Prevention of Constipation in the Older Adult Population
Greetings from Doris Grinspun  
Executive Director  
Registered Nurses’ Association of Ontario

It is with great excitement that the Registered Nurses’ Association of Ontario disseminates this revised nursing best practice guideline to you. Evidence-based practice supports the excellence in service that nurses are committed to deliver in our day-to-day practice. The RNAO is committed to ensuring that the evidence supporting guideline recommendations is the best available, and this guideline has been recently reviewed and revised to reflect the current state of knowledge.

We offer our endless thanks to the many institutions and individuals that are making RNAO’s vision for Nursing Best Practice Guidelines (NBPG) a reality. The Government of Ontario recognized RNAO’s ability to lead this program and is providing multi-year funding. Tazim Virani – NBPG program director – with her fearless determination and skills, is moving the program forward faster and stronger than ever imagined. The nursing community, with its commitment and passion for excellence in nursing care, is providing the knowledge and countless hours essential to the creation, evaluation and revision of each guideline. Employers have responded enthusiastically by getting involved in nominating best practice champions, implementing and evaluating the NBPG and working towards an evidence-based practice culture.

Now comes the true test in this phenomenal journey: will nurses utilize the guidelines in their day-to-day practice?

Successful uptake of these NBPG requires a concerted effort of four groups: nurses themselves, other healthcare colleagues, nurse educators in academic and practice settings, and employers. After lodging these guidelines into their minds and hearts, knowledgeable and skillful nurses and nursing students need healthy and supportive work environments to help bring these guidelines to life.

We ask that you share this NBPG, and others, with members of the interdisciplinary team. There is much to learn from one another. Together, we can ensure that Ontarians receive the best possible care every time they come in contact with us. Let’s make them the real winners of this important effort!

RNAO will continue to work hard at developing, evaluating and ensuring current evidence for all future guidelines. We wish you the best for a successful implementation!

Doris Grinspun, RN, MSN, PhD(cand), OOnt

Executive Director  
Registered Nurses' Association of Ontario
Prevention of Constipation in the Older Adult Population

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Declaration of interest and confidentiality were made by all members of the guideline revision panel.
Further details are available from the Registered Nurses Association of Ontario.
The RNAO also wishes to acknowledge Diane Legere, RN, APCCN, BScN, MScN(candidate) for her work as a Research Assistant in conducting the quality appraisal of the literature and preparation of evidence tables for the revision of this guideline.

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Prevention of Constipation in the Older Adult Population

Acknowledgement

The Registered Nurses’ Association of Ontario wishes to acknowledge the following individuals and/or groups for their contribution in reviewing this nursing best practice guideline and providing valuable feedback during the initial development of this document (2000-2002):

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Chateau Gardens Queens
Chelsea Park Retirement Community
Extendicare, London
London Health Sciences Centre
St. Joseph's Health Care, Parkwood Hospital

RNAO sincerely acknowledges the leadership and dedication of the nurse researchers who directed the evaluation phase of this Nursing Best Practice Guideline in 2000.

Principal Investigators: Dr. Nancy Edwards, Dr. Barbara Davies – University of Ottawa
Evaluation Team Co-Investigators: Dr. Maureen Dobbins, Dr. Jenny Ploeg, Dr. Jennifer Skelly – McMaster University
Dr. Patricia Griffin – University of Ottawa
Prevention of Constipation in the Older Adult Population

Disclaimer
These best practice guidelines are related only to nursing practice and not intended to take into account fiscal efficiencies. These guidelines are not binding for nurses and their use should be flexible to accommodate client/family wishes and local circumstances. They neither constitute a liability or discharge from liability. While every effort has been made to ensure the accuracy of the contents at the time of publication, neither the authors nor the Registered Nurses’ Association of Ontario (RNAO) give any guarantee as to the accuracy of the information contained in them nor accept any liability, with respect to loss, damage, injury or expense arising from any such errors or omission in the contents of this work. Any reference throughout the document to specific pharmaceutical products as examples does not imply endorsement of any of these products.

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How to Use this Document

This nursing best practice guideline is a comprehensive document providing resources necessary for the support of evidence-based nursing practice. The document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client. Guidelines should not be applied in a “cookbook” fashion but used as a tool to assist in decision making for individualized client care, as well as ensuring that appropriate structures and supports are in place to provide the best possible care.

Nurses, other healthcare professionals and administrators who are leading and facilitating practice changes will find this document valuable for the development of policies, procedures, protocols, educational programs, assessments and documentation tools. It is recommended that the nursing best practice guidelines be used as a resource tool. Nurses providing direct client care will benefit from reviewing the recommendations, the evidence in support of the recommendations and the process that was used to develop the guidelines. However, it is highly recommended that practice settings/environments adapt these guidelines in formats that would be user-friendly for daily use. This guideline has some suggested formats for such local adaptation and tailoring.

Organizations wishing to use the guideline may decide to do so in a number of ways:
- Assess current nursing and healthcare practices using the recommendations in the guideline.
- Identify recommendations that will address identified needs or gaps in services.
- Systematically develop a plan to implement the recommendations using associated tools and resources.

RNAO is interested in hearing how you have implemented this guideline. Please contact us to share your story. Implementation resources will be made available through the RNAO website at www.rnao.org/bestpractices to assist individuals and organizations to implement best practice guidelines.
Table of Contents

Summary of Recommendations ................................................................. 10
Interpretation of Evidence ........................................................................ 12
Responsibility for Guideline Development .............................................. 12
Purpose & Scope ....................................................................................... 13
Original Guideline Development Process – 2000 .................................... 14
Revision Process – 2005 .......................................................................... 15
Definition of Terms ................................................................................... 16
Background Context .................................................................................. 19
Practice Recommendations ...................................................................... 20
Education Recommendation .................................................................... 28
Organization & Policy Recommendations .............................................. 29
Research Gaps & Future Implications ...................................................... 31
Evaluation & Monitoring of Guideline .................................................... 32
Implementation Strategies ....................................................................... 34
Process for Update/Review of Guideline ................................................ 36
References .............................................................................................. 37
Bibliography ............................................................................................ 40
Appendix A: Search Strategy for Existing Evidence ......................................................... 42
Appendix B: Prevention of Constipation – Algorithm ..................................................... 45
Appendix C: Sample Bowel Elimination Record ............................................................. 46
Appendix D: Dietary Fibre Values for Selected Foods .................................................... 48
Appendix E: Foods High in Fibre .................................................................................. 50
Appendix F: Get Up and Go Cookies .............................................................................. 51
Appendix G: Resources for Constipation Information .................................................. 52
Appendix H: Description of the Toolkit ........................................................................ 53
## Summary of Recommendations

<table>
<thead>
<tr>
<th>RECOMMENDATION</th>
<th>*LEVEL OF EVIDENCE</th>
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<tbody>
<tr>
<td><strong>Practice Recommendations</strong></td>
<td></td>
</tr>
<tr>
<td>1.0 Assess constipation by obtaining a client history.</td>
<td>IV</td>
</tr>
<tr>
<td>2.0 Obtain information regarding:</td>
<td>IV</td>
</tr>
<tr>
<td>■ Usual amount and type of daily fluid intake with particular attention to the amount of caffeine and alcohol.</td>
<td></td>
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<tr>
<td>■ Usual dietary fibre and amount of food ingested.</td>
<td></td>
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<tr>
<td>■ Any relevant medical or surgical history which may be related to constipation such as neurological disorders, diabetes, hypothyroidism, chronic renal failure, hemorrhoids, fissures, diverticular disease, irritable bowel syndrome, previous bowel surgery, depression, dementia or acute confusion.</td>
<td></td>
</tr>
<tr>
<td>3.0 Review the client's medications to identify those associated with an increased risk for developing constipation, including chronic laxative use and history of laxative use.</td>
<td>III</td>
</tr>
<tr>
<td>3.1 Screen for risks of polypharmacy, including duplication of both prescription and over-the-counter drugs and their adverse effects.</td>
<td>III</td>
</tr>
<tr>
<td>4.0 Identify the client's functional abilities related to mobility, eating and drinking, and cognitive status related to abilities to communicate needs, and follow simple instructions.</td>
<td>III</td>
</tr>
<tr>
<td>5.0 Conduct a physical assessment of the abdomen and rectum. Assess for abdominal muscle strength, bowel sounds, abdominal mass, constipation/fecal impaction, hemorrhoids and intact anal reflex.</td>
<td>IV</td>
</tr>
<tr>
<td>6.0 Prior to initiating the constipation protocol, identify bowel pattern (frequency and character of stool, usual time of bowel movement), episodes of constipation and/or fecal incontinence/soiling, usual fluid and food intake (type of fluids and amounts), and toileting method through use of a 7-day bowel record/diary.</td>
<td>IV</td>
</tr>
<tr>
<td>7.0 Fluid intake should be between 1500-2000 milliliters (ml) per day. Encourage client to take sips of fluid throughout the day and whenever possible minimize caffeinated and alcoholic beverages.</td>
<td>III</td>
</tr>
<tr>
<td>8.0 Dietary fibre intake should be from 25 to 30 grams of dietary fibre per day. Dietary intake of fibre should be gradually increased once the client has a consistent fluid intake of 1500 ml per 24 hours. Consultation with a dietitian is highly recommended.</td>
<td>III</td>
</tr>
<tr>
<td>9.0 Promote regular consistent toileting each day based on the client's triggering meal. Safeguard the client's visual and auditory privacy when toileting.</td>
<td>III</td>
</tr>
<tr>
<td>9.1 A squat position should be used to facilitate the defecation process. For clients who are unable to use the toilet (e.g., bed-bound) simulate the squat position by placing the client in left-side lying position while bending the knees and moving the legs toward the abdomen.</td>
<td>III</td>
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</tbody>
</table>

*See page 12 for details regarding “Interpretation of Evidence”.
**Summary of Recommendations**

<table>
<thead>
<tr>
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<tr>
<td><strong>Practice Recommendations</strong></td>
<td></td>
</tr>
<tr>
<td>10.0 Physical activity should be tailored to the individual's physical abilities, health condition, personal preference, and feasibility to ensure adherence. Frequency, intensity and duration of exercise should be based on client's tolerance.</td>
<td>IV</td>
</tr>
<tr>
<td>10.1 Walking is recommended for individuals who are fully mobile or who have limited mobility (15-20 minutes once or twice a day; or 30-60 minutes daily or 3 to 5 times per week). Ambulating at least 50 feet twice a day is recommended for individuals with limited mobility.</td>
<td>IV</td>
</tr>
<tr>
<td>10.2 For persons unable to walk or who are restricted to bed, exercises such as pelvic tilt, low trunk rotation and single leg lifts are recommended.</td>
<td>IV</td>
</tr>
<tr>
<td>11.0 Evaluate client response and the need for ongoing interventions, through the use of a bowel record that shows frequency, character and amount of bowel movement pattern, episodes of constipation/fecal soiling and use of laxative interventions (oral and rectal). Evaluate client satisfaction with bowel patterns, and client perception of goal achievement related to bowel patterns.</td>
<td>IV</td>
</tr>
<tr>
<td><strong>Education Recommendation</strong></td>
<td></td>
</tr>
<tr>
<td>12.0 Comprehensive education programs aimed at reducing constipation and promoting bowel health should be organized and delivered by a nurse with an interest in or advanced preparation in continence promotion (e.g., Nurse Continence Advisor, Clinical Nurse Specialist, Nurse Clinician). These programs should be aimed at all levels of healthcare provider, clients and family/caregivers. To evaluate the effectiveness of the constipation program, built in evaluation mechanisms such as quality assurance and audits should be included in the planning process.</td>
<td>IV</td>
</tr>
<tr>
<td><strong>Organization &amp; Policy Recommendations</strong></td>
<td></td>
</tr>
<tr>
<td>13.0 Organizations are encouraged to establish an interdisciplinary team approach to prevent and manage constipation.</td>
<td>IV</td>
</tr>
<tr>
<td>14.0 Nursing best practice guidelines can be effectively implemented only where there are adequate planning, resources, organizational and administrative support, as well as the appropriate facilitation of the change process by skilled facilitators. The implementation of the guideline must take into account local circumstances and should be disseminated through an active educational and training program. In this regard, RNAO (through a panel of nurses, researchers and administrators) has developed the <em>Toolkit: Implementation of Clinical Practice Guidelines</em>, based on available evidence, theoretical perspectives and consensus. The Toolkit is recommended for guiding the implementation of the RNAO Nursing Best Practice Guideline <em>Prevention of Constipation in the Older Adult Population</em>.</td>
<td>IV</td>
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</table>
Interpretation of Evidence

Levels of Evidence

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from meta-analysis or systematic review of randomized controlled trials.</td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence obtained from at least one randomized controlled trial.</td>
</tr>
<tr>
<td>Ila</td>
<td>Evidence obtained from at least one well-designed controlled study without randomization.</td>
</tr>
<tr>
<td>Iib</td>
<td>Evidence obtained from at least one other type of well-designed quasi-experimental study, without randomization.</td>
</tr>
<tr>
<td>III</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.</td>
</tr>
</tbody>
</table>

Responsibility for Guideline Development

The Registered Nurses’ Association of Ontario (RNAO), with funding from the Government of Ontario, has embarked on a multi-year program of nursing best practice guideline development, pilot implementation, evaluation and dissemination. One of the areas of emphasis is on prevention of constipation in the older population. This guideline was originally developed in 2002 and subsequently revised in 2005 by a panel of nurses and researchers convened by the RNAO and conducting its work independent of any bias or influence from the Government of Ontario.

Preventing and reducing constipation is viewed to be a key intervention in the prevention and management of urinary incontinence. For this reason, this guideline has been revised in conjunction with the nursing best practice guideline Promoting Continence Using Prompted Voiding (RNAO, 2005). This guideline is available to download from the RNAO website (www.rnao.org/bestpractices), or can be purchased from the RNAO.
Purpose & Scope

The purpose of this guideline is to reduce the frequency and severity of constipation among older adults through the use of adequate hydration and dietary fibre, regular consistent toileting and physical activity. Achieving and maintaining a pattern of normal bowel elimination will prevent constipation, decrease the use of laxatives, and improve the quality of life for older adults. There is no agreed upon definition of constipation in the clinical and research communities (Koch, Voderholzer, Klauser & Muller-Lissner, 1997). Some authors maintain that defining constipation on the basis of symptoms is misguided (Probert, Emmett & Heaton, 1995).

This guideline has relevance in all areas of clinical practice, including acute care, community care and long-term care. However, the recommendations should be implemented cautiously with clients who drink less than 1.5 litres of fluid a day, or for those with a neurogenic bowel disorder (lower motor neuron disease). It does not apply to those clients with medical conditions for whom a restricted fluid intake is prescribed, nor for those who receive enteral feedings, nor for those who are palliative or receiving narcotic analgesics. It is important to address the need for treatment of acute constipation and fecal impaction before implementing this guideline.

The guideline focuses its recommendations on four areas: (1) Practice Recommendations to support the nurse and nursing practice; (2) Educational Recommendations to support the competencies required for nursing practice; (3) Organization and Policy Recommendations directed at practice settings and the environment to facilitate nursing practice; and (4) Evaluation and monitoring indicators.

This best practice guideline contains recommendations for Registered Nurses (RNs) and Registered Practical Nurses (RPNs). It is acknowledged that effective client care depends on a coordinated interdisciplinary approach incorporating ongoing communication between health professionals and clients, ever mindful of the personal preferences and unique needs of each individual client.
In January 2000, a panel of nurses with expertise in practice and research related to constipation and urinary incontinence was established by the RNAO.

The panel searched for published best practice guidelines on preventing constipation. An initial screening was conducted with the following criteria:

- Guideline was in English.
- Guideline was dated no earlier than 1995.
- Guideline was strictly about the topic area.
- Guideline was evidence based (e.g., contained references, description of evidence, sources of evidence).
- Complete guideline was available and accessible for retrieval.

