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Summary

OVERGROWTH OF AKKERMANSIA MUCINIPHILIA BY SPRING WATER INGESTION PREVENTS OBESITY AND HYPERGLYCEMIA IN A HIGH-FAT DIET-INDUCED MOUSE MODEL

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Spring water ingestion in high-fat diet-fed mice was associated with lower early body weight gain, improved glucose tolerance, reduced liver fatty changes, and 100-fold higher gut Akkermansia muciniphilia levels compared to tap water.

KEY POINTS

- In C57/BL mice fed a high-fat diet, spring water ingestion resulted in significantly lower body weight than tap water in the early experimental period and a significantly lower area under the curve for oral glucose tolerance testing at 17 weeks
- Gut levels of Akkermansia muciniphilia were 100-fold higher in high-fat diet mice receiving spring water compared to those receiving tap water
- Histologically, the most severe liver fatty changes were observed in the high-fat diet with tap water group, while serologic markers did not differ significantly between high-fat diet groups
- The authors suggest that spring water ingestion and associated Akkermansia muciniphilia overgrowth may improve early-stage obesity and ameliorate high-fat diet-induced hyperglycemia

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