Substituting meat for mycoprotein reduces genotoxicity and increases the abundance of beneficial microbes in the gut.

**FOR GUT-NESS SAKE, SHOULD WE SWAP RED AND PROCESSED MEAT FOR MYCOPROTEIN?**

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**What is wrong with eating red and processed meat?**

**Human health:**
Population studies show that eating too much red and processed meat increases the risk of cancer and cardiovascular disease.

**Planetary health:**
Greenhouse gas emissions from meat are a major contributor to the escalating climate crisis.

**Why is it hard for consumers to change?**

Meat has an important role in culinary traditions (ie, ‘meat and two veg’). Uncertainty about how best to replace meat and concerns whether alternatives are as nutritious.

**Mycoprotein as a substitute?**

A nutritionally complete protein developed by UK scientists in the 1980s and main constituent of Quorn Foods products. High fibre, high protein, low fat protein produced from cultured fungal biomass (Fusarium Vennatum). Swapping meat for mycoprotein has been shown to lower cholesterol. But the effects on gut health are unknown.

**What did we want to find out?**

We asked the question: Does substituting red and processed meat for mycoprotein benefit gut health?

We investigated the effects this substitution would have on 1) faecal genotoxicity 2) metabolites produced during digestion 3) gut bacteria enriched.

**What did we do?**

We conducted Mycomeat, a randomised crossover control trial.

20 healthy male adults were randomly assigned to consume either 240 g/day of red and processed meat or 240 g/day mycoprotein (as Quorn products) for 2 weeks. They returned to their usual diet for 4 weeks, before crossing over to the opposite diet for 2 weeks.

At the beginning and conclusion of each diet, physical measurements and biological samples were taken to investigate the effects of the different diets.

**What did we find?**

**Mycoprotein consumption significantly reduced faecal genotoxicity compared to the meat diet.**

Gut bacteria that help to maintain a healthy gut including Lactobacillus, Roseburia and Akkermansia were enriched by the mycoprotein diet, whereas potentially harmful bacteria such as Oscillibacter and Allobacter were enriched by the meat diet.

**What are the implications?**

We have found that consuming more Quorn and less meat may be good for the health of your gut.

With recommendations to reduce our production and consumption of meat, the mycoprotein-based Quorn represents a promising meat alternative to provide benefits to both planetary and human health.

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References

Full list available in the online version. Dominick N Farsi and colleagues for the Quorn Health Team, 1. Svorena Lingua, 2. Colwell, 3. Quorn, 4. Greenpeace, 5. Planetary Health Initiative. We would like to thank all the volunteers who participated in this study. The work was supported by EPSRC with funding from Innovate UK.
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