

Table 4. Mycoprotein effect on serum uric acid levels and gut health.

| Effect of mycoprotein on gut health | | | | | | | | | |
|---|---|---|-------------------------------|------------------------------|-------------------------------|--|---|--|--|
| Author/ year | Aim of study | Study characteristics | No of participants | Duration of study | Place of study | Procedure/ Intervention | Result/Outcomes | Conclusion/ Remarks | |
| (48) | The effects of replacing mycoprotein with highly processed red meat on gastrointestinal and cardiometabolic health. | Investigator-blind randomized crossover control trial | 20 | 8 weeks | England | The study comprised of 3 phases Phase 1 (2 weeks) red and processed meat (Meat) Wash out (4 weeks) Phase 2 (2 weeks) mycoprotein based foods participants consumed 240g (uncooked 2121 weight) of either red and processed meat products or equivalent weight of mycoprotein | Stool weight: Phase 1: Significant decrease (-51.01 ± 13.40, P < 0.01) Phase 2: Non-significant increase (+32.63 ± 15.70g, P = 0.12) Microbial composition: (Change in relative abundance from baseline) Significant influences on number of genera <i>Lactobacillus spp.</i> (+0.02) <i>Roseburia spp</i> (-2.01) <i>Oscillibacter spp</i> . (+0.04) | This work demonstrated an enhancement in the genus Lactobacilli following chronic mycoprotein consumption. mycoprotein may be a beneficial alternative to meat in the context of gut health. However further larger scale human randomized trials are needed | |
| Effect of mycoprotein on serum uric acid concentration | | | | | | | | | |
| Author/ year | Aim of study | Study characteristics | No of participants | Study duration | Place of study | Procedure/ Intervention | Result/Outcome | Conclusion/ remarks | |
| (43) | To study the effect of mycoprotein ingestion on blood uric acid in a dose response manner | Randomized, single-blind, cross-over design | 15 | 240 minutes | England | Intervention group: Mass-matched bolus of mycoprotein MYC (20, 40, 60 or 80g) Control group: 20 g milk protein | Fasting plasma uric acid concentration similar in all conditions Postprandial period: MYC20: significant decrease at 150 min (77±4) MYC40- remained unaltered (85±7) MYC60- increased modestly by 30 to 150 min (86±5) MYC80- increase by 30 min, remaining elevated throughout | The study suggested that moderate doses of mycoprotein (≤40 g) does not modulate serum uric acid concentrations. | |

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| (44) | To investigate the impact of replacing mycoprotein with meat/fish (either low/high nucleotide content) during a one-week intervention on blood uric acid levels in healthy adults. | Randomized parallel group trial | 20 | 7 days | England | Intervention group: nucleotide-depleted mycoprotein (LN-MYC; n = 10) nucleotide-rich mycoprotein (HN-MYC) Control Group: Meat/fish (CON; n = 10) With a total daily intake of (1.2 g per kg bm) | the post parranda period (90±6) MIK20-(82±6) Constant serum uric acid concentration in the CON (~296 µmol. L ⁻¹) and LN-MYC (~282 µmol. L ⁻¹) groups In HN-MYC, serum uric acid concentrations steadily increased from baseline (295 ± 55 µmol. L ⁻¹) at 2 (402 ± 59 µmol. L ⁻¹ ; P < 0.05) | A high dietary nucleotide diet resulted in a sustained increase in blood uric acid levels. There was no effect on insulin sensitivity or glycemic control, however. |
| (45) | To investigate how a nucleotide-rich mixed meal affected postprandial circulatory uric acid levels. | Randomized, controlled, double-blind, crossover trial | 10 | 24hrs | England | Intervention: High nucleotide MYC meal. (H-NU) 8.83% of MYC dry weight Control: MYC depleted mycoprotein meal/ (L-NU) 1.96% of MYC dry weight | Intervention (H-NU) 12% increase from 284 ± 13 to 319 ± 12 µmol·L ⁻¹ after 210 min) Control (L-NU) Decreasing by 7% (from 279 ± 16 to 257 ± 14 µmol·L ⁻¹) | A nucleotide-rich mixed meal causes an increase in blood uric acid concentrations for around 12 hours before returning to normal after 24 hours. |
| (47) | The effect of twice-daily nucleotide-rich mixed-meal consumption on postabsorptive blood uric acid levels was studied for one week. | Randomized, controlled, parallel-group trial | 20 | 7 days | England | Nucleotide rich meal, thrice daily, 7 d fully controlled eucaloric diet Intervention: High nucleotide MYC meal. (H-NU) 8.83% of MYC dry weight | Serum uric acid levels remained unchanged in low Diet group Increase in uric acid concentration in high group (from 295 ± 17 to 472 ± 29 µmol L ⁻¹ by day 6; P < 0.05) | According to the findings, consuming nucleotide mixed meals causes postabsorptive blood uric acid levels to rise over clinically tolerable limits. |

Control: MYC
depleted
mycoprotein
meal/ (L-NU)
1.96% of
MYC dry
weight