The guidelines were evaluated using the Appraisal Instrument for Canadian Clinical Practice Guidelines, an adapted tool from Cluzeau, Littlejohns, Grimshaw, Feder & Moran (1997). The panel subsequently identified the following three guidelines for use as foundation documents:


A systematic review of pertinent literature was conducted to update the evidence related to prevention of constipation. It is recognized that recommendations related to preventing constipation lack a strong research base. Through a process of consensus and expert opinion, the guideline was developed. Various stakeholder groups, including consumers, staff nurses, physicians, dietitians, and healthcare administrators reviewed the draft guideline, and a list of those stakeholders is included in the front of the guideline. This guideline was further refined after a six month pilot implementation phase in selected practice settings, which were identified through a “request for proposal” process.
Revision Process – 2005

The Registered Nurses’ Association of Ontario (RNAO) has made a commitment to ensure that this best practice guideline is based on the best available evidence. In order to meet this commitment, a monitoring and revision process has been established for each published guideline.

Guideline development staff have reviewed abstracts published in key databases on the topic of prevention of constipation, focusing on systematic reviews, randomized controlled trials (RCTs) and recently published clinical practice guidelines on a quarterly basis since the guideline, Prevention of Constipation in the Older Adult Population, was originally published. The purpose of this review was to identify evidence that may have impacted on the recommendations, requiring a full review prior to the three-year schedule. No evidence of this nature was identified during this ongoing monitoring, and this guideline was reviewed/revised as originally scheduled.

In September of 2004, a panel of nurses with expertise in constipation from a range of practice settings (including institutional, community and academic sectors) was convened by the RNAO. This group was invited to participate as a review panel to revise the Prevention of Constipation in the Older Adult Population guideline that was originally published in January 2002. This panel was comprised of members of the original development panel, as well as other recommended specialists.

The panel members were given the mandate to review the guideline, focusing on the currency of the recommendations and evidence, keeping to the original scope of the document. This work was conducted as follows:

Planning:
- Clinical questions were identified to structure the literature search.
- Search terms were generated with input from the panel team leader for each recommendation in the guideline.
- Literature search was conducted by a health sciences librarian.

Quality Appraisal:
- Search results were reviewed by a Research Assistant assigned to the panel for inclusion/exclusion, related to the clinical questions. See Appendix A for a detailed description of the search strategy.
- Studies/guidelines that met the inclusion/exclusion criteria were retrieved. Quality appraisal and data extraction was conducted by the Research Assistant. These results were summarized and distributed to the panel.

Panel Review:
- Panel members reviewed the data extraction tables, systematic reviews, and where appropriate, original studies and clinical guidelines.
- Recommendations for additional search strategies were identified, as required.
- Through a process of discussion and consensus, recommendations for revision to the guideline were identified.
- The revision panel found that there was no significant new evidence. However, the original recommendations and the discussion of evidence have been updated.
- The original interpretation of evidence (Strength of Evidence A-C) has been modified to reflect the Levels of Evidence (Level Ia-IV) currently utilized by the RNAO.
- Additional appendices are included and may be used as tools to increase uptake of guideline implementation.
**Definition of Terms**

<table>
<thead>
<tr>
<th><strong>Definition</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bowel Diary:</strong> A flow chart that allows documentation of bowel pattern</td>
<td>Frequency of stool, nature of stool, amount), fluid intake, dietary fibre intake, and laxative usage. A bowel diary is used for baseline data which helps determine appropriate intervention and for tracking of the client's response to health measures interventions.</td>
</tr>
<tr>
<td><strong>Bowel Hygiene:</strong> The use of the health measures of adequate fluid and</td>
<td>Dietary intake, timely response to the defecation urge through a consistent toileting schedule, and regular physical activity.</td>
</tr>
<tr>
<td>dietary fibre intake, and laxative usage.</td>
<td></td>
</tr>
<tr>
<td><strong>Clinical Practice Guidelines or Best Practice Guidelines:</strong> Systematically</td>
<td>Developed statements (based on best available evidence) to assist practitioner and client decisions about appropriate healthcare for specific clinical (practice) circumstances (Field &amp; Lohr, 1990).</td>
</tr>
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<td>clinical (practice) circumstances (Field &amp; Lohr, 1990).</td>
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<tr>
<td><strong>Consensus:</strong> A process for making policy decisions, not a scientific method</td>
<td>A process for making policy decisions, not a scientific method for creating new knowledge. At its best, consensus development merely makes the best use of available information, be that of scientific data or the collective wisdom of the participants (Black et al., 1999).</td>
</tr>
<tr>
<td><strong>Constipation (Primary or Idiopathic):</strong> Associated with immobility or</td>
<td>Decreased levels of physical activity, inadequate intake of fluids and dietary fibre, failure to respond to the urge to defecate, chronic use of stimulant laxatives, and increased serum progesterone levels in women (Koch, 1995).</td>
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<tr>
<td>decreased levels of physical activity, inadequate intake of fluids and</td>
<td></td>
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<tr>
<td>dietary fibre, failure to respond to the urge to defecate, chronic use of</td>
<td></td>
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<tr>
<td>stimulant laxatives, and increased serum progesterone levels in women (Koch, 1995).</td>
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</tr>
<tr>
<td><strong>Definition of Multidisciplinary versus Interdisciplinary:</strong> Multidisciplinary</td>
<td>Multidisciplinary and interdisciplinary are terms that have been used interchangeably. However, when one examines the definitions more closely there are subtle differences. Garner's definition of <strong>multidisciplinary</strong> describes the concept of the 'gatekeeper' where one determines which other disciplines are invited to participate in an independent, discipline-specific team that conducts separate assessment, planning and provision of service with little coordination. This process involves independent decision-making rather than coordination of information (Garner, 1995).</td>
</tr>
<tr>
<td>interdisciplinary are terms that have been used interchangeably.</td>
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<tr>
<td><strong>Interdisciplinary</strong> team processes establish collaborative team goals and</td>
<td>Produce a collaborative service plan where team members are involved in problem solving beyond the confines of their discipline (Dyer, 2003).</td>
</tr>
<tr>
<td>produce a collaborative service plan where team members are involved in</td>
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<tr>
<td>problem solving beyond the confines of their discipline (Dyer, 2003).</td>
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</tr>
<tr>
<td>According to the American Heritage Dictionary (2000), multidisciplinary</td>
<td>Multidisciplinary is defined as of, relating to, or making use of several disciplines at once: a multidisciplinary approach to teaching where as it defines interdisciplinary as of, relating to, or involving two or more academic disciplines that are usually considered distinct.</td>
</tr>
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<td>disciplines that are usually considered distinct.</td>
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<td>It is not necessary for every member of a multidisciplinary team to assess</td>
<td>However, the collective knowledge, skills, and clinical experiences of the professional staff should reflect the multidisciplinary expertise necessary to achieve the desired program and client goals.</td>
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<td>each client. However, the collective knowledge, skills, and clinical</td>
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<td>For this guideline, the term interdisciplinary will be used.</td>
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### Dietary Fibre
A natural component of plant products, such as fruit, vegetables and grains. It provides bulk needed by the colon to eliminate body waste. Recommendations for dietary fibre intake vary from 25 to 30 grams per day.

### Education Recommendations
Statements of educational requirements and educational approaches/strategies for the introduction, implementation and sustainability of the best practice guideline.

### Epidemiological Data
Gathering of information that deals with the incidence, distribution, and control of disease in a population.

### Evidence
“An observation, fact or organized body of information offered to support or justify inferences or beliefs in the demonstration of some proposition or matter at issue” (Madjar & Walton, 2001, p. 28).

### Facilitation
It is a technique by which one person makes things easier for others. Facilitators have a key role to play in helping individuals and teams to understand what they need to change and how they need to change it in order to apply evidence to practice (Rycroft-Malone, Kitson, Harvey, McCormack, Seers, Titchen, et al., 2002).

### Family
Whomever the person defines as being family. Family members can include: parents, children, siblings, neighbours, and/or significant others.

### Hydration Management
The promotion of adequate fluid balance that prevents complications from abnormal or undesired fluid levels (Mentes & The Iowa Veterans Affairs Nursing Research Consortium, 2004). For the purposes of this guideline on reducing and preventing constipation, the focus is on ensuring a level of fluid intake that helps prevent constipation.

### Informal Support
Support and resources provided by persons associated with the individual receiving care. Persons providing informal support can include: family, friends, members of a spiritual community, neighbours, etc.

### Meta-analysis
The use of statistical methods to summarize the results of independent studies, thus providing more precise estimates of the effects of healthcare than those derived from the individual studies included in a review (Alderson, Green & Higgins, 2004).

### Normal Bowel Elimination
Equal to or less than 3 bowel movements per day to one bowel movement daily or at least every other day; soft, brown, formed stool, equal to or greater than 250 ml to 500 ml, with use of laxatives restricted to stool softeners and/or bulk-forming agents (Sisters of Charity of Ottawa Health Services – Nursing Services, 1996).
**Organization & Policy Recommendations:** Statements of conditions required for a practice setting that enable the successful implementation of the best practice guideline. The conditions for success are largely the responsibility of the organization, although they may have implications for policy at a broader government or societal level.

**Practice Recommendations:** Statements of best practice directed at the practice of health care professionals that are evidence based.

**Randomized Controlled Trial:** For the purpose of this guideline, a study in which subjects are assigned to conditions on the basis of chance, and where at least one of the conditions is a control or comparison condition.

**Slow-Transit Constipation:** A primary defect whereby there is slower than normal movement of contents from the proximal to the distal colon and rectum. The basis for slow transit may be dietary or even cultural. It could also have a true pathophysiologic basis, although little is known about these mechanisms. There are two subtypes of slow-transit constipation: (1) colonic inertia, possibly related to decreased numbers of high-amplitude propagated contractions. These peristaltic sequences are thought to be the mechanisms for the mass movement of colonic contents. Thus their absence is expressed as prolonged residence times of fecal residues in the right colon; (2) increased, uncoordinated motor activity in the distal colon that offers a functional barrier or resistance to normal transit. This distinction requires colonic manometry for its definition, although this technique is not generally available and is not appropriate for most patients, except in research settings (Locke III, Pemberton, & Phillips, 2000).

**Stakeholder:** A stakeholder is an individual, group, or organization with a vested interest in the decisions and actions of organizations who may attempt to influence decisions and actions (Baker et al., 1999). Stakeholders include all individuals or groups who will be directly or indirectly affected by the change or solution to the problem. Stakeholders can be of various types, and can be divided into opponents, supporters, and neutrals (Ontario Public Health Association, 1996).

**Systematic Review:** Application of a rigorous scientific approach to the preparation of a review article (National Health and Medical Research Council, 1998). Systematic reviews establish where the effects of healthcare are consistent and research results can be applied across populations, settings, and differences in treatment (e.g., dose); and where effects may vary significantly. The use of explicit, systematic methods in reviews limits bias (systematic errors) and reduces chance effects, thus providing more reliable results upon which to draw conclusions and make decisions (Alderson et al., 2004).

**Toileting:** A planned time for evacuation of stool (30 to 40 minutes after the client’s triggering meal), in a position that approximates the squatting position, and during which time the client is provided sufficient time and privacy (Sisters of Charity of Ottawa Health Services – Nursing Services, 1996).
Background Context

Constipation is a frequent health concern for elderly persons and their care providers across the continuum of healthcare. There is an increasing prevalence of constipation with age, particularly after age 70 (Higgins & Johanson, 2004). Epidemiological data suggests that subjective reports of constipation and habitual laxative use increase with age (Cheskin & Schuster, 1994). It is estimated that anywhere from 30% to 50% of community-dwelling older persons use laxatives regularly and this use increases with institutionalization (Campbell, Busby & Horvath, 1993; Harari, Gurwitz & Minaker, 1993). Epidemiological data provides evidence that both self-reported and true clinical constipation increase with age, despite the absence of physiologic changes in the lower bowel with normal aging (Harari et al., 1993).

Lifestyle factors contributing to constipation include: inadequate levels of fluid intake and dietary fibre (Meza, Peggs & O’Brien, 1984; Neal, 1995; Wrenn, 1989); prolonged and overuse of laxative agents (Neal, 1995; Towers, Burgio, Locher, Merkel, Safaeian & Wald, 1994); ignoring the defecation urge; sedentary lifestyle (Corazziari, Materia, Bausano, Torsoli, Badali, Fanucci & Fraracci, 1987; Donald, Smith, Cruikshank, Elton & Stoddart, 1985; Richards-Hall, Rakel, Karsten, Swansen & Davidson, 1995); and polypharmacy (Towers et al, 1994; Whitehead, Drinkwater, Cheskin, Heller & Schuster, 1989).

Low levels of fluid intake, with increased dietary fibre, increases the risk for constipation/fecal impaction. Strategies aimed at improving the overall hydration level prior to increasing dietary fibre intake, and establishing a consistent toileting schedule that supports the defecation reflex, have been shown to have an impact on increasing stool frequency, decreasing fecal incontinence and decreasing the need for laxative intervention. See Appendix B for an algorithm for the prevention of constipation.

This guideline does not apply to those clients with medical conditions for whom a restricted fluid intake is prescribed, nor for clients receiving narcotic analgesics, palliative care, or enteral feedings. It should be used with caution with immobile (bedridden) clients, with those who have restricted toileting or who have a neurogenic bowel (lower motor neuron disease).
Practice Recommendations

Recommendation 1.0
Assess constipation by obtaining a client history. (Level of Evidence = IV)

Discussion of Evidence
Obtaining a detailed history of a person who is constipated is the most essential step in identifying causative etiologic factors (Folden, Backer, Maynard, Stevens, Gilbride, Pires et al., 2002). Since most causes of constipation include imposed immobility, change in toileting habits, dietary changes, medications and stress, a detailed history of onset and associated lifestyle may identify the etiologic factors (Folden et al., 2002; Prather & Ortiz-Camacho, 1998). A bowel history includes:
- A description of usual pattern of bowel movements (frequency, characteristics of stool, usual time for defecation).
- Measures taken to have a bowel movement, inclusive of laxatives (type, amount used), and effectiveness of measures taken.
- Client beliefs about bowel movements.
- History of the problem of constipation (onset and pattern).
- The ability to sense the urge to defecate.

For persons with cognitive impairment, information regarding the client’s behavioural manifestations of the need to have a bowel movement should be obtained from the client’s primary care provider.

Recommendation 2.0
Obtain information regarding:
- Usual amount and type of daily fluid intake with particular attention to the amount of caffeine and alcohol.
- Usual dietary fibre and amount of food ingested.
- Any relevant medical or surgical history which may be related to constipation such as neurological disorders, diabetes, hypothyroidism, chronic renal failure, hemorrhoids, fissures, diverticular disease, irritable bowel syndrome, previous bowel surgery, depression, dementia or acute confusion. (Level of Evidence = IV)

Discussion of Evidence
There is limited evidence in the research literature pertaining to the prevention of constipation and the assessment of persons with constipation. The following discussion is therefore largely based on expert opinion.

Consideration of all factors that place persons at risk is a logical approach for preventing all types of constipation. Physiological conditions increase the probability of constipation. Persons with diabetes mellitus can have a dysfunction of the autonomic nervous system resulting in loss of the gastrocolic reflex. Females, especially multiparas, can have sacral nerve root damage from obstetric trauma while persons with multiple sclerosis have clinical evidence of spinal cord disease that can cause constipation (Chia, Fowler, Kamm, Henry & Lemieux, 1995; Haines, 1995).
Diseases/conditions cited as causing slow transit constipation include: colon cancer, dehydration, diabetes mellitus, hypercalcemia/hypokalemia, immobility, low fibre and hydrocarbohydrate diet, Parkinson's disease and stroke.

While it may not always be possible to eliminate the risk factors (e.g., person with cancer receiving palliative care), prevention is more cost-effective and consistent with quality of life for elders (Gattuso & Kamm, 1994).

