The influence of increased triglyceride storage in rat adipocytes on respiratory enzyme activities in different fat depots

Sarah Martz, Milosz Kaczmarek, Kathy Feng & Gladys Osien
Honours Biology & Pharmacology Program, McMaster University, Hamilton

1. Mitochondrial efficiency in female rats was compared between animals fed a high fat diet (45% calories from lipids) and animals on a control diet (5% calories from lipids). Two fat depots were used, perirenal and uterine fat.
2. Mitochondrial activity was quantified using cytochrome c oxidase (cCOX) activity. Mitochondrial mass was quantified using citrate synthase (CS) activity. Protein content was quantified using a bicinchoninic acid protein assay.
3. Mitochondrial efficiency was calculated as the ratio of cCOX to CS activity.
4. Mitochondrial efficiency was lower in perirenal fat when compared to uterine fat, but there were no significant effects of diet on this parameter.