1. No.
   2020T011

2. Title
   Effects of Cigarette Smoking on the Augmentation of Exercise Endurance Induced by Intermittent Fasting.

3. Period
   2020-2022

4. Summary
   We investigated changes in expression of lipid oxidation genes in the skeletal muscle of wild type mice which were subjected to repeated 72-hour intermittent fasting (72hIF) for 4 weeks. Expression of genes involved in mitochondrial activation and lipid oxidation was investigated in the IF group. Expression of uncoupling protein UCP3 and thyroid hormone converting enzyme DiO2, both of which promote lipid oxidation, was increased. It was suggested that persistent changes in expression of genes associated with 72hIF contributed to weight control, and improved glucose tolerance and exercise endurance. A human clinical study of aminolevulinic acid administration confirmed the safety of aminolevulinic acid supplementation for 3 months. However, it did not significantly improve grip strength when compared to placebo.