**Recommendation 3.0**

Review the client's medications to identify those associated with an increased risk for developing constipation, including chronic laxative use and history of laxative use. *(Level of Evidence = III)*

**Discussion of Evidence**

Antihypertensives, analgesics and antidepressants contribute to constipation through their anticholinergic effects. Medications can have direct or indirect effects on bowel functioning. Constipation is a common adverse effect of many categories of medications, which are therefore a risk factor for constipation. The effects of drugs on the intestinal tract have been primarily identified through clinical drug trials on the various medications (Hert & Huseboe, 1996).

These medications include the following categories:

- Anticholinergics
- Antidepressants
- Anti-emetics
- Anti-histamines
- Anti-hypertensives
- Anti-Parkinson agents
- Anti-psychotics
- Antacids containing aluminum
- Analgesics
- NSAIDs
- Histamine-2 blockers
- Hypnotics
- Diuretics
- Sedatives
- Iron supplements
- Opioid/narcotics
- Laxatives

Prevention of Constipation in the Older Adult Population

### Recommendation 3.1
Screen for risks of polypharmacy, including duplication of both prescription and over-the-counter drugs and their adverse effects. *(Level of Evidence = III)*

### Discussion of Evidence
Polypharmacy is a common predisposing factor for chronic constipation (Folden et al., 2002). Treating people with chronic constipation requires an in-depth history of their bowel patterns, toileting habits, as well as a detailed health assessment, medical and medication history. The client’s prescription and over-the-counter medications must be recorded. Special focus should be given to medications identified as predisposing an individual to constipation (such as opioids) and to current and past use of laxatives, including herbal remedies.

### Recommendation 4.0
Identify the client’s functional abilities related to mobility, eating and drinking, and cognitive status related to abilities to communicate needs, and follow simple instructions. *(Level of Evidence = III)*

### Discussion of Evidence
The incidence of constipation increases in people with diminished functional and cognitive ability and the frail elderly (Campbell et al., 1993; Folden et al., 2002). Identification of the client’s functional and cognitive abilities can lead to staff’s better understanding of the client. Tools to assist with assessing function and cognitive ability can be found in the RNAO guidelines on Screening for Delirium, Dementia and Depression in Older Adults (2003) and Caregiving Strategies for Older Adults with Delirium, Dementia and Depression (2004). Both guidelines are available to download from the RNAO website at [www.rnao.org/bestpractices](http://www.rnao.org/bestpractices).

### Recommendation 5.0
Conduct a physical assessment of the abdomen and rectum. Assess for abdominal muscle strength, bowel sounds, abdominal mass, constipation/fecal impaction, hemorrhoids and intact anal reflex. *(Level of Evidence = IV)*

### Discussion of Evidence
Clinical and expert opinion supports that an appropriate physical assessment includes inspection, auscultation, palpation and percussion of the abdomen to assess functioning of the intestine. A rectal exam is used to assess both the functioning of the anal sphincter and for the presence of fecal matter in the lower rectum. Episodes of acute constipation or fecal impaction must be addressed before implementing this guideline.

Achieving and maintaining a pattern of normal bowel elimination will prevent constipation, decrease the use of laxatives, and improve the quality of life for older adults.
Recommendation 6.0

Prior to initiating the constipation protocol, identify bowel pattern (frequency and character of stool, usual time of bowel movement), episodes of constipation and/or fecal incontinence/soiling, usual fluid and food intake (type of fluids and amounts), and toileting method through use of a 7-day bowel record/diary. (Level of Evidence = IV)

Discussion of Evidence

No specific bowel elimination tool has been researched. Clinical expert opinion would support that having baseline information related to a client’s bowel pattern, symptoms of constipation/fecal impaction, fluid and food intake is the basis for assessment and for care planning (Briggs, 2000; Orr, Johnson & Yates, 1997).

Having accurate baseline data is essential to appropriate assessment, intervention planning and evaluation. Asking clients to recall bowel frequency, amount of fluids ingested or amount of food eaten have been found to be unreliable. Documentation and direct observation through use of a tracking tool such as a 7-day bowel diary is more reliable (Orr et al., 1997). There is supportive literature regarding 24-hour food intake by recall, versus actual observation of food intake which shows that tracking actual amounts of food ingested is much more reliable than asking the client to recall what he or she has taken in over the past day (Orr et al., 1997).

See Appendix C for a sample of bowel elimination record.

Effective client care depends on a coordinated interdisciplinary approach incorporating ongoing communication between health professionals and clients.

Recommendation 7.0

Fluid intake should be between 1500-2000 milliliters (ml) per day. Encourage client to take sips of fluid throughout the day and whenever possible minimize caffeinated and alcoholic beverages. (Level of Evidence = III)

Discussion of Evidence

No randomized controlled trials measuring the effect of various levels of fluid intake on bowel functioning have been carried out. However, low fluid intake (less than 1000 ml/24 hour) has been linked to slow colonic transit and low stool output. Most support for fluid intake of 1.5 litres comes from anecdotal reports and clinical opinion.

Older adults may consume insufficient amounts of fluid that predispose them to constipation (Klauser & Muller-Lissner, 1993). Older persons are at risk for dehydration for a variety of reasons (Hert & Huseboe, 1996). Subclinical dehydration is estimated to be very prevalent in institutionalized older persons.
In the literature available, controversy exists regarding what is an adequate fluid intake, and whether this makes a difference in preventing constipation – 1500 ml fluid intake per day is normally cited as the amount of fluid intake required for normal physiological functioning of the body (Harari et al., 1993; Hogstel & Nelson, 1992). Water is the fluid of choice, although other fluids such as juices are equally beneficial (Gibson, Opalka, Moore, Brady & Mion, 1995; Karam & Nies, 1994; Neal, 1995). Coffee, tea, and alcohol should be avoided due to their diuretic properties (Gibson et al., 1995; Karam & Nies, 1994; Meza et al., 1984; Neal, 1995). At least one study showed that once an individual reached 1500 ml fluid intake/24 hours on a relatively consistent basis, the client started to have normal bowel movements, and at that point could start to be weaned off laxatives (Benton, O’Hara, Chen, Harper & Johnston, 1997).

Coffee, tea and alcohol should be minimized/used in moderation due to their diuretic properties.

**Recommendation 8.0**

Dietary fibre intake should be from 25 to 30 grams of dietary fibre per day. Dietary intake of fibre should be gradually increased once the client has a consistent fluid intake of 1500 ml per 24 hours. Consultation with a dietitian is highly recommended. *(Level of Evidence = III)*

**Discussion of Evidence**

Numerous studies have focused on studying the effectiveness of high fibre in preventing constipation. In a systematic review by Kenny and Skelly (2001), they found that there is no strong or consistent evidence for the effectiveness of treating constipation in institution-dwelling older adults with dietary fibre and this is partly due to weak study design. The authors of the systematic review concluded that trial standards for relevant measures such as dietary fibre source is needed to produce consistent evidence.

Despite the finding from the systematic review by Kenny and Skelly (2001), the guideline revision panel continues to support the recommendation of using fibre to prevent and/or manage constipation. Studies have shown that dietary fibre influences bowel transit time, fecal weight and bowel movement frequency. Dietary fibre is a natural component of plant products such as fruit, vegetables, and grains and adds bulk to fecal matter. As it passes through the colon, it acts as a sponge by absorbing water resulting in bulkier and softer stools. Bulkier and softer stools move through the intestines more quickly allowing easier and more regular bowel movements. Dietary fibre can be classified as insoluble fibre. Insoluble fibre is found in vegetables, whole grains and wheat bran. Insoluble fibre does not dissolve in water and is therefore more effective in preventing constipation. Soluble fibre is found in some beans, certain fruits and vegetables, oat bran and barley. Soluble fibre, when mixed with water, forms a gel and is less effective in constipation prevention (Waldrop & Doughty, 2000).

No studies have clarified the actual amounts of dietary fibre needed to prevent constipation; however, most literature recommends somewhere between 25 to 30 grams of dietary fibre per day are required (Brown & Everett, 1990; Cheskin Kamal, Crowell, Schuster & Whitehead, 1995; Muller-Lissner, 1988), and bowel cancer prevention literature supports this amount. Fibre supplements such as “power puddings”, “fruit spread” recipes and...
other fibre-dense items, which can be used in combination with a high fibre diet, have also been shown to be effective (Brown & Everett, 1990; Gibson et al., 1995; Neal, 1995).

Although increasing dietary fibre may improve stool size and consistency, immobile persons may have difficulty expelling stool. They may also experience rectal stool retention and fecal incontinence, if there is no opportunity or capacity to increase toileting for them. A high fibre diet is contraindicated in immobile persons (bedridden) or persons who do not consume at least 1.5 L of fluids/day (Donald et al., 1985; Kenny & Skelly, 2001).

See Appendix D for dietary fibre values for selected foods; Appendix E for a listing of foods high in fibre; and Appendix F for the “Get up and Go cookies” recipe. Appendix G includes an additional resource on nutrient value of some common food.

**Recommendation 9.0**
Promote regular consistent toileting each day based on the client’s triggering meal. Safeguard the client’s visual and auditory privacy when toileting. *(Level of Evidence = III)*

**Recommendation 9.1**
A squat position should be used to facilitate the defecation process. For clients who are unable to use the toilet (e.g., bed-bound) simulate the squat position by placing the client in left-side lying position while bending the knees and moving the legs toward the abdomen. *(Level of Evidence = III)*

**Discussion of Evidence**
Several studies have examined the effectiveness of toileting in combination with other interventions, but their contribution has not been isolated. Most support for consistent toileting is qualitative. Suppressing the urge to defecate contributes to constipation, and prolonged inhibition can result in progressive ineffectiveness of the defecation reflex. Routine consistent toileting has been found to be beneficial (Gibson et al., 1995). Once a pattern is established, the individual does not need to try for a bowel movement every day if their pattern is every other day or every third day.

The gastrocolic reflex, which results in a mass peristalsis of the gut, is strongest when the stomach is empty. For this reason, breakfast is viewed to be the “triggering meal”, and toileting is suggested 5 to 15 minutes after the triggering meal and as needed (Karam & Nies, 1994). Other literature, however, suggests that toileting should take place 30 to 40 minutes after the triggering meal because of the stimulation of the gastrocolic and duodenocolic reflexes (Folden et al., 2002; Harari et al., 1993; Leslie, 1990). It is especially important to set a consistent defecation time for people with cognitive impairment and depression because they are at high risk to delay defecation (Folden et al., 2002; Harari et al., 1993). For clients who require assistance, such as the bed-bound, it is important to establish toilet times that take into consideration the caregiver’s constraints. This will ensure consistency and caregiver participation (Benton et al., 1997; Folden et al., 2002). It is also important to safeguard the client’s visual and auditory privacy when toileting. A bowel movement in a public facility or in close proximity to others may cause the person to suppress the urge to defecate because of embarrassing sound and smells (Folden et al., 2002; Hall, Karstens, Rakel, Swanson & Davidson, 1995; Waldrop & Doughty, 2000).
Positioning for defecation is considered an important component of the toileting intervention. An upright sitting position facilitates bowel evacuation (Karam & Nies, 1994). Placing the knees higher than the hips in a squat position raises abdominal pressure and helps move the fecal mass into the rectum. If positioning on a toilet, the use of a footstool will help with defecation.

For clients who are bed-bound, the left-side lying position facilitates movement of feces across the transverse colon and into the descending colon (Sharkey & Hanlon, 1989). Bending the legs toward the abdomen facilitates the use of abdominal muscles to help with defecation (Harari et al., 1993; Leslie, 1990; Waldrop & Doughty, 2000).

**Recommendation 10.0**

Physical activity should be tailored to the individual's physical abilities, health condition, personal preference, and feasibility to ensure adherence. Frequency, intensity and duration of exercise should be based on client's tolerance. *(Level of Evidence = IV)*

**Recommendation 10.1**

Walking is recommended for individuals who are fully mobile or who have limited mobility (15-20 minutes once or twice a day; or 30-60 minutes daily or 3 to 5 times per week). Ambulating at least 50 feet twice a day is recommended for individuals with limited mobility. *(Level of Evidence = IV)*

**Recommendation 10.2**

For persons unable to walk or who are restricted to bed, exercises such as pelvic tilt, low trunk rotation and single leg lifts are recommended. *(Level of Evidence = IV)*

**Discussion of Evidence**

Exercise is viewed as an important component of constipation prevention and management programs; however, evidence as to the benefits of exercise has not been conclusive (Folden et al., 2002; Peters, DeVries, Vanberge-Henegouwen & Akkermans, 2001). Research studies into the effectiveness of exercise on preventing constipation has primarily involved small samples of healthy, community-living persons and results have been contradictory. Most studies evaluated physical activity, in combination with adequate fluid intake and dietary fibre. To date, no studies have isolated the contribution of exercise to preventing constipation; however, lack of exercise and poor mobility is associated with constipation (Donald et al., 1985; Everhart, Go, Johannes, Fitzsimmons, Roth & White, 1989; Higgins & Johanson, 2004; Sandler, Jordan & Sheldon, 1990).

Exercise and activity are essential to maintain the musculoskeletal system and the physiological bowel response. It is believed that activity enhances peristalsis and decreased activity slows colonic transit time (Wald, 1990).
Recommendations related to frequency and type of exercise vary. For clients who are fully mobile or those with limited mobility, walking is recommended at varying frequencies of 15-20 minutes, once or twice a day (Karam & Nies, 1994) to 30-60 minutes daily to 3 to 5 times per week (Meshkinpour, Selod, Movahedi, Nami, James & Wilson, 1998; Robertson, Meshkinpour, Vanderberg, James, Cohen & Wilson, 1993; Waldrop & Doughty, 2000).

For persons who are unable to walk or restricted to bedrest, exercise such as pelvic tilt, low trunk rotation and single leg lifts are recommended. Karam and Nies (1994) recommend these types of exercises for 15-20 minutes at least twice a day while Waldrop and Doughty (2000) suggest daily or sitting up in a chair.

**Recommendation 11.0**

Evaluate client response and the need for ongoing interventions, through the use of a bowel record that shows frequency, character and amount of bowel movement pattern, episodes of constipation/fecal soiling and use of laxative interventions (oral and rectal). Evaluate client satisfaction with bowel patterns, and client perception of goal achievement related to bowel patterns.

*(Level of Evidence = IV)*

**Discussion of Evidence**

Literature supports the need to document through a bowel record (see Appendix C), although this is largely based on expert opinion (Hinrichs & Huseboe, 2001). Documentation provides a quick summary of the client's daily and weekly progress (Kim, McFarland & McLane, 1997).

There is evidence of the following achieved outcomes, resulting from interventions based on client reports:

- Modification to diet;
- Increased physical activity;
- Establishment of a toileting routine without the use of suppositories, enemas or oral laxatives;
- Timely responses to urge to defecate;
- Experiences sensation of complete passage of stool;
- Has a soft, formed stool every 2 to 3 days; and
- Rare use of a suppository.

*(Iowa Outcomes Project, 2000; Kim et al., 1997)*

See Appendix C for a sample of bowel elimination record.
**Education Recommendation**

**Recommendation 12.0**

Comprehensive education programs aimed at reducing constipation and promoting bowel health should be organized and delivered by a nurse with an interest in or advanced preparation in continence promotion (e.g., Nurse Continence Advisor, Clinical Nurse Specialist, Nurse Clinician). These programs should be aimed at all levels of healthcare provider, clients and family/caregivers. To evaluate the effectiveness of the constipation program, built in evaluation mechanisms such as quality assurance and audits should be included in the planning process. *(Level of Evidence = IV)*

**Discussion of Evidence**

Literature reveals that very few studies have addressed the role of education in:
- Bowel health.
- Prevention of constipation.
- Utilization of the health measures of hydration and dietary fibre.
- Responding to the urge to defecate in a timely and appropriate manner.

