Benefits of Talking Wheat Bran

Digestive health is top of mind for Canadians! Market research indicates that consumers continue to look for strategies to help manage functional digestive concerns such as constipation, bloating and cramping.
A recent report on health concerns and habits of consumers has placed digestive health as a top health and nutrition trend in 2012 (Mellentin, 2011). In managing their digestive health, consumers are increasingly looking for food remedies rather than pills or supplements. Furthermore, a related trend is “feel-the-benefit”, which refers to a demand for foods that produce health benefits that can be felt or measured. For digestive health, foods that contain dietary fibre such as wheat bran can facilitate “feeling good” by promoting regularity.

**Foods that...**
- deliver on fibre content
- contain wheat bran or other dietary fibres that promote digestive regularity
- are consumed on a regular basis
...can deliver on “feel-the-benefit” for digestive health

By educating clients on this “feel-the-benefit” aspect of fibre, dietitians can help improve fibre intakes. Together with insights from market research, this approach may resonate with patients and encourage them to consume more fibre as a healthy dietary habit.

**Effects of Wheat Bran Fibre on Gastrointestinal Regularity**

Studies have demonstrated that wheat bran fibre consistently improves regularity, which is measured by stool weight, stool consistency and gastrointestinal (GI) transit time. As pioneers in the field, Cummings and his group first described the relationship between wheat bran fibre and regularity in the 1970s. In one study, they showed that the addition of 28 g of wheat fibre to the diet (doses ranging from 17 g to 45 g per day) increased stool weight from 79 g to 228 g per day and decreased transit time from 58 hrs to 40 hrs (Cummings et al., 1976). In a follow up study, wheat bran fibre induced a greater increase in fecal weight and reduction in transit time, compared with carrot, cabbage or apple fibre (Cummings et al., 1978).

![The Constipation Problem](The_Consolation Problem)

Although Canadian statistics regarding digestive health are sparse, a nationwide survey found that constipation is a common health concern, which often leads Canadians to seek medical attention (Pare et al., 2001). Of 1149 subjects randomly surveyed across Canada, 27% and 39% reported constipation within the past 3 months and 12 months, respectively. Moreover, 34% of the subjects who reported constipation in the past 3 months had visited a physician due to constipation, and 34% had used laxatives as a therapeutic strategy. Women were twice as likely to seek medical attention for constipation compared with men (37% vs. 20%). Women 65 years or older also had the greatest likelihood (51%) of visiting a medical practitioner for constipation.

This Canadian study was included in a more recent literature review on the prevalence of constipation in North America (McCrea et al., 2009). Depending on the definition of constipation and the population sampled, the prevalence of constipation in North America varied between 2% and 28% among the studies; however, gender and age trends in the prevalence of constipation were generally consistent across the studies. The authors concluded that constipation prevalence is consistently higher in women compared with men; and across genders, prevalence increases gradually to the age of 50, with the largest increase after the age of 70.
For the most part, wheat bran fibre is not fermented by colonic microflora in the large intestine. It modulates regularity by binding and trapping water within the lumen, which increases the bulk of luminal content, and in turn, promotes its peristaltic movement through the large intestine. With a reduced transit time of fecal matter through the large intestine (the content moves through faster), less water is able to be re-absorbed by the epithelium and stool bulk is increased. Laxation is facilitated by both of these effects.

**How Wheat Bran Fibre Modulates Gastrointestinal Regularity**

For the most part, wheat bran fibre is not fermented by colonic microflora in the large intestine. It modulates regularity by binding and trapping water within the lumen, which increases the bulk of luminal content, and in turn, promotes its peristaltic movement through the large intestine. With a reduced transit time of fecal matter through the large intestine (the content moves through faster), less water is able to be re-absorbed by the epithelium and stool bulk is increased. Laxation is facilitated by both of these effects.

**The Use of Wheat Bran Fibre to Treat Constipation in Various Population and Patient Groups**

**Children**

Constipation is a common childhood problem and an increase in dietary fibre is widely recommended as a first treatment step. A recent study evaluated whether a fibre-rich diet containing wheat bran could be effectively applied to children (Maffei and Vicenti, 2011). After two years of collecting information on the dietary intake and bowel habits of 28 constipated children, researchers concluded that a diet containing wheat bran was a feasible and economical tool to treat childhood constipation. However, frequent reinforcement with the children on the importance of bran was required in order to ensure dietary adherence.

**Post-surgical Patients**

Orthopedic surgery patients can become constipated during post-operative recovery for various reasons, including increased pain, pain medications and decreased mobility. Wheat bran plus Colace was compared with Metamucil® plus Colace as strategies for preventing constipation in patients who underwent orthopaedic surgery (Groth, 1988). Results showed that compared with Metamucil® plus Colace, wheat bran plus Colace facilitated softer, more well-formed stools and resulted in a decreased need for suppositories, enemas and laxatives. The recommendations from this study were that orthopedic patients should initiate the use of wheat bran as soon as they are able to tolerate a regular diet following surgery, rather than waiting until constipation prevails.
Pregnancy
It is not unusual for a woman to complain of constipation when pregnant. In a review paper on interventions for treating constipation in pregnancy, it has been suggested that a contributing factor is increased circulating progesterone levels during the second and third trimester of pregnancy (Jewell and Young, 2009). This review concluded that bulk forming supplements such as bran are effective as an initial treatment strategy for reducing constipation in pregnant women; and if constipation persists, stimulant laxative therapy can be implemented.

The Geriatric Population
Constipation is a considerable problem in the elderly due to various issues, including decreased physiological function, lower physical activity and medications. Using a cross-over design, researchers have compared bulk laxatives and wheat bran (20 g per day) in 10 constipated geriatric patients over two, 8-week treatment periods (Andressen et al., 1979). Results demonstrated that when receiving laxatives, transit time was 126 hrs compared with 89 hrs for wheat bran.

The Bottom Line
Digestive health is a top trend and Canadians seek foods as opposed to pills or supplements to facilitate digestive benefits that they can “feel.” No where is this trend more relevant than in constipation, a major digestive ailment. Wheat bran is effective in treating constipation generally, as well as in specific population and patient groups. During education sessions with patients, emphasizing the “feel-the-benefit” aspect of dietary fibre, particularly of wheat bran in regularity, dietitians can improve the willingness of patients to increase daily dietary fibre intake.

The Registered Dietitians at Kellogg Canada invite you to take the Wheat Bran Challenge!

Eat at least 4 grams of wheat bran every day for two weeks

### Sources of wheat bran fibre in cereals that can help you along...

<table>
<thead>
<tr>
<th>4-6 grams Wheat Bran fibre per serving</th>
<th>≥ 7 grams Wheat Bran fibre per serving</th>
</tr>
</thead>
<tbody>
<tr>
<td>All-Bran Flakes*</td>
<td>All-Bran Buds*</td>
</tr>
<tr>
<td>All-Bran* Strawberry Bites</td>
<td>All-Bran Original*</td>
</tr>
<tr>
<td>Mini-Wheats*</td>
<td></td>
</tr>
</tbody>
</table>

After you “feel-the-benefit”, share your creative ideas that may help Canadians eat more wheat bran each day. Email your “wheat bran words of wisdom” to kelloggsnutrition.canada@kellogg.com for your chance to win a year’s supply of any Kellogg products!