Fig. Extended ^{13}C -Labeling Period Reveals the Majority of Membrane Fatty Acids are Replaced After 24 Hours. A population of day 3 adult nematodes was fed a diet of $^{12}\text{C}:^{13}\text{C}$ as in Fig 2A but for 24 hours instead of 6 hours. The analysis from the 6-hour feeding period predicted that each fatty acid population would be replaced entirely within this 24-hour period (white bars). The dashed line marks 100% replacement indicating the maximum replacement that can be measured. The amount of new fatty acid/hour calculated from the longer period (green) shows that there is very significant turnover after 24 hours from $56.6 \pm 1.0\%$ in C18:2n6 to $80.8 \pm 1.3\%$ in C16.1n7, supporting the rapid dynamics defined by the 6-hour labeling. In some cases like C18:0 and C18:2n6, the predictions align well with the experimental data. For the other species, there is separation between measured and predicted values with the largest difference seen in C16:0. We predict that the disparity between the numbers indicates the presence of a stable population of lipids that have slower dynamics, perhaps due to their subcellular location. SEM is shown; n=4.