It is clinical expert opinion that supports the recommendation that nurses, other healthcare providers, clients and their families could benefit from education on bowel health. Specific to bowel hygiene care, appropriate topics include:
- The physiology of the bowel and defecation.
- Risks for constipation.
- Health strategies for maximizing bowel function.
- Eradication of false beliefs such as the need for a daily bowel movement.
- Impact of medications on bowel functioning.
- Impact of impaired bowel functioning on bladder emptying, urinary tract infection.
- Effect of prolonged use of laxatives.

Refer to *Appendix G* for a list of resources for constipation information.

The educational program should be provided by a nurse with an interest in, or advanced preparation, in continence care.


**Recommendation 13.0**

Organizations are encouraged to establish an interdisciplinary team approach to prevent and manage constipation. *(Level of Evidence = IV)*

**Discussion of Evidence**

The interdisciplinary care approach to prevent constipation is needed to deal with this health issue. The members of the team may include: nurses, physiotherapists, occupational therapists, clinical pharmacists, registered dietitians, unregulated care providers, attending physicians and specialists. Recognizing overlap in some roles, it is important that the team work together to help in alleviating the client’s problem of constipation.

Physiotherapists assess mobility, transfers, balance and strength. Occupational therapists assess physical and social environments, including each client’s ability to perform the activities of daily living, such as managing clothing and toileting. Clinical pharmacists will assist with the medication review to identify medications that may be contributing to constipation. Registered dietitians will advise regarding dietary modifications to fluid intake, caffeine intake and fibre intake.

Unregulated care providers help with toileting, hygiene and managing incontinence. They are often the first ones to identify problems with constipation. Registered nurses may do initial assessments and develop behavioural treatment plans. Nurse Continence Advisors may do comprehensive second level assessments and develop behavioural treatment plans. Attending physicians may refer to any of the above allied health professionals with assistance in managing incontinence and constipation. They need to be informed of each client’s conservative treatment status after referral. Once an assessment has been completed, clients may require further assessment and medical or surgical treatment by specialists such as urologists and gynaecologists. Communication between health professionals is essential to identify and manage this health issue.
Prevention of Constipation in the Older Adult Population

Recommendation 14.0
Nursing best practice guidelines can be effectively implemented only where there are adequate planning, resources, organizational and administrative support, as well as the appropriate facilitation of the change process by skilled facilitators. The implementation of the guideline must take into account local circumstances and should be disseminated through an active educational and training program. In this regard, RNAO (through a panel of nurses, researchers and administrators) has developed the Toolkit: Implementation of Clinical Practice Guidelines, based on available evidence, theoretical perspectives and consensus. The Toolkit is recommended for guiding the implementation of the RNAO Nursing Best Practice Guideline Prevention of Constipation in the Older Adult Population. (Level of Evidence = IV)

Discussion of Evidence
The Registered Nurses’ Association of Ontario (through a panel of nurses, researchers and administrators) has developed the Toolkit: Implementation of Clinical Practice Guidelines (RNAO, 2002), based on available evidence, theoretical perspectives and consensus. The Toolkit is recommended for guiding the implementation of the RNAO guideline Prevention of Constipation in the Older Adult Population. Successful implementation of best practice guidelines requires the use of a structured, systematic planning process and strong leadership from nurses who are able to transform the evidence-based recommendations into policies and procedures that impact on practice within the organization. This conceptual framework is further supported by Rycroft-Malone and colleagues (2002) who proposed that successful implementation of evidence into practice require the interplay of three key elements: (1) evidence; (2) environmental context; and (3) facilitation.

Please refer to Appendix H for a description of the Toolkit.
Research Gaps & Future Implications

The revision panel, in reviewing the evidence for the update of this guideline, has identified several gaps in the research literature related to prevention of constipation. In considering these gaps, the panel have identified the following priority research areas:

- The effectiveness of dietary fibre, fluid intake, regular consistent toileting and physical activity/exercise/walking in the prevention of constipation.

- The role of the interdisciplinary team in the prevention of constipation.

- The effect of constipation in the older adult’s quality of life.

- The supports required for successful implementation of a bowel and training program.

The above list, although in no way exhaustive, is an attempt to identify and prioritize the enormous amount of research that is needed in this area. Some of the recommendations in the guideline are based on evidence gained from experimental research. Other recommendations are based on consensus or expert opinion. Further substantive research is required to validate the expert opinion. Increasing the research can impact knowledge that will lead to improved practice and outcomes for clients who experience constipation.
**Evaluation & Monitoring of Guideline**

Organizations implementing the recommendations in this nursing best practice guideline are encouraged to consider how the implementation and its impact will be monitored and evaluated. The following table, based on a framework outlined in the RNAO *Toolkit: Implementation of Clinical Practice Guidelines* (2002), illustrates some indicators for monitoring and evaluation.

<table>
<thead>
<tr>
<th>Level of Indicator</th>
<th>Structure</th>
<th>Process</th>
<th>Outcome</th>
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<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>To evaluate the supports available in the organization that allow for nurses to implement the prevention of constipation interventions.</td>
<td>To evaluate the changes in practice that lead towards implementation of the prevention of constipation interventions.</td>
<td>To evaluate the impact of implementation of this guideline.</td>
</tr>
<tr>
<td></td>
<td>To evaluate the supports available in the organization that allow for care providers to implement the guideline.</td>
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<td></td>
</tr>
<tr>
<td><strong>Organization/Unit</strong></td>
<td>Presence of relevant policies and procedures.</td>
<td>Modification to policies and/or procedures consistent with best practice recommendations.</td>
<td>Policies and procedures related to the standard of care expectations consistent with the guideline.</td>
</tr>
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<td></td>
<td>Number and type of learning opportunities.</td>
<td>Development of forms or documentation systems that support documentation of clinical assessment of bowel health and concrete procedures for making referrals when nurses are doing the assessments.</td>
<td>Orientation program includes content related to constipation prevention and management.</td>
</tr>
<tr>
<td></td>
<td>Availability of client education resources that are consistent with best practice recommendations.</td>
<td>Participation rates in learning opportunities and committees.</td>
<td>Referrals internally and externally.</td>
</tr>
<tr>
<td></td>
<td>Identification and provision of appropriate funds/personnel to support implementation and maintenance of practice change.</td>
<td></td>
<td>Staff satisfaction with the process/support provided.</td>
</tr>
<tr>
<td></td>
<td>Continued investment in staff training to provide enhanced high quality care for older adults with constipation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provision of accessible resource people for nurses to consult for ongoing support after the initial implementation period.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Availability of forms to assist with documentation of assessment, intervention, evaluation of nursing interventions related to the prevention of constipation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Indicator</td>
<td>Structure</td>
<td>Process</td>
<td>Outcome</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Nurse</td>
<td>Percentage of full-time, part-time and casual nurses attending the best practice guideline education sessions on the prevention of constipation.</td>
<td>Nurses self-assessed knowledge of bowel assessment: ■ History and physical assessment. ■ Risk factors for constipation. ■ Use of a bowel record/diary. ■ Health measures known to support optimal functioning of the gastrointestinal tract. Percentage of nurses self-reporting adequate knowledge of management strategies and referral sources for clients requiring further investigations. Appropriate documentation of nursing interventions and client responses. Teaching rates for eligible clients. Awareness of, and adherence with relevant policies and procedures.</td>
<td>Evidence of documentation in the client’s record consistent with guideline recommendations: a) Assessment b) Bowel Record c) Plan of Care To have a current plan in place for all clients who are constipated. Evidence of high risk screening and detailed bowel assessment consistent with best practice. Changes in nurses’ knowledge related to prevention of constipation. Changes in nurses’ attitudes and beliefs about their role related to bowel care. Proportion of nurses engaged in client teaching.</td>
</tr>
<tr>
<td>Client/Family</td>
<td>Percentage of clients with constipation and/or fecal impaction.</td>
<td>Percentage of clients and/or families who received education sessions and support for the prevention of constipation.</td>
<td>Reduction in numbers of clients identified to have a problem with constipation with no identified plan of care. Enhanced quality of life for clients. Enhanced client satisfaction with care. Overall resource utilization.</td>
</tr>
</tbody>
</table>
Implementation Strategies

The Registered Nurses’ Association of Ontario and the guideline revision panel have compiled a list of implementation strategies to assist healthcare organizations or healthcare disciplines who are interested in implementing this guideline. A summary of these strategies follows:

- Have at least one dedicated person such as a clinical resource nurse who will provide support, clinical expertise and leadership. The individual should also have good interpersonal, facilitation and project management skills.

- Conduct an organizational needs assessment related to prevention of constipation to identify current knowledge base and further educational requirements.

- Initial needs assessment may include an analysis approach, survey and questionnaire, group format approaches (e.g., focus groups), and critical incidents.

- Establish a steering committee comprised of key stakeholders and interdisciplinary members committed to lead the change initiative. Identify short-term and long-term goals. Keep a work plan to track activities, responsibilities and timelines.

- Create a vision to help direct the change effort and develop strategies for achieving and sustaining the vision.

- Program design should include:
  - Target population;
  - Goals and objectives;
  - Outcome measures;
  - Required resources (human resources, facilities, equipment); and
  - Evaluation activities.

- Provide educational sessions and ongoing support for implementation, a core education session ranging from 2.0 to 3.5 hours in length which reviews the problem of constipation and how to prevent it. The education session should draw on the recommendation contained in this guideline. The education sessions may consist of presentations, facilitator’s guide, handouts, and case studies. Binders, posters and pocket cards may be used as ongoing reminders of the training. Plan education sessions that are interactive, include problem solving, address issues of immediate concern and offer opportunities to practice new skills (Davies & Edwards, 2004).

- Provide organizational support such as having the structures in place to facilitate the implementation. For example, hiring replacement staff so participants will not be distracted by concerns about work and having an organizational philosophy that reflects the value of best practices through policies and procedures. Develop new assessment and documentation tools (Davies & Edwards, 2004).

- Implement this guideline with one or two clients at a time.
Identify and support designated best practice champions on each unit to promote and support implementation. Celebrate milestones and achievements, acknowledging work well done (Davies & Edwards, 2004).

Organizations implementing this guideline should adopt a range of self-learning, group learning, mentorship and reinforcement strategies that will, over time, build the knowledge and confidence of nurses in implementing this guideline.

Teamwork, collaborative assessment and treatment planning with the client and family and through interdisciplinary work are beneficial. It is essential to be cognizant of and to tap the resources that are available in the community. An example would be linking and developing partnerships with regional geriatric programs for referral process.

The RNAO's Advanced/Clinical Practice Fellowship (ACPF) Project is another resource where registered nurses in Ontario may apply for a fellowship and have an opportunity to work with a mentor who has clinical expertise in prevention and management of constipation. With the ACPF, the nurse fellow will also have the opportunity to learn more about new resources.

In addition to the tips mentioned above, the RNAO has developed resources that are available on the website. A Toolkit for implementing guidelines can be helpful if used appropriately. A brief description about this Toolkit can be found in Appendix H. A full version of the document in pdf format is also available at the RNAO website, www.rnao.org/bestpractices.
Process for Update/Review of Guideline

The Registered Nurses’ Association of Ontario proposes to update this nursing best practice guideline as follows:

1. Each nursing best practice guideline will be reviewed by a team of specialists (Review Team) in the topic area every three years following the last set of revisions.

2. During the three-year period between development and revision, RNAO Nursing Best Practice Guidelines program staff will regularly monitor for relevant literature in the field.

3. Based on the results of the monitor, program staff may recommend an earlier revision period. Appropriate consultation with a team of members comprised of original panel members and other specialists in the field will help inform the decision to review and revise the guideline earlier than the three year milestone.

4. Three months prior to the three year review milestone, program staff will commence the planning of the review process by:
   a. Inviting specialists in the field to participate in the Review Team. The Review Team will be comprised of members from the original panel as well as other recommended specialists.
   b. Compiling of feedback received, questions encountered during the dissemination phase as well as other comments and experiences of implementation sites.
   c. Compiling of new clinical practice guidelines in the field, systematic reviews, meta-analysis papers, technical reviews and randomized controlled trial research, and other relevant literature.
   d. Developing detailed work plan with target dates for deliverables.

The revised guideline will undergo dissemination based on established structures and processes.
References


Prevention of Constipation in the Older Adult Population


Hinrichs, M. & Huseboe, J. (2001). Management of constipation evidence-based protocol. In M. G. Titler (Series Ed.), *Series on Evidence-Based Practice for Older Adults*, Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.


Iowa Outcomes Project (2000). In M. Johnson, M. Maas, & S. Moorhead, (Eds.), *Nursing outcomes Classification (NOC)*, (2).


Mentes, J. C. & The Iowa Veterans Affairs Nursing Research Consortium (2004). Evidence-based protocol: Hydration management. In M. G. Titler (Series Ed.), *Series on Evidence-Based Practice for Older Adults*, Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.


38


Registered Nurses’ Association of Ontario (2003). Screening for Delirium, Dementia and Depression in Older Adults. Toronto, Canada: Registered Nurses’ Association of Ontario.

Registered Nurses’ Association of Ontario (2004). Caregiving Strategies for Older Adults with Delirium, Dementia and Depression. Toronto, Canada: Registered Nurses’ Association of Ontario.


Prevention of Constipation in the Older Adult Population

Bibliography


Hinrichs, M. & Huseboe, J. (2001). Management of constipation evidence-based protocol. In M. G. Titler (Series Ed.), Series on Evidence-Based Practice for Older Adults, Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.


Nursing Best Practice Guideline


Appendix A: Search Strategy for Existing Evidence

The search strategy utilized during the revision of this guideline focused on two key areas. One was the identification of new guidelines published on the topic of prevention of constipation since the original guideline was published in 2002, and the second was to identify systematic reviews, and primary studies published in this area from 2001 to 2004.

STEP 1 – DATABASE Search

A database search for existing evidence related to prevention of constipation was conducted by a university health sciences library. An initial search of the Medline, Embase and CINAHL databases for guidelines and studies published from 2001 to 2004 was conducted in August 2004. This search was structured to answer the following clinical questions:

- What are the contributing factors or predictors of constipation in the elderly population?
- How effective are the following in the prevention of constipation:
  - dietary fibre/nutrition
  - fluid intake/hydration
  - physical activity/exercise/walking
- What are successful strategies when implementing educational program for promoting bowel health?
- Does regular consistent toileting each day based on client’s triggering meal prevent constipation?
- What supports are needed to allow for successful implementation of bowel and training program?
- How can nurses and other healthcare providers be educated about constipation prevention and management?
- What should the education program entail?

Detailed search strings developed to address these questions are available on the RNAO website at www.rnao.org/bestpractices.

STEP 2 – Structured Website Search

One individual searched an established list of websites for content related to the topic area in July 2004. This list of sites, reviewed and updated in May 2004, was compiled based on existing knowledge of evidence-based practice websites, known guideline developers, and recommendations from the literature. Presence or absence of guidelines was noted for each site searched as well as date searched. The websites at times did not house a guideline but directed to another website or source for guideline retrieval. Guidelines were either downloaded if full versions were available or were ordered by phone/e-mail.

