Psyllium
(Konsyl®, Metamucil®)

Classification: Bulk-forming laxative

Description:
- Psyllium is available in both powder form and as a capsule. Capsules are available as either 400 mg or 520 mg. Powders are usually available with yellow or orange coloring and flavored accordingly with orange, although there are dye-free and flavor-free products available. Powders are available either in unit dose packets or in bulk jars.
- Psyllium should be stored in a cool, dry area.
- Must be taken with at least 8 ounces of water to reduce risk of choking

Pharmacology:
- Psyllium is a soluble fiber, which, when in the intestine, absorbs water and forms a viscous liquid, thus accelerating transit time and increasing peristalsis.

Pharmacokinetics:
- Onset of action: 12 to 72 hours until relief of constipation
- Absorption: None

Indications:
- Dietary fiber supplement, treatment of occasional constipation, reduce risk of coronary heart disease
- Off-label: Chronic constipation, diarrhea, irritable bowel syndrome

Dosage:
- Dietary fiber supplementation: (total daily fiber intake listed)
  - Children 1 to 3: 19 grams/day
  - Children 4 to 8: 25 grams/day
  - Children 9 to 13: males – 31 grams/day; females – 26 grams/day
  - Children 14 to 18: males – 38 grams/day; females – 26 grams/day
  - Adults 19 to 50: males – 39 grams/day; females – 25 grams/day
  - Adults 51 and older: males – 30 grams/day; females – 21 grams/day
  - Pregnancy: 28 grams/day
  - Lactation: 29 grams/day
- Constipation:
  - Children 6 to 11: 1.25 to 15 grams/day
  - Age 12 and over: 2.5 to 30 grams/day in divided doses
CHD risk reduction:
  - At least 7 grams soluble fiber/day; at least 10.3 grams psyllium seed husk/day

Contraindications and Precautions:
  - Hypersensitivity to psyllium or any component of formulation
  - Fecal impaction / gastrointestinal obstruction

Interactions: No known significant interactions

Adverse Reactions:
  Abdominal cramps, constipation, diarrhea, esophageal obstruction, intestinal obstruction, anaphylaxis, allergic conjunctivitis, bronchospasm

Costs and Monitoring:
  Monitor for passage of stool, development of abdominal pain

<table>
<thead>
<tr>
<th>Item Description</th>
<th>NDC</th>
<th>Unit cost</th>
<th>Inv cost</th>
<th>Doses/inv</th>
<th>Cost/dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Konsyl Capsules 100</td>
<td>00224-1847-80</td>
<td>$ 5.77</td>
<td>$ 5.77</td>
<td>16.67</td>
<td>$ 0.35</td>
</tr>
<tr>
<td>Konsyl Easy Mix 300 GM</td>
<td>00224-1856-80</td>
<td>$ 6.42</td>
<td>$ 6.42</td>
<td>69.77</td>
<td>$ 0.09</td>
</tr>
<tr>
<td>Konsyl Powder 6 gm powder packet 30</td>
<td>00224-1801-84</td>
<td>$ 0.25</td>
<td>$ 7.57</td>
<td>30.00</td>
<td>$ 0.25</td>
</tr>
<tr>
<td>Konsyl powder sf orange 30</td>
<td>00224-1855-82</td>
<td>$ 4.44</td>
<td>$ 4.44</td>
<td>30.00</td>
<td>$ 0.15</td>
</tr>
<tr>
<td>Konsyl powder 450 gm</td>
<td>00224-1855-81</td>
<td>$ 4.58</td>
<td>$ 4.58</td>
<td>128.57</td>
<td>$ 0.04</td>
</tr>
<tr>
<td>Dr. Naturas Unifiber 8.4 oz (cellulose)</td>
<td>46017-0044-08</td>
<td>$ 8.20</td>
<td>$ 8.20</td>
<td>59.59</td>
<td>$ 0.14</td>
</tr>
<tr>
<td>Soluble Fiber Powder 454 gm (methylcellulose)</td>
<td>00904-5675-16</td>
<td>$ 5.00</td>
<td>$ 5.00</td>
<td>227.00</td>
<td>$ 0.02</td>
</tr>
<tr>
<td>Fiber Tab 90 (polycarbophil)</td>
<td>00904-2500-91</td>
<td>$ 0.05</td>
<td>$ 4.73</td>
<td>45.00</td>
<td>$ 0.11</td>
</tr>
<tr>
<td>Fiber-Lax Tabl 500 mg 60 (polycarbophil)</td>
<td>00536-4306-08</td>
<td>$ 0.05</td>
<td>$ 3.20</td>
<td>30</td>
<td>$ 0.11</td>
</tr>
</tbody>
</table>

Efficacy/Safety:
  - A literature review comparing fermentable fiber vs. non-fermentable fiber found psyllium to be efficacious in both constipation relief and diarrhea relief over methylcellulose.
  - Study comparing psyllium and methylcellulose to placebo showed statistically significant increase in stool weight, consistency, ease of passage, and frequency. But when methylcellulose was compared to psyllium, no statistical significant differences in efficacy or adverse effects were found.
  - Study comparing psyllium to polycarbophil found no significant difference in stool consistency, straining score, or preference regarding efficacy or bloating. Statistically significant differences found in stool frequency in favor of psyllium and patient preference regarding flatulence in favor of polycarbophil.
**Conclusions:**
Most estimates of constipation prevalence in North America are between 12% and 19%. This prevalence is likely higher in the inpatient setting given a lack of mobility, dietary changes, and anticholinergic or analgesic drugs being administered. Bulking agents treat constipation by attracting water via stimulation of gut mucosa or form gels in the bowel, thus increasing stool water content.

The bulk-forming laxatives currently on the Texas DSHS formulary are methylcellulose and polycarbophil. Methylcellulose has a FDA labeled indication as adjunct in treatment of constipation. Polycarbophil has a FDA labeled indication as treatment of constipation or diarrhea. Psyllium serves as a dietary fiber supplement, treatment of occasional constipation, and reduces risk of CHD. Studies have shown all three of these options are comparable in both efficacy and safety.

Regarding price, psyllium packets are the most expensive option at $0.25 per dose while psyllium 454 gm powder price per dose is very low at $0.04 per dose – less than half the price of polycarbophil formulations.

**Recommendation:**
Recommended for addition to the formulary.

**References:**
5. Polycarbophil Monograph. Lexi-Drugs. Lexi-Comp Online.

Prepared by:
Eric Wright
Pharmacy Intern
Austin State Hospital
01/12/2017

Reviewed by:
Lisa M. Mican, Pharm.D., BCPP
Assistant Pharmacy Director, Clinical Coordinator
Austin State Hospital