

Risks and wider benefits of Psyllium husk treatment

Psyllium husk, derived from the seeds of the *Plantago ovata* plant, is a soluble fibre commonly used as a dietary supplement. It is used for its laxative properties and can be used in various gastrointestinal conditions, such as constipation and irritable bowel syndrome (IBS).

Additionally, dietary fibre such as that psyllium contains has been associated with beneficial effects on cholesterol levels and glycaemic control (Anderson et al., 2009).

Safety and Tolerability of Psyllium Husk

Psyllium tends to be well-tolerated, particularly if started at low dose and increased gradually and taken with plenty of water (McRorie, 2015).

Common Side Effects

- **Gastrointestinal Effects:** Psyllium is generally considered safe for most individuals when taken as directed. The most common side effects are gastrointestinal and include:
 - **Bloating and Wind:** Increased fibre intake can lead to bloating, flatulence, and abdominal discomfort, especially during the initial stages of consumption (Fernández-Bañares, 2006).
 - **Mild Stomach Cramps:** Some users may experience minor stomach cramps due to increased intestinal activity (Eswaran et al., 2013).

These symptoms typically subside as the body adjusts to the increased fibre intake.

Rare Side Effects

- **Allergic Reactions:** Although rare, allergic reactions to psyllium husk can occur. Such reactions range in severity from itching and skin issues through to life-threatening reactions like anaphylactic shock. Individuals with known allergies to psyllium or other members of the *Plantago* genus should avoid its use (James et al., 1991).
- **Oesophageal and Intestinal Obstruction:** Psyllium expands upon contact with water. If not taken with sufficient liquid, it can swell in the throat or oesophagus. Rare cases of intestinal blockage have been reported, particularly in individuals with pre-existing gastrointestinal disorders (Hefny et al., 2018). To mitigate this risk, it's essential to consume psyllium with at least 200ml of water.

Capital and revenue requirements for making Psyllium husk available to reduce PFAS body burden

Necessary Equipment

None

Required Personnel

None. Psyllium can be purchased over the counter

Maintenance and Regulatory Compliance

No additional requirement over the status quo

Cost of accessing Psyllium husk to reduce PFAS body burden

Capital cost

There are no capital costs

Additional Costs to Consider

- **Training:** There may be some training costs around the safe and appropriate prescribing of Psyllium. While it is likely that this could be delivered within existing resources, it would be reasonable to assume an additional cost of £5,000 per annum.
- **Drug costs:** The estimated costs of the different psyllium preparations are outlined below. These are per person per year estimates and do not include any discounts that might be available.

Product	Daily Dose	Annual Cost (£)
Generic Powder	7 g	£30.66
Fybogel Sachets	2 sachets (7 g)	£97.09
Psyllium Capsules	14 capsules (7 g)	£424.13

In summary

Bringing all of this together, there is zero capital outlay. Assuming that 50 people are treated and they require twelve months of treatment each, total drug costs vary from £1,533 for generic Psyllium to £21,206.50 for capsules. On this basis, the maximum total programme cost, if it were fully funded, would be £26,206.50 per annum.

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