- Alberta Heritage Foundation for Medical Research – Health Technology Assessment: http://www.ahfmr.ab.ca/hta
- Alberta Medical Association – Clinical Practice Guidelines: http://www.albertadoctors.org
- American College of Chest Physicians: http://www.chestnet.org/guidelines
- American Medical Association: http://www.ama-assn.org
- Bandolier Journal: http://www.jr2.ox.ac.uk/bandolier
Nursing Best Practice Guideline

- Canadian Centre for Health Evidence: [http://www.cche.net/che/home.asp](http://www.cche.net/che/home.asp)
- Canadian Cochrane Network and Centre: [http://cochrane.mcmaster.ca](http://cochrane.mcmaster.ca)
- Canadian Coordinating Office for Health Technology Assessment: [http://www.ccohta.ca](http://www.ccohta.ca)
- Canadian Institute of Health Information: [http://www.chi.ca](http://www.chi.ca)
- Canadian Task Force on Preventive Health Care: [http://www.ctfphc.org](http://www.ctfphc.org)
- Centers for Disease Control and Prevention: [http://www.cdc.gov](http://www.cdc.gov)
- Centre for Evidence-Based Mental Health: [http://cebmh.com](http://cebmh.com)
- Centre for Evidence-Based Nursing: [http://www.york.ac.uk/healthsciences/cebn.htm](http://www.york.ac.uk/healthsciences/cebn.htm)
- Centre for Evidence-Based Pharmacotherapy: [http://www.aston.ac.uk/fhs/teaching/pharmacy/cebp](http://www.aston.ac.uk/fhs/teaching/pharmacy/cebp)
- Centre for Health Evidence: [http://www.cche.net/che/home.asp](http://www.cche.net/che/home.asp)
- Centre for Health Services and Policy Research: [http://www.chspr.ubc.ca](http://www.chspr.ubc.ca)
- Cochrane Database of Systematic Reviews: [http://www.update-software.com/cochrane](http://www.update-software.com/cochrane)
- Database of Abstracts of Reviews of Effectiveness (DARE): [http://www.york.ac.uk/inst/crd/darehp.htm](http://www.york.ac.uk/inst/crd/darehp.htm)
- Evidence-based On-Call: [http://www.eboncall.org](http://www.eboncall.org)
- Guidelines Advisory Committee: [http://gacguidelines.ca](http://gacguidelines.ca)
- Institute for Clinical Evaluative Sciences: [http://www.ices.on.ca](http://www.ices.on.ca)
- Institute of Child Health: [http://www.ich.ucl.ac.uk/ich](http://www.ich.ucl.ac.uk/ich)
- Netting the Evidence: A SchARR Introduction to Evidence-Based Practice on the Internet: [http://www.shef.ac.uk/scharr/ir/netting](http://www.shef.ac.uk/scharr/ir/netting)
- NHS Centre for Reviews and Dissemination: [http://www.york.ac.uk/inst/crd](http://www.york.ac.uk/inst/crd)
- NHS Nursing & Midwifery Practice Development Unit: [http://www.nmpdu.org](http://www.nmpdu.org)
- NIH Consensus Development Program: [http://consensus.nih.gov/about/about.htm](http://consensus.nih.gov/about/about.htm)
- Queen's University at Kingston: [http://post.queensu.ca/~bhc/gim/cpgs.html](http://post.queensu.ca/~bhc/gim/cpgs.html)
- Royal College of General Practitioners: [http://www.rccgp.org.uk](http://www.rccgp.org.uk)
- Royal College of Physicians: [http://www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)
- Sarah Cole Hirsh Institute – Online Journal of Issues in Nursing: [http://fhb.cwru.edu/HirshInstitute](http://fhb.cwru.edu/HirshInstitute)
- Scottish Intercollegiate Guidelines Network: [http://www.sign.ac.uk](http://www.sign.ac.uk)
Prevention of Constipation in the Older Adult Population

- SUMSearch: [http://sumsearch.uthscsa.edu](http://sumsearch.uthscsa.edu)
- The Qualitative Report: [http://www.nova.edu/ssss/QR](http://www.nova.edu/ssss/QR)
- Trent Research Information Access Gateway: [http://www.shef.ac.uk/scharr/triage/TRIAGEIndex.htm](http://www.shef.ac.uk/scharr/triage/TRIAGEIndex.htm)
- TRIP Database: [http://www.tripdatabase.com](http://www.tripdatabase.com)
- University of California, San Francisco: [http://medicine.ucsf.edu/resources/guidelines/index.html](http://medicine.ucsf.edu/resources/guidelines/index.html)
- University of Laval – Directory of Clinical Information Websites: [http://132.203.128.28/medecine](http://132.203.128.28/medecine)

**STEP 3 – Search Engine Web Search**
A website search for existing practice guidelines on prevention of constipation was conducted via the search engine “Google”, using key search terms. One individual conducted this search, noting the results of the search, the websites reviewed, date and a summary of the results. The search results were further reviewed by a second individual who identified guidelines and literature not previously retrieved.

**STEP 4 – Hand Search/Panel Contributions**
Additionally, panel members were asked to review personal archives to identify guidelines not previously found through the above search strategy. Results of this strategy revealed no additional clinical practice guidelines.

**SEARCH RESULTS:**
The search strategy described above resulted in the retrieval of 409 abstracts on the topic of constipation. These abstracts were then screened by a Research Assistant related to inclusion/exclusion criteria. A total of 35 abstracts were identified for article retrieval and quality appraisal. The quality appraisal was conducted by a Masters prepared nurse with expertise in critical appraisal. The tool used to conduct this work was one developed by the Effective Public Health Practice Project (EPHPP) for appraising quantitative studies.

In addition, three recently published clinical practice guidelines were identified for review. These guidelines included:


Hinrichs, M. & Huseboe, J. (2001). Management of constipation evidence-based protocol. In M. G. Titler (Series Ed.), *Series on Evidence-Based Practice for Older Adults*, Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.

Mentes, J. C. & The Iowa Veterans Affairs Nursing Research Consortium (2004). Evidence-based protocol: Hydration management. In M. G. Titler (Series Ed.), *Series on Evidence-Based Practice for Older Adults*. Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.
Appendix B: Prevention of Constipation – Algorithm

Assessment
✓ Bowel history
✓ Diet history
✓ Medication review
✓ Functional
✓ Cognitive
✓ Physical
✓ 7 day bowel record/diary

Toilet at a consistent time each day.

Increase fluid intake to between 1500-2000 ml/day.

Tailor physical activity.

Increase dietary intake to between 25-30 grams/day.

Evaluate using 7 day bowel record.
### Appendix C: Sample Bowel Elimination Record

**Patient/Client Name:** 

<table>
<thead>
<tr>
<th>Date:</th>
<th>BM</th>
<th>Time</th>
<th>Continent</th>
<th>Nature</th>
<th>Amount</th>
<th>Toilet</th>
<th>Fluid intake</th>
<th>24-hour intake</th>
<th>Fibre intake</th>
<th>Treatment</th>
<th>Referrals/Consults</th>
<th>Total # of BMs</th>
<th># Episodes of constipation/fecal soiling</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

### Nights | Days | Evenings

<table>
<thead>
<tr>
<th>Date:</th>
<th>BM</th>
<th>Time</th>
<th>Continent</th>
<th>Nature</th>
<th>Amount</th>
<th>Toilet</th>
<th>Fluid intake</th>
<th>24-hour intake</th>
<th>Fibre intake</th>
<th>Treatment</th>
<th>Referrals/Consults</th>
<th>Total # of BMs</th>
<th># Episodes of constipation/fecal soiling</th>
<th>Initials</th>
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</tr>
</tbody>
</table>

### Nights | Days | Evenings
<table>
<thead>
<tr>
<th>BM</th>
<th>Time</th>
<th>Continent</th>
<th>Nature</th>
<th>Amount</th>
<th>Toilet</th>
<th>Fluid intake</th>
<th>24-hour intake</th>
<th>Fibre intake</th>
<th>Treatment</th>
<th>Referrals/Consults</th>
<th>Total # of BMs</th>
<th># Episodes of constipation/fecal soiling</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
</tbody>
</table>

**Legend:**
- BM (Bowel Movement): √ Enter time: Continent: √ = Continent; I = Incontinent
- **Amount:** S = small (< 250 ml); M = normal ( > 250 - < 500 ml); L = large ( > 500 ml); FO = oozing; FS = staining
- **Nature:** N = normal (soft, formed, brown stool; not foul smelling); H = hard, dry; W = watery, liquid; P = pasty; B = bulky and unformed
- **Toilet:** T = toilet; C = commode; B = bedpan; SL = side lying
- **Fluid intake:** Record actual amount consumed per shift. Calculate 24-hour intake.
- **Fibre intake:** Record number of fibre items consumed.
- **Treatments:** PRN laxatives, suppositories, enemas, rectal stimulation. Enter time treatment given and initials. Regularly prescribed laxatives are recorded on Medication Administration Record (MAR).
- **Referrals:** D = Dietitian; NCA = Nurse Continence Advisor; OT = Occupational Therapy; P = Pharmacy; PT = Physiotherapy

Enter total # of BMs: Enter total episodes of constipation/fecal soiling:

**Disclaimer:** The above bowel elimination record is developed by the RNAO Guideline Revision panel (2005) and is provided for sample purposes only.
### Appendix D: Dietary Fibre Values for Selected Foods

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Dietary Fibre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cereals, Grains, Pasta</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kellogg's 40% Bran</td>
<td>1/2 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Flakes</td>
<td>1/2 cup</td>
<td>2.9 grams</td>
</tr>
<tr>
<td>Post Raisin Bran</td>
<td>1/3 cup</td>
<td>8.8 grams</td>
</tr>
<tr>
<td>Kellogg's All Bran</td>
<td>1/3 cup</td>
<td>7.8 grams</td>
</tr>
<tr>
<td>Bran Buds</td>
<td>3 tbsp.</td>
<td>1.6 grams</td>
</tr>
<tr>
<td>Grape Nuts</td>
<td>1/2 cup</td>
<td>2.5 grams</td>
</tr>
<tr>
<td>Shredded Wheat</td>
<td>3/4 cup</td>
<td>1.2 grams</td>
</tr>
<tr>
<td>Cheerios</td>
<td>3/4 cup</td>
<td>0.3 grams</td>
</tr>
<tr>
<td>Kellogg's Cornflakes</td>
<td>3/4 cup</td>
<td>0.9 grams</td>
</tr>
<tr>
<td>Rice Krispies</td>
<td>3/4 cup</td>
<td>1.8 grams</td>
</tr>
<tr>
<td>Wheaties</td>
<td>1/2 cup</td>
<td>0.5 grams</td>
</tr>
<tr>
<td>Cream of Wheat</td>
<td>1/2 cup</td>
<td>1.9 grams</td>
</tr>
<tr>
<td>Oats (instant, quick)</td>
<td>1/2 cup</td>
<td>2.1 grams</td>
</tr>
<tr>
<td>Quaker Oat Bran</td>
<td>1/2 cup</td>
<td>0.9 grams</td>
</tr>
<tr>
<td>Spaghetti, hot, firm</td>
<td>1/3 cup</td>
<td>0.5 grams</td>
</tr>
<tr>
<td>Rice, white</td>
<td>1/3 cup</td>
<td>1.6 grams</td>
</tr>
<tr>
<td>Rice, brown</td>
<td>1/3 cup</td>
<td>1.6 grams</td>
</tr>
<tr>
<td><strong>Dried beans, peas, lentils</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kidney beans, canned</td>
<td>1/3 cup</td>
<td>3.8 grams</td>
</tr>
<tr>
<td>White beans, cooked</td>
<td>1/3 cup</td>
<td>3.8 grams</td>
</tr>
<tr>
<td>Black-eyed peas</td>
<td>1/3 cup</td>
<td>8.2 grams</td>
</tr>
<tr>
<td>Baked peas, canned</td>
<td>1/4 cup</td>
<td>2.9 grams</td>
</tr>
<tr>
<td><strong>Starch vegetables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn, canned</td>
<td>1/2 cup</td>
<td>6.0 grams</td>
</tr>
<tr>
<td>Creamed corn, canned</td>
<td>1/2 cup</td>
<td>5.1 grams</td>
</tr>
<tr>
<td>Corn on the cob, cooked</td>
<td>1 ear (6 inch)</td>
<td>3.6 grams</td>
</tr>
<tr>
<td>Lima beans, canned</td>
<td>1/2 cup</td>
<td>4.4 grams</td>
</tr>
<tr>
<td>Garden peas, frozen</td>
<td>1/2 cup</td>
<td>4.4 grams</td>
</tr>
<tr>
<td>Acorn squash, mashed</td>
<td>3/4 cup</td>
<td>5.3 grams</td>
</tr>
<tr>
<td><strong>Breads</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole wheat bread</td>
<td>1 slice (1 oz.)</td>
<td>1.5 grams</td>
</tr>
<tr>
<td>Rye bread</td>
<td>1 slice (1 oz.)</td>
<td>1.0 grams</td>
</tr>
<tr>
<td>Pumpernickel bread</td>
<td>1 slice (1 oz.)</td>
<td>3.8 grams</td>
</tr>
<tr>
<td>White bread</td>
<td>1 slice (1 oz.)</td>
<td>0.5 grams</td>
</tr>
<tr>
<td>Bagel</td>
<td>1/2 (3 1/2 inch)</td>
<td>0.5 grams</td>
</tr>
<tr>
<td>English muffin</td>
<td>1/2 (3 1/2 inch)</td>
<td>0.8 grams</td>
</tr>
<tr>
<td>Corn tortilla</td>
<td>1 (6 inch)</td>
<td>2.7 grams</td>
</tr>
<tr>
<td><strong>Crackers, snacks</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graham crackers</td>
<td>3 crackers</td>
<td>2.1 grams</td>
</tr>
<tr>
<td>Pretzels, sticks or rings</td>
<td>3/4 ounce</td>
<td>1.0 grams</td>
</tr>
<tr>
<td>Ryekrisp</td>
<td>4 crackers</td>
<td>3.0 grams</td>
</tr>
<tr>
<td>Cornbread</td>
<td>1 (2 inch) cube</td>
<td>1.4 grams</td>
</tr>
<tr>
<td>Food</td>
<td>Serving Size</td>
<td>Dietary Fibre</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Asparagus, raw</td>
<td>1 cup</td>
<td>4.6 grams</td>
</tr>
<tr>
<td>Bean sprouts, raw</td>
<td>1 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Broccoli, raw</td>
<td>1 cup</td>
<td>2.8 grams</td>
</tr>
<tr>
<td>Brussels sprouts, cooked</td>
<td>1/2 cup</td>
<td>3.6 grams</td>
</tr>
<tr>
<td>Carrots, raw</td>
<td>1 cup</td>
<td>3.6 grams</td>
</tr>
<tr>
<td>Cauliflower, raw</td>
<td>1 cup</td>
<td>3.0 grams</td>
</tr>
<tr>
<td>Mushrooms, canned</td>
<td>1/2 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Mushrooms, raw</td>
<td>1/2 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Onions, raw</td>
<td>1 cup</td>
<td>5.0 grams</td>
</tr>
<tr>
<td>Peapods, cooked</td>
<td>1/2 cup</td>
<td>2.7 grams</td>
</tr>
<tr>
<td>Sauerkraut, canned</td>
<td>1/2 cup</td>
<td>2.7 grams</td>
</tr>
<tr>
<td>Spinach, canned</td>
<td>1/2 cup</td>
<td>2.6 grams</td>
</tr>
<tr>
<td>Chinese cabbage, raw</td>
<td>1 cup</td>
<td>4.6 grams</td>
</tr>
<tr>
<td>Green onions, raw</td>
<td>1 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Zucchini, raw</td>
<td>1 cup</td>
<td>3.1 grams</td>
</tr>
<tr>
<td>Apple, unpeeled</td>
<td>1 (2 1/4 inch)</td>
<td>2.1 grams</td>
</tr>
<tr>
<td>Applesauce</td>
<td>1/2 cup</td>
<td>2.1 grams</td>
</tr>
<tr>
<td>Blackberries, raw</td>
<td>3/4 cup</td>
<td>6.7 grams</td>
</tr>
<tr>
<td>Blueberries, raw</td>
<td>3/4 cup</td>
<td>3.7 grams</td>
</tr>
<tr>
<td>Nectarine</td>
<td>1 (2 1/2 inch)</td>
<td>3.3 grams</td>
</tr>
<tr>
<td>Pears, canned</td>
<td>1/2 cup</td>
<td>2.8 kgrams</td>
</tr>
<tr>
<td>Raspberries, raw</td>
<td>1 cup</td>
<td>9.1 grams</td>
</tr>
<tr>
<td>Strawberries</td>
<td>1 1/4 cup</td>
<td>4.1 grams</td>
</tr>
<tr>
<td>Tangerine</td>
<td>2 (2 3/8 inch)</td>
<td>3.4 grams</td>
</tr>
<tr>
<td>Apricots, dried</td>
<td>7 halves</td>
<td>5.8 grams</td>
</tr>
<tr>
<td>Figs, dried</td>
<td>1 1/2</td>
<td>5.2 grams</td>
</tr>
<tr>
<td>Prunes, uncooked</td>
<td>3 medium</td>
<td>4.0 grams</td>
</tr>
<tr>
<td>Raisins</td>
<td>2 tbsp.</td>
<td>1.2 grams</td>
</tr>
</tbody>
</table>

