Obesogens are endocrine disrupting chemicals that can increase lipid accumulation in organisms. Perchlorate, an inorganic pollutant, acts as a putative obesogen in some vertebrates including fish. Perchlorate can persist in aquatic environments for up to decades and is bioavailable to aquatic biota due to its high solubility in water. *Daphnia magna* is an invertebrate found in freshwater habitats. The transparent carapace of *D. magna* makes them a suitable model to observe physiological changes in their internal structures in response to changes in the environment. Thus, this study focused on evaluating changes in lipid accumulation following exposure to perchlorate. We hypothesized that perchlorate exposure will increase lipid droplet accumulation in *D. magna*. The objective of this study was to acutely expose gravid *D. magna* females to 0, 10, and 100 mg/L perchlorate in combination with low or high food levels. *D. magna* were qualitatively assessed for lipid droplets in the mid-gut region following Nile red staining and visualization using fluorescence microscopy. Preliminary exposures produced mixed results. Additional work is focused on the development of a quantitative fluorescence assay to better assess effects of perchlorate.