The Effect of a 3-week Delayed Prebiotic Fibre Intervention on Fat Infiltration in Rat Vastus Lateralis Muscle in a Diet-Induced Obesity Model

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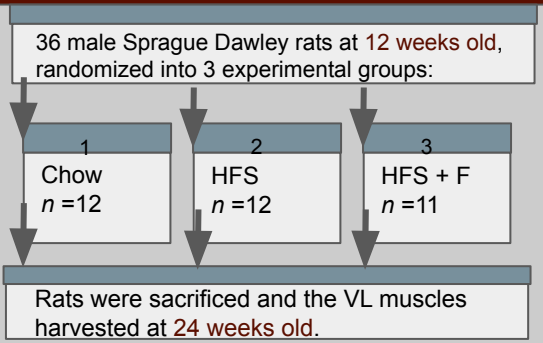
Background

- Previous studies have introduced prebiotic fibre diet interventions coinciding with the start of the HFS diet. [1]
- Effects of a delayed dietary fibre interventions on the VL muscle of rats exposed to an HFS diet have yet to be explored.

Purpose

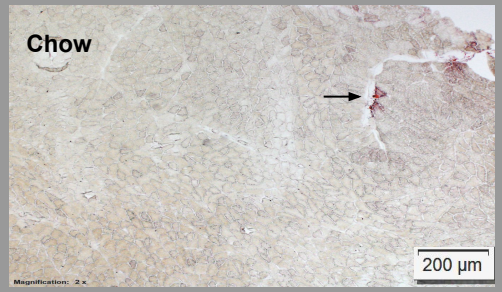
- To determine whether a 3-week delayed prebiotic fibre intervention alleviates or modifies fat accumulation in the VL muscle of Sprague-Dawley rats exposed to an HFS diet.

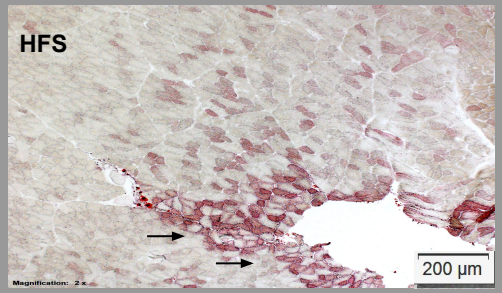
Methods

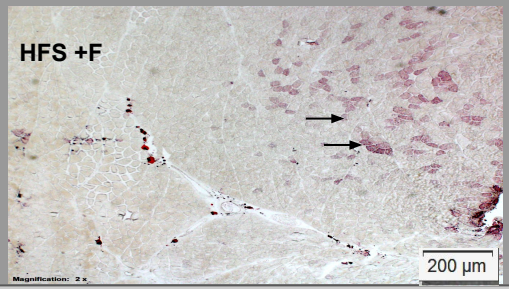


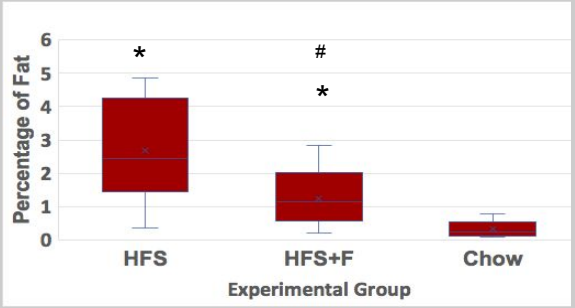
- VL muscles were analysed for fat content and were imaged/quantified using Image J. Statistical analysis using Welch's ANOVA and Games-Howell post hoc test.

Results









*Indicates significant difference from Chow group
# indicates a significant difference from HFS (p< 0.05)

Discussion

- Confirms our hypothesis, control and fibre group had significantly less fat infiltration than the HFS group.
- Findings provide information about the timeline for implementation of a diet intervention to alleviate muscle degeneration.

Conclusions

- A 3-week delayed prebiotic fiber intervention is within the critical timeline where the fibre supplement can have a protective effect on the VL muscle in Sprague Dawley rats.

References

References: [1] . Rios, JL et al. (2019). *Scientific Reports*, *9*(1), 1-10.

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