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## Appendix E: Foods High in Fibre

<table>
<thead>
<tr>
<th>Food and serving size</th>
<th>Dietary fibre per serving</th>
<th>Recommended Daily Serving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bread/Starches</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole-grain or rye bread (1 slice)</td>
<td>2 grams</td>
<td>6 servings of bread, starches, and cereals</td>
</tr>
<tr>
<td>Whole grain bagel or pita bread (1/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oat bran muffin (1/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole-wheat crackers (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole-wheat pasta, corn, or peas (1/2 cup)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Popcorn, air-popped (3 cups)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat germ (1 1/2 tbsp.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 grams</td>
<td>Combined with bread and starches</td>
</tr>
<tr>
<td><strong>Cereals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole-grain or bran cereals, cold (1 ounce)</td>
<td>2 grams</td>
<td>3 servings</td>
</tr>
<tr>
<td>Oatmeal, oat bran, or grits (1/2 cup, dry)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4-8 grams</td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Vegetables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooked-asparagus, green beans, broccoli, cabbage, carrots,</td>
<td>2 grams</td>
<td>Optional</td>
</tr>
<tr>
<td>cauliflower, greens, onions, snow peas, spinach, squash,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>canned tomatoes, potato with skin (1/2 cup)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raw-broccoli, cabbage, carrots, cauliflower, tomatoes,</td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td>celery, green peppers, zucchini (1 cup)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple, nectarine, orange, peach, banana (1 medium)</td>
<td>2 grams</td>
<td>2 servings</td>
</tr>
<tr>
<td>Grapefruit, pear (1/2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berries (1 cup)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Beans</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garbanzo, kidney, lentils, lima, split peas, pinto beans,</td>
<td>5 grams</td>
<td>Optional</td>
</tr>
<tr>
<td>(1/2 cup)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Nuts and Seeds</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almonds (10), walnuts (6) peanut butter (1 tbsp), peanuts</td>
<td>2 grams</td>
<td>Optional</td>
</tr>
<tr>
<td>(15), sesame seeds (1 tbsp), sunflower seeds (2 tbsp)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Appendix F: Get Up and Go Cookies

Recipe:
1/2 cup margarine or butter
1 cup brown sugar
1/2 cup prune puree
1 egg
1 cup applesauce – any flavour
2 cups all bran cereal
1 1/2 cups flour
1/2 teaspoon baking soda and 1 teaspoon of cinnamon or other spice to taste

Optional: 1/2 to 1 cup raisins, or chocolate chips, sunflower seeds, nuts.

Directions: In a large bowl, cream margarine with sugar. Add egg, then prune puree, and applesauce, mix well. Add dry ingredients. Mix well. Drop by spoonfuls onto 3 cookie sheets – 12 cookies a sheet. Bake in 350º oven for about 15 minutes. Cool on pans for a few minutes and then remove. Freeze cookies and start with eating 2 cookies a day.

Prune puree: a 375 gram bag = about 50 prunes. Put in small pot with 1 cup of water. Heat on stove top until hot. Cool and mash. Store unused puree in fridge. Add grated lemon rind while cooking for added flavour. Or mash pitted prunes from can with some of the juice or use baby food prune puree.
Each cookie = 80.6 calories, 2.8 gram of fat, 1.67 grams of fibre.

Lower fat recipe
- use 1/4 cup margarine and increase applesauce to 1 1/4 cups.
- use 2 egg whites or egg replacement products such as Eggbeaters® instead of 1 whole egg.
Each cookie = 68.6 calories, 1.4 grams of fat, 1.67 grams of fibre.

Lower sugar/lower fat recipe
- use 1 cup of Sugar Twin® brown or white sugar.
- use unsweetened applesauce.
Each cookie = 62.6 calories, 1.4 grams of fat, 1.67 grams of fibre.

High fibre recipe
- use 3/4 cup whole wheat flour with 3/4 cup white flour OR use 1/2 cup whole wheat with 1/2 cup white with 1/2 cup oatmeal. It may be necessary to increase applesauce by 1/4 to 1/2 cup to make cookies more chewy.
Each cookie = 89.4 calories, 2.8 gram of fat, 1.97 grams of fibre.

Remember:
Fibre absorbs water to soften stool. It is necessary to drink plenty of water, if diet allows, to help these cookies to work.

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Reprinted with permission: Jennifer Skelly, RN, PhD, Associate Professor, McMaster University School of Nursing, Director, Continence Program, St. Joseph's Healthcare, Hamilton, Ontario.
Appendix G: Resources for Constipation Information

The following websites provide information on constipation. These are sample resources only, and are not intended to be a comprehensive listing.

Canadian Celiac Association – www.celiac.ca


Management of Constipation Protocol (The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core) – To order the protocol, access www.nursing.uiowa.edu/centers/gnirc/disseminatecore.htm or e-mail at research-dissemination-core@uiowa.edu


The American Gastroenterological Association – http://www.gastro.org/public/constipation.org
Appendix H: Description of the Toolkit

Toolkit: Implementation of Clinical Practice Guidelines

Best practice guidelines can only be successfully implemented if there are: adequate planning, resources, organizational and administrative support as well as appropriate facilitation. RNAO, through a panel of nurses, researchers and administrators has developed the Toolkit: Implementation of Clinical Practice Guidelines based on available evidence, theoretical perspectives and consensus. The Toolkit is recommended for guiding the implementation of any clinical practice guideline in a healthcare organization.

The Toolkit provides step-by-step directions to individuals and groups involved in planning, coordinating, and facilitating the guideline implementation. Specifically, the Toolkit addresses the following key steps in implementing a guideline:

1. Identifying a well-developed, evidence-based clinical practice guideline
2. Identification, assessment and engagement of stakeholders
3. Assessment of environmental readiness for guideline implementation
4. Identifying and planning evidence-based implementation strategies
5. Planning and implementing evaluation
6. Identifying and securing required resources for implementation

Implementing guidelines in practice that result in successful practice changes and positive clinical impact is a complex undertaking. The Toolkit is one key resource for managing this process.

The Toolkit is available through the Registered Nurses’ Association of Ontario. The document is available in a bound format for a nominal fee, and is also available free of charge from the RNAO website. For more information, an order form or to download the Toolkit, please visit the RNAO website at www.rnao.org/bestpractices.
Supplement Integration

This supplement to the nursing best practice guideline *Prevention of Constipation in the Older Adult Population* is a result of a scheduled revision of the guideline. Additional material has been provided in an attempt to provide the reader with current evidence to support practice. Similar to the original guideline publication, this document needs to be reviewed and applied, based on the specific needs of the organization or practice setting/environment, as well as the needs and wishes of the client. This supplement should be used in conjunction with the guideline as a tool to assist in decision making for individualized client care, as well as ensuring that appropriate structures and supports are in place to provide the best possible care.

Background

In 1999, the best practice guideline on constipation was chosen as a complimentary strategy to prompted voiding. It was considered essential that constipation be addressed first if it was an issue before implementing prompted voiding. When the original guideline was developed, there was enough evidence to support the recommendations however much of it was based on expert opinion. A review of the literature published since 2005 does not suggest dramatic changes to the recommendations within this guideline, but rather suggest some refinements and stronger evidence for our approach. The research evidence supports nursing interventions related to assessment and management of constipation in the older adult.
Revision Process

The Registered Nurses’ Association of Ontario (RNAO) has made a commitment to ensure that this practice guideline is based on the best available evidence. In order to meet this commitment, a regular monitoring and revision process has been established for each guideline.

A panel of nurses was assembled for this review, comprised of members from the original development panel as well as other recommended individuals with particular expertise in this practice area. The revision panel members were given a mandate to review the guideline focusing on the recommendations and the original scope of the guideline.

A structured evidence review based on the scope of the original guideline was conducted to capture the relevant literature and other guidelines published since the last update published in 2005. The results of the evidence review were circulated to members of the review panel. In June 2011, the review panel was convened to reach consensus on the need to revise the existing recommendations in light of the new literature.

Review of Existing Guidelines

One individual searched an established list of websites for guidelines and other relevant content. The website list was compiled based on existing knowledge of evidence-based practice websites and recommendations from the literature.

While the search yielded many results, no original guidelines met the inclusion criteria. One supplement was identified as an update of a guideline that was included in the original guideline:


Literature Review

Concurrent to the guideline review, a search for recent literature relevant to the scope of the guideline was conducted. The search of electronic databases (CINAHL, Medline, and EMBASE) was conducted by a health sciences librarian. A research assistant (Master’s prepared nurse) completed the inclusion/exclusion review, quality appraisal and data extraction of the included articles, and prepared a summary of the literature findings. The comprehensive data tables and reference lists were provided to all review panel members.

Review Findings

A review of the most recent literature since the publication of the last revision (2005) of the original guideline does not support changes to the original recommendations, but rather suggests stronger evidence for our approach to preventing constipation in the older adult population. The revision panel members have also updated some appendices and added one new appendix.
Summary of Evidence

The following content reflects the changes made to the revised publication (2005) based on the consensus of the review panel. Only new or revised content is shown below. The literature review does not support dramatic changes to the recommendations, but rather suggests some refinements and additional evidence for the approach.

Practice Recommendations

<table>
<thead>
<tr>
<th>Recommendation 1</th>
<th>Assess constipation by obtaining a client history.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Evidence: IV</td>
<td>✓</td>
</tr>
</tbody>
</table>

The following paragraphs have been added to the discussion of evidence on page 20 of the guideline to reflect additional literature support:

Discussion of Evidence

Stool frequency, stool quality, straining and incomplete evacuation continue to be important areas of assessment. Marfil, Davies & Dettmar (2005) assessed the prevalence of straining and its association with stool frequency. Choung et al. (2007) defined chronic constipation as the self report of 2 to 4 chronic symptoms (straining, hard or lumpy stools, incomplete evacuation, and infrequent stools).

A bowel history includes:
- A description of usual pattern of bowel movements: frequency; quality of stool [using the Bristol Stool Form Scale Appendix D]; and usual time for defecation.
- Measures taken to have a bowel movement, inclusive of laxatives (type, amount used), and effectiveness of measures taken.
- Client beliefs about bowel movements.
- History of the problem of constipation (onset and pattern).
- The ability to sense the urge to defecate.
- Straining to start and to finish when defecating.
- Incomplete evacuation.

As much as asking the right questions during assessment is of critical importance, so too is simply asking the question about whether or not the client has had fecal incontinence or soiling. Those with fecal incontinence more frequently avoided medical care than those with constipation problems (Siproudhis et al., 2007). Constipation and fecal incontinence occur frequently together as Siproudhis et al. (2007) found in their large survey of 10,000 individuals in France.

<table>
<thead>
<tr>
<th>Recommendation 2</th>
<th>Obtain information regarding:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Evidence: IV</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Usual amount and type of daily fluid intake with particular attention to the amount of caffeine and alcohol.
- Usual dietary fibre and amount of food ingested.
- Any relevant medical or surgical history which may be related to constipation such as neurological disorders, diabetes, hypothyroidism, chronic renal failure, hemorrhoids, fissures, diverticular disease, irritable bowel syndrome, previous bowel surgery, depression, dementia or acute confusion.
The paragraphs on page 20 and 21 of the guideline have been revised to reflect additional literature supports and revisions to the wording to enhance accuracy:

### Discussion of Evidence

Consideration of all factors that place persons at risk is a logical approach for preventing all types of constipation. There is some evidence that women (Higgins & Johanson, 2004; McCrea et al., 2009; Richmond & Wright, 2004) and non-Caucasians (Higgins & Johanson, 2004) have higher risk for constipation. Physiological conditions increase the probability of constipation. Persons with diabetes mellitus can have a dysfunction of the autonomic nervous system resulting in loss of the gastrocolic reflex. Females, especially multiparas, can have sacral nerve root damage from obstetric trauma while persons with multiple sclerosis have clinical evidence of spinal cord disease that can cause constipation (Chia, Fowler, Kamm, Henry & Lemieux, 1995; Haines, 1995).

Diseases/conditions cited as causing slow transit constipation include: colon cancer, dehydration, diabetes mellitus, hypercalcemia/hypokalemia, immobility, low fibre and high carbohydrate diet, Parkinson’s disease and stroke.

### Recommendation 3

Review the client’s medications to identify those associated with an increased risk for developing constipation, including chronic laxative use and history of laxative use.

| Level of Evidence: III |

The discussion of evidence on page 21 has been revised to reflect additional literature supports:

### Discussion of Evidence

Iatrogenically induced constipation can often be attributed to the administration of medications for the prevention or alleviation of pathophysiological conditions or their symptoms (Richmond & Wright, 2004). In many cases, discontinuation of these medications may not be feasible. Yet there is scant information addressing the management of medication-associated constipation (DiPalma, Cleveland, McGowan & Herrera, 2007).

The use of medication is a risk factor for constipation (Leung, 2007). A number of therapeutic categories of medications contribute to constipation. All medications can directly or indirectly affect normal bowel function in a variety of ways that include:

- Slowing down peristaltic contractions
- Decreasing neurological stimulation of the bowel
- Decreasing gastric motility
- Decreasing absorption rates
- Limiting general personal mobility

The effects of drugs on the intestinal tract have been primarily identified through clinical drug trials on the various medications (Hert & Huseboe, 1996), and through empirical research as to their contribution to constipation (Richmond & Wright, 2004).

Clinicians should monitor clients for the presence of constipation so that management strategies can be put into place sooner rather than later or preventative strategies can be implemented proactively. The following is a list of categories of medications that may contribute to constipation:
• Analgesics
  ■ Continuous opioid therapy
  ■ Non-opioid therapy: NSAIDS
• Antacids containing aluminum or calcium
• Drugs with Anticholinergic activity, such as:
  ■ Anticonvulsants
  ■ Antidepressants
  ■ Antiepileptics
  ■ Antihistamines
  ■ Antihypertensives (calcium channel blockers, ACE inhibitors, Beta blockers)
  ■ AntiParkinson agents
  ■ Antipsychotics
  ■ Antispasmodics
  ■ Anxiolytics
• Bisphosphonates
• Carbonic anhydrase inhibitors (e.g., Acetazolamide)
• Calcium supplements
• Cytotoxic chemotherapy
  ■ Vinca alkaloid chemotherapy
  ■ Other cytotoxic agents
• Diuretics
• Histamine-2 blockers
• Hypnotics
• Iron supplements
• Laxatives (usually attributed to long term use of stimulant laxatives)
• Lipid-lowering drugs
• Muscle relaxants (e.g., Baclofen)
• Proton pump inhibitors
• Sedatives


Medication list reviewed by: Lawrence D. Jackson, BScPhm
Pharmacy Clinical Coordinator, Veterans Centre
Sunnybrook Health Sciences Centre

**Recommendation 3.1**

Screen for risks of polypharmacy, including duplication of both prescription and over-the-counter drugs and their adverse effects.

