Online Supplemental Material. Table S1 describes the yeast strains used in this study. Fig. S1 describes the salient transcriptional changes of a quadruple *are1Δ are2Δ dga1Δ lro1Δ* mutant compared to a control strain, both grown in equivalent concentrations of 0.01M oleate. The original data to that analysis is contained in Table S2 (Excel file). Table S3 describes global gene expression changes (GO categories) that result from deleting genes involved in neutral lipid biosynthesis compared to control strains (expressed as a percentage or number of genes changed). Tables S4 through S6 (Excel files) represent the genome wide expression changes in steryl ester, triglyceride or neutral lipid deficient strains, respectively, relative to control strain. Figure S2 describes the diacylglycerol acyltransferase activity of human DGAT2 expressed in a yeast strain lacking endogeneous neutral lipids. Figure S3 depicts the mass of phospholipids present in extracts of the indicated strains grown in the presence or absence of 0.5mM palmitate. Phospholipids were extracted and resolved as described in experimental procedures and stained with Iodine. The inset shows the relative levels (arbitrary units) of phospholipids based on intensity of the image. Figure S4 shows the growth curves of strains with lesions in both PE methylation and neutral lipid biosynthetic pathways, after grown in YPD plus 0.5mM palmitate.