*Level of Evidence: III*

*The following paragraph has been added to the discussion of evidence on page 22 of the guideline:*

**Discussion of Evidence:**

In a study on the use of laxatives by Hosia-Randell et al. (2007), concomitant use of seven or more medications, other than laxatives and constipation-inducing drugs, was associated with the need for laxative use. This suggests that the relationship between medication and constipation is more about polypharmacy. The number of medications being used is a significant risk factor for constipation (Higgins, 2004; DiPalma, Cleveland, McGowan, & Herrera, 2007).
Recommendation 4

Identify the client’s functional abilities related to mobility, eating and drinking, and cognitive status related to abilities to communicate needs, and follow simple instructions.

Level of Evidence: III

Discussion of Evidence

Limited mobility is considered part of the risk assessment for constipation (Richmond & Wright, 2004). In a review of the literature on identified risk factors for constipation, these authors report that persons restricted to bed or chair had the highest score on the constipation risk assessment scale.

Malnutrition is common among patients suffering from dementia and is associated with a decrease in functional capabilities (Suominen et al., 2005). The incidence of constipation increases in people with diminished functional and cognitive ability and the frail elderly (Campbell et al., 1993; Folden et al., 2002). Identification of the client’s functional and cognitive abilities can lead to staff’s better understanding of the client. Tools to assist with assessing function and cognitive ability can be found in the RNAO guidelines on Screening for Delirium, Dementia and Depression in Older Adults (2010) and Caregiving Strategies for Older Adults with Delirium, Dementia and Depression (2010). Both guidelines are available to download from the RNAO website at www.rnao.org/bestpractices.

Recommendation 5

Conduct a physical assessment of the abdomen and rectum. Assess for abdominal muscle strength, bowel sounds, abdominal mass, constipation/fecal impaction, hemorrhoids and intact anal reflex.

Level of Evidence: IV

Recommendation 6

Prior to initiating the constipation protocol, identify bowel pattern (frequency and character of stool, usual time of bowel movement), episodes of constipation and/or fecal incontinence/soiling, usual fluid and food intake (type of fluids and amounts), and toileting method through use of a 7-day bowel record/diary.

Level of Evidence: IV

Discussion of Evidence

A specific bowel elimination tool has not been validated. Clinical expert opinion continues to support that having baseline information related to a client’s bowel pattern, symptoms of constipation/fecal impaction, fluid and food intake is the basis for assessment and for care planning (Briggs, 2008; Orr, Johnson & Yates, 1997).

Baseline information on client’s bowel patterns is critical as there is vast diversity in what is considered normal by clients. A large survey of women in the United States found that one daily bowel movement is not always the norm (Zutshi et al., 2007). In addition, clients living in long-term care facilities tend to have less frequent bowel movements than those living in the community (Marfil, Davies & Dettmar, 2005). Persons in institutions also have more incidence of straining at stool (Marfil, Davies & Dettmar, 2005).
### Recommendation 7

| Fluid intake should be between 1500-2000 milliliters (ml) per day. Encourage client to take sips of fluid throughout the day and whenever possible minimize caffeinated and alcoholic beverages. | Level of Evidence: III |

### Discussion of Evidence

The following paragraph has been added to the discussion of evidence on page 23 of the guideline:

No additional studies as of 2011 investigate the effectiveness of fluid intake or hydration alone in the prevention of constipation. A controlled trial by Schnelle et al. (2010) found that a multicomponent intervention that included fluid intake as well as toileting assistance, exercise and improved food intake was effective in reducing constipation. However, it is not possible to determine the effect of fluid intake alone on preventing constipation. A systematic review (Leung, 2007) found conflicting evidence on the effect of fluid intake in the prevention of constipation. Adequate hydration and prevention of dehydration in the elderly has many health benefits and should continue to be supported.

### Recommendation 8

| Dietary fibre intake should be from 21 – 25 grams of dietary fibre per day. Dietary intake of fibre should be gradually increased once the client has a consistent fluid intake of 1500 ml per 24 hours. | Level of Evidence: III |

### Discussion of Evidence

The following paragraphs, with additional literature support, is added to the beginning of the discussion of evidence on page 24 of the guideline:

The adequate intake for dietary fibre is 14g/1000kcal, for the typical long term care (LTC) resident, eating approximately 1500kcal/day. A minimum of 20 grams of fibre per day is recommended by the Ontario Ministry of Health and Long Term Care Standards. However, clients who are immobile may require less dietary fibre and therefore caution should be exercised in increasing dietary fibre for specific groups of bed bound elderly. Consultation with a dietitian is highly recommended.

A randomized controlled trial (Wisten & Messner 2005) found that daily porridge with 7.5 grams of fibre was associated with a higher rate of defecation without laxatives and less discomfort than the control group. Another randomized controlled trial (Hale et al., 2007) found that a natural laxative given twice per day (2.8 grams fibre total per day) resulted in more bowel movements and lower costs of laxative use. A controlled blind parallel trial (Sturtzel et al., 2009) found that the addition of oat bran to the diet of seniors resulted in decreased laxative use.
In addition to dietary fibre, studies are emerging that suggest the potential usefulness of probiotic supplementation in the management of constipation among nursing home residents (Sairanen, Piirainen, Nevala and Korepla, 2007; Carlsson, Gustafson, Haglin, and Eriksson, 2009; An, Baek, Jang, Lee et al., 2010; Chmielewska & Szajewska, 2010). Current studies have shown that the balance of intestinal microflora is improved with probiotic supplementation, which exerts beneficial effects on human health in managing constipation either by decreasing harmful enzymes activities (An et al, 2010) or increasing faecal bulk and softening stool (Sairanen et al., 2007). More evidence, however, from larger controlled trials are required to evaluate with certainty the effect and efficacy of probiotic administration on constipation (Chmielewska & Szajewska, 2010; An et al., 2010).

**Recommendation 9**

Promote regular consistent toileting each day based on the client's triggering meal. Safeguard the client's visual and auditory privacy when toileting.

Level of Evidence: III

**Recommendation 9.1**

A squat position should be used to facilitate the defecation process. For clients who are unable to use the toilet (e.g., bed-bound) simulate the squat position by placing the client in left-side lying position while bending the knees and moving the legs toward the abdomen.

Level of Evidence: III

The following sentences have been added to the end of the first paragraph in the discussion of evidence on page 25 of the guideline:

**Discussion of Evidence**

Schnelle et al. (2009) reported on an observational study to determine the prevalence of constipation symptoms and the effect of a brief toileting assistance trial on constipation. This study revealed that bowel movement frequency increased significantly in long term care residents when provided with toileting assistance every 2 hours or four times daily.

**Recommendation 10**

Physical activity should be tailored to the individual's physical abilities, health condition, personal preference, and feasibility to ensure adherence. Frequency, intensity and duration of exercise should be based on client’s tolerance.

Level of Evidence: IV

**Recommendation 10.1**

Walking is recommended for individuals who are fully mobile or who have limited mobility (15-20 minutes once or twice a day; or 30-60 minutes daily or 3 to 5 times per week). Ambulating at least 50 feet twice a day is recommended for individuals with limited mobility.

Level of Evidence: IV
**Recommendation 10.2**
For persons unable to walk or who are restricted to bed, exercises such as pelvic tilt, low trunk rotation and single leg lifts are recommended.  
Level of Evidence: IV

The following paragraph has been revised on page 26 of the guideline to reflect additional literature supports:

**Discussion of Evidence**
Exercise is viewed as an important component of constipation prevention and management programs; however, no studies have isolated the contribution of exercise in the prevention of constipation (Leung, 2007). Survey research has found that constipation was significantly less common among subjects who performed physical activity regularly or occasionally and higher in those who rated themselves as inactive (Garrigues et al., 2004; Wald et al., 2008). A randomized controlled trial with seniors living in long-term care facilities in the Netherlands, found attendance of twice weekly exercise classes did not affect complaints of constipation (Chin A Paw et al., 2006). The authors acknowledged that a single intervention, such as exercise, is not likely to be effective in the absence of other interventions (Chin A Paw et al., 2006).

**Recommendation 11**
Evaluate client response and the need for ongoing interventions, through the use of a bowel record that shows frequency, character and amount of bowel movement pattern, episodes of constipation/fecal soiling and use of laxative interventions (oral and rectal). Evaluate client satisfaction with bowel patterns, and client perception of goal achievement related to bowel patterns.  
Level of Evidence: IV

Additional Literature Support:  

**Education Recommendations**

**Recommendation 12**
Comprehensive education programs aimed at **early identification of individuals at risk for constipation**, reducing and managing constipation, and promoting bowel health should be organized and delivered by a nurse with an interest in or advanced preparation in continence promotion (e.g., Nurse Continence Advisor, Clinical Nurse Specialist, Nurse Clinician). These programs should be aimed at all levels of healthcare providers, clients and family/caregivers. To evaluate the effectiveness of the constipation program, built in evaluation mechanisms such as quality assurance and audits should be included in the planning process.  
Level of Evidence: IV

The recommendation has been changed with the addition of “early identification of individuals at risk for constipation” and “managing constipation” (bolded). The discussion of evidence on page 28 of the guideline has been revised to reflect additional literature support and the addition of two paragraphs.
Discussion of Evidence

The literature review indicates that very few studies have addressed the role of education in:

• Bowel health
• Early identification of individuals at risk for constipation
• Prevention of constipation
• Utilization of the health measures of exercise, hydration, and dietary fibre
• Responding to the urge to defecate in a timely and appropriate manner.

It is clinical expert opinion that supports the recommendation that nurses, other healthcare providers, clients and their families could benefit from education on bowel health. Specific to bowel hygiene care, appropriate topics include:

• Physiology of the bowel and defecation
• Definition and types of constipation
• Levels of risks for constipation
• Constipation Risk Assessment Tool(s)
• Bowel care of older adults
• Health strategies for maximizing bowel function
• Understanding self reports of constipation from older adults
• Eradication of false beliefs, i.e. need for a daily bowel movement
• Impact of medications on bowel functioning
• Impact of impaired bowel functioning on bladder emptying, urinary tract infection
• Impact of medical conditions on bowel functioning
• Impact of acute hospitalization on bowel functioning
• Effect of prolonged use of laxatives
• Effect of different types of laxatives
• Use of the Bristol Stool Form Scale

In long-term care homes, the appointment of “constipation prevention champions” or resource nurses whose role is to disseminate information and act as a point of contact for any issues relating to constipation, will also help to ensure continued success in the education program, as well as in the prevention and management of constipation (Grainger, Castledine, Wood, & Dilley, 2007).

An educational tool to assist nurses in facilitating educational programs on the topic of constipation can be found in a RNAO resource entitled, Continence-Constipation Workshop for RNs in Long-Term Care: A Facilitator’s Guide (RNAO, 2007). This can be downloaded from the RNAO website at www.rnao.org/bestpractices.

Refer to Appendix H for a list of resources for constipation information.

Additional Literature Supports:
Choung et al., 2007;
DiPalma, Cleveland, McGowan & Herrera, 2007;
Garrigues et al., 2004;
Grieve, 2006;
Higgins et al., 2004;
Iantorno et. al., 2007;
Leung, 2007;
Marfil et al., 2005;
Nakaji et al., 2004;
Richmond & Wright, 2004;
Rosia-Randell et al., 2007;
Wald et al., 2008
## Recommendation 13

Organizations are encouraged to establish an **interprofessional** team approach to prevent and manage constipation.

**Level of Evidence: IV**

*This recommendation has been changed to reflect current terminology, i.e. interprofessional vs. interdisciplinary. The discussion of evidence on page 29 of the guideline has been revised to reflect wording changes and additional literature supports:*

### Discussion of Evidence

Contributing factors for constipation may include functional deficits, mobility problems, environmental barriers, sensory deficits, dietary and hydration problems, chronic disease processes, polypharmacy, mood, cognitive and social issues. Thus, an **interprofessional** team approach to constipation management is recommended. The members of the team may include nurses, physiotherapists, occupational therapists, clinical pharmacists, registered dietitians, unregulated health care providers, attending physicians and specialists.

Physiotherapists assess mobility, transfers, balance and strength. Occupational therapists assess physical and social environments, including each client’s ability to perform the activities of daily living such as managing clothing and toileting. Clinical pharmacists will assist with the medication review to identify medications that may be contributing to constipation. Registered dietitians will advise regarding modifications to fluid intake, caffeine intake and fibre intake.

Front line care providers including unregulated care providers and nurses support hydration, toileting, hygiene, and managing constipation and incontinence. They are often the first ones to identify problems with constipation. Registered nurses may do initial assessments and develop behavioural treatment plans. Attending physicians may refer to any of the above allied health professionals for assistance in managing incontinence and constipation. Physicians identify any serious complications of constipation that require further medical or surgical intervention. Communication between health professionals is essential to identify and manage this health issue.

Appropriate education for all health care providers improves their knowledge and practice in dealing with constipation (Granger et al., 2007).

## Recommendation 14

Nursing best practice guidelines can be effectively implemented only where there are adequate planning, resources, organizational and administrative support, as well as the appropriate facilitation of the change process by skilled facilitators. The implementation of the guideline must take into account local circumstances and should be disseminated through an active educational and training program. In this regard, RNAO (through a panel of nurses, researchers and administrators) has developed the **Toolkit: Implementation of Clinical Practice Guidelines**, based on available evidence, theoretical perspectives and consensus. The **Toolkit** is recommended for guiding the implementation of the RNAO nursing best practice guideline *Prevention of Constipation in the Older Adult Population*.

**Level of Evidence: IV**
Appendices

The appendices have been revised, and reordered with the addition of one NEW appendix as follows:

<table>
<thead>
<tr>
<th>Old Appendix</th>
<th>New Appendix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A: Search Strategy for Existing Evidence</td>
<td>Remains Appendix A; content unchanged</td>
</tr>
<tr>
<td>Appendix B: Prevention of Constipation - Algorithm</td>
<td>Remains Appendix B; content changed</td>
</tr>
<tr>
<td>Appendix C: Sample Bowel Elimination Record</td>
<td>Remains Appendix C; content changed</td>
</tr>
<tr>
<td>Appendix D: Dietary Fibre Values for Selected Foods</td>
<td>New Appendix D: Bristol Stool Form Scale</td>
</tr>
<tr>
<td>Appendix E: Foods High in Fibre</td>
<td>New Appendix E; content changed</td>
</tr>
<tr>
<td>Appendix F: Get up and Go Cookies</td>
<td>New Appendix F; content changed</td>
</tr>
<tr>
<td>Appendix G: Resources for Constipation Information</td>
<td>New Appendix G; content unchanged</td>
</tr>
<tr>
<td>Appendix H: Description of the Toolkit</td>
<td>New Appendix H: additional content</td>
</tr>
<tr>
<td>Appendix I: Resources for Constipation Information</td>
<td>New Appendix I: unchanged</td>
</tr>
<tr>
<td>Appendix F: Get up and Go Cookies</td>
<td>New Appendix G; content unchanged</td>
</tr>
<tr>
<td>Appendix G: Resources for Constipation Information</td>
<td>New Appendix H: additional content</td>
</tr>
<tr>
<td>Appendix H: Description of the Toolkit</td>
<td>New Appendix I: unchanged</td>
</tr>
</tbody>
</table>

The following provides detailed information to the appendices identified above as being changed:

Appendix B: Prevention of Constipation – Algorithm

The following algorithm has been revised to reflect the change in dietary fibre intake:

Assessment
- Bowel history
- Diet history
- Medication review
- Functional
- Cognitive
- Physical
- 7 day bowel record/diary

Toilet at a consistent time each day
Increase fluid intake to between 1500 - 2000 ml/day
Tailor physical activity

Increase dietary fibre to 21 – 25 grams/day
Evaluate using 7 day bowel record
Appendix C: Sample Bowel Elimination Record

The following chart has been revised to reflect the type of stool as defined by the Bristol Stool Form Scale:

Patient/Client Name: __________________________

<table>
<thead>
<tr>
<th>Date:</th>
<th>Nights</th>
<th>Days</th>
<th>Evenings</th>
</tr>
</thead>
<tbody>
<tr>
<td>BM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Legend:**

- **BM (Bowel Movement): ✓ Enter time**
- **Continent:** ✓ = Continent
  I = Incontinent
- **Amount:**
  S = small (< 250 ml)
  M = normal ( > 250 - < 500 ml)
  L = large ( > 500 ml)
  FO = oozing; FS = staining
- **Type:**
  1 = separate hard lumps, hard to pass
  2 = sausage-shaped but lumpy
  3 = like a sausage but with cracks on its surface
  4 = like a sausage or snake, smooth and soft
  5 = soft blobs with clear-cut edges
  6 = fluffy pieces with ragged edges, passed easily, a mushy stool
  7 = watery, no solid pieces, entirely liquid.
- **Toilet:**
  T = toilet
  C = commode
  B = bedpan
  SL = side lying
- **Fluid intake:**
  Record actual amount consumed per shift.
  Calculate 24-hour intake.
- **Fibre intake:**
  Record number of fibre items consumed.
- **Treatments:**
  PRN laxatives, suppositories, enemas, rectal stimulation. Enter time treatment given and initials.
  Regularly prescribed laxatives are recorded on Medication Administration Record (MAR).
- **Referrals:**
  D = Dietitian
  NCA = Nurse Continence Advisor
  OT = Occupational Therapy
  P = Pharmacy
  PT = Physiotherapy
- **Enter total # of BMs:**
- **Enter total episodes of constipation/fecal soiling:**
### Appendix D: Bristol Stool Form Scale

**The Bristol Stool Form Scale**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>Type 3</td>
<td>Like a sausage but with cracks on its surface</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges (passed easily)</td>
</tr>
<tr>
<td>Type 6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>Type 7</td>
<td>Watery, no solid pieces, entirely liquid</td>
</tr>
</tbody>
</table>

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# Appendix E: Dietary Fibre Values for Selected Foods

The following chart replaces the chart found on pages 48 and 49 of the revised guideline:

<table>
<thead>
<tr>
<th>Food Name</th>
<th>Serving size</th>
<th>Weight (g)</th>
<th>Total Dietary Fibre (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breads and Buns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bagel, plain (10 cm diam)</td>
<td>1</td>
<td>71</td>
<td>1.6</td>
</tr>
<tr>
<td>Bread, mixed-grain</td>
<td>1 slice</td>
<td>35</td>
<td>2.2</td>
</tr>
<tr>
<td>Bread, oatmeal</td>
<td>1 slice</td>
<td>35</td>
<td>1.4</td>
</tr>
<tr>
<td>Bread, pita, white (17 cm diam)</td>
<td>1</td>
<td>60</td>
<td>1.3</td>
</tr>
<tr>
<td>Bread, pita, whole wheat (17 cm diam)</td>
<td>1</td>
<td>64</td>
<td>4.7</td>
</tr>
<tr>
<td>Bread, pumpernickel</td>
<td>1 slice</td>
<td>35</td>
<td>2.3</td>
</tr>
<tr>
<td>Bread, raisin</td>
<td>1 slice</td>
<td>35</td>
<td>1.5</td>
</tr>
<tr>
<td>Bread, rye</td>
<td>1 slice</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>Bread, white, commercial</td>
<td>1 slice</td>
<td>35</td>
<td>0.8</td>
</tr>
<tr>
<td>Bread, whole wheat, commercial</td>
<td>1 slice</td>
<td>35</td>
<td>2.4</td>
</tr>
<tr>
<td>English muffin, white, toasted</td>
<td>1</td>
<td>52</td>
<td>1.5</td>
</tr>
<tr>
<td>English muffin, whole wheat, toasted</td>
<td>1</td>
<td>52</td>
<td>2.6</td>
</tr>
<tr>
<td>Roll, dinner, white</td>
<td>1</td>
<td>28</td>
<td>0.9</td>
</tr>
<tr>
<td>Roll, dinner, whole wheat</td>
<td>1</td>
<td>28</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Other Bread Products</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French toast, frozen, ready to heat, heated</td>
<td>1 slice</td>
<td>59</td>
<td>0.6</td>
</tr>
<tr>
<td>Pancake, plain, from complete mix (13 cm diam)</td>
<td>1</td>
<td>40</td>
<td>0.4</td>
</tr>
<tr>
<td>Pancake, plain, frozen, ready-to-heat (13 cm diam), heated</td>
<td>1</td>
<td>41</td>
<td>0.7</td>
</tr>
<tr>
<td><strong>Rice, Pasta and Other Grains</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barley, pearled, cooked</td>
<td>125 mL</td>
<td>83</td>
<td>2</td>
</tr>
<tr>
<td>Couscous, cooked</td>
<td>125 mL</td>
<td>83</td>
<td>0.7</td>
</tr>
<tr>
<td>Quinoa, cooked</td>
<td>125 mL</td>
<td>73</td>
<td>1.3</td>
</tr>
<tr>
<td>Macaroni, cooked</td>
<td>250 mL</td>
<td>148</td>
<td>1.8</td>
</tr>
<tr>
<td>Noodles, egg, cooked</td>
<td>250 mL</td>
<td>169</td>
<td>1.9</td>
</tr>
<tr>
<td>Pasta, fresh-refrigerated, cooked</td>
<td>250 mL</td>
<td>169</td>
<td>3.7</td>
</tr>
<tr>
<td>Rice, brown, long-grain, cooked</td>
<td>125 mL</td>
<td>103</td>
<td>1.5</td>
</tr>
<tr>
<td>Rice, white, long-grain, cooked</td>
<td>125 mL</td>
<td>83</td>
<td>0.4</td>
</tr>
<tr>
<td>Spaghetti, cooked</td>
<td>250 mL</td>
<td>148</td>
<td>2.5</td>
</tr>
<tr>
<td>Spaghetti, whole wheat, cooked</td>
<td>250 mL</td>
<td>148</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Breakfast Cereals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot Cereal, cooked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cream of wheat, regular</td>
<td>175 mL</td>
<td>186</td>
<td>0.7</td>
</tr>
<tr>
<td>Oat bran, cooked</td>
<td>175 mL</td>
<td>179</td>
<td>3.4</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving size</td>
<td>Weight (g)</td>
<td>Total Dietary Fibre (g)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Oatmeal, instant, apple-cinnamon</td>
<td>1 packet</td>
<td>186</td>
<td>2.8</td>
</tr>
<tr>
<td>Oatmeal, instant, regular</td>
<td>1 packet</td>
<td>186</td>
<td>2.7</td>
</tr>
<tr>
<td>Oatmeal, large flakes/quick</td>
<td>175 mL</td>
<td>173</td>
<td>2.6</td>
</tr>
<tr>
<td><strong>Ready-to-eat</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Bran Buds with psyllium, Kellogg’s™</td>
<td>75 mL</td>
<td>27</td>
<td>11.3</td>
</tr>
<tr>
<td>All Bran, Kellogg’s™</td>
<td>125 mL</td>
<td>35</td>
<td>11.8</td>
</tr>
<tr>
<td>Bran Flakes, Post™</td>
<td>250 mL</td>
<td>53</td>
<td>7.4</td>
</tr>
<tr>
<td>Cheerios, regular General Mills™</td>
<td>250 mL</td>
<td>24</td>
<td>2.2</td>
</tr>
<tr>
<td>Corn Bran, Quaker™</td>
<td>250 mL</td>
<td>38</td>
<td>6.1</td>
</tr>
<tr>
<td>Corn Flakes, Kellogg’s™</td>
<td>250 mL</td>
<td>26</td>
<td>0.7</td>
</tr>
<tr>
<td>Fibre 1, General Mills™</td>
<td>125 mL</td>
<td>30</td>
<td>14.1</td>
</tr>
<tr>
<td>Granola with Raisins, Rogers™</td>
<td>125 mL</td>
<td>59</td>
<td>5.3</td>
</tr>
<tr>
<td>Grape-Nuts, Post™</td>
<td>125 mL</td>
<td>58</td>
<td>6.0</td>
</tr>
<tr>
<td>Mini-Wheats with White Frosting, Kellogg’s™</td>
<td>175 mL</td>
<td>35</td>
<td>3.6</td>
</tr>
<tr>
<td>Muesli, President’s Choice™</td>
<td>75 mL</td>
<td>40</td>
<td>3.5</td>
</tr>
<tr>
<td>Oatmeal Crisp Almond, General Mills™</td>
<td>125 mL</td>
<td>32</td>
<td>2.3</td>
</tr>
<tr>
<td>Oatmeal Crisp Maple Walnut, General Mills™</td>
<td>125 mL</td>
<td>32</td>
<td>2.3</td>
</tr>
<tr>
<td>Raisin Bran, Kellogg’s™</td>
<td>250 mL</td>
<td>59</td>
<td>6.7</td>
</tr>
<tr>
<td>Rice Krispies, Kellogg’s™</td>
<td>250 mL</td>
<td>29</td>
<td>0.3</td>
</tr>
<tr>
<td>Shredded Wheat, Post™</td>
<td>1 biscuit</td>
<td>25</td>
<td>3.5</td>
</tr>
<tr>
<td>Shreddies, Post™</td>
<td>175 mL</td>
<td>38</td>
<td>4.4</td>
</tr>
<tr>
<td>Special K, Kellogg’s™</td>
<td>250 mL</td>
<td>24</td>
<td>0.3</td>
</tr>
<tr>
<td>Weetabix™</td>
<td>2 biscuits</td>
<td>35</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>Crackers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese crackers, small</td>
<td>15</td>
<td>15</td>
<td>0.4</td>
</tr>
<tr>
<td>Melba toast, plain</td>
<td>2</td>
<td>10</td>
<td>0.6</td>
</tr>
<tr>
<td>Milk crackers</td>
<td>2</td>
<td>24</td>
<td>0.5</td>
</tr>
<tr>
<td>Rusk toast</td>
<td>1</td>
<td>10</td>
<td>0.6</td>
</tr>
<tr>
<td>Wheat crackers</td>
<td>4</td>
<td>20</td>
<td>1.4</td>
</tr>
<tr>
<td>Wheat crackers, low fat</td>
<td>4</td>
<td>18</td>
<td>0.9</td>
</tr>
<tr>
<td>Whole wheat crackers</td>
<td>4</td>
<td>16</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Beans, Peas and Lentils</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beans, baked, plain or vegetarian, canned</td>
<td>175 mL</td>
<td>188</td>
<td>7.7</td>
</tr>
<tr>
<td>Beans, kidney, dark red, canned, not drained</td>
<td>175 mL</td>
<td>189</td>
<td>12.1</td>
</tr>
<tr>
<td>Beans, navy, canned, not drained</td>
<td>175 mL</td>
<td>194</td>
<td>9.9</td>
</tr>
<tr>
<td>Beans, pinto, canned, not drained</td>
<td>175 mL</td>
<td>178</td>
<td>8.2</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving size</td>
<td>Weight (g)</td>
<td>Total Dietary Fibre (g)</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Black-eyed peas, canned, not drained</td>
<td>175 mL</td>
<td>178</td>
<td>5.9</td>
</tr>
<tr>
<td>Chickpeas (garbanzo beans), canned, not drained</td>
<td>175 mL</td>
<td>178</td>
<td>7.8</td>
</tr>
<tr>
<td>Lentils, boiled, salted</td>
<td>175 mL</td>
<td>146</td>
<td>6.2</td>
</tr>
<tr>
<td>Lentils, pink, boiled</td>
<td>175 mL</td>
<td>179</td>
<td>5.9</td>
</tr>
<tr>
<td>Peas, split, boiled</td>
<td>175 mL</td>
<td>145</td>
<td>4.2</td>
</tr>
<tr>
<td>Soybeans, boiled</td>
<td>175 mL</td>
<td>127</td>
<td>8</td>
</tr>
<tr>
<td><strong>Peanuts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peanut butter, chunk type, fat, sugar and salt added</td>
<td>30 mL</td>
<td>32</td>
<td>2.6</td>
</tr>
<tr>
<td>Peanut butter, natural</td>
<td>30 mL</td>
<td>31</td>
<td>2.5</td>
</tr>
<tr>
<td>Peanut butter, smooth type, fat, sugar and salt added</td>
<td>30 mL</td>
<td>32</td>
<td>1.8</td>
</tr>
<tr>
<td>Peanut butter, smooth type, light</td>
<td>30 mL</td>
<td>36</td>
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</tr>
<tr>
<td><strong>Nuts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almonds, dried</td>
<td>60 mL</td>
<td>36</td>
<td>4.2</td>
</tr>
<tr>
<td>Hazelnuts or filberts, dried</td>
<td>60 mL</td>
<td>34</td>
<td>2.7</td>
</tr>
<tr>
<td>Macadamia nuts, roasted, salted</td>
<td>60 mL</td>
<td>34</td>
<td>0.5</td>
</tr>
<tr>
<td>Mixed nuts, roasted</td>
<td>60 mL</td>
<td>35</td>
<td>2.4</td>
</tr>
<tr>
<td>Pecans, dried</td>
<td>60 mL</td>
<td>25</td>
<td>1.6</td>
</tr>
<tr>
<td>Pine nuts, pignolia, dried</td>
<td>60 mL</td>
<td>34</td>
<td>1.7</td>
</tr>
<tr>
<td>Pistachios, shelled, roasted, salted</td>
<td>60 mL</td>
<td>31</td>
<td>1.7</td>
</tr>
<tr>
<td>Walnuts, dried</td>
<td>60 mL</td>
<td>25</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Nut Butters</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almond butter</td>
<td>30 mL</td>
<td>32</td>
<td>1.2</td>
</tr>
<tr>
<td>Cashew butter</td>
<td>30 mL</td>
<td>32</td>
<td>0.6</td>
</tr>
<tr>
<td>Sesame butter, tahini</td>
<td>30 mL</td>
<td>30</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Seeds</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flaxseeds, whole and ground</td>
<td>15 mL</td>
<td>11</td>
<td>56</td>
</tr>
<tr>
<td>Pumpkin and squash seeds, kernels, dried</td>
<td>60 mL</td>
<td>35</td>
<td>189</td>
</tr>
<tr>
<td>Sunflower seed kernels, roasted, salted</td>
<td>60 mL</td>
<td>32</td>
<td>189</td>
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<tr>
<td><strong>Vegetables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artichoke, boiled, drained</td>
<td>1 medium</td>
<td>120</td>
<td>4.7</td>
</tr>
<tr>
<td>Asparagus, canned, drained</td>
<td>6 spears</td>
<td>108</td>
<td>1.5</td>
</tr>
<tr>
<td>Asparagus, fresh or frozen, boiled, drained</td>
<td>6 spears</td>
<td>90</td>
<td>1.6</td>
</tr>
<tr>
<td>Beans, lima, frozen, boiled, drained</td>
<td>125 mL</td>
<td>95</td>
<td>4</td>
</tr>
<tr>
<td>Beans, snap (green, yellow, Italian), canned, drained</td>
<td>125 mL</td>
<td>71</td>
<td>1.5</td>
</tr>
<tr>
<td>Beans, snap (green, yellow, Italian), fresh or frozen, boiled, drained</td>
<td>125 mL</td>
<td>71</td>
<td>1.9</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving size</td>
<td>Weight (g)</td>
<td>Total Dietary Fibre (g)</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Beets, sliced, boiled, drained</td>
<td>125 mL</td>
<td>90</td>
<td>1.8</td>
</tr>
<tr>
<td>Bok Choy, Pak-Choi, shredded, boiled, drained</td>
<td>125 mL</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td>Broccoli, chopped, boiled, drained</td>
<td>125 mL</td>
<td>82</td>
<td>2</td>
</tr>
<tr>
<td>Cabbage, green, shredded, boiled, drained</td>
<td>125 mL</td>
<td>79</td>
<td>1.3</td>
</tr>
<tr>
<td>Cabbage, red, shredded, raw</td>
<td>125 mL</td>
<td>37</td>
<td>0.8</td>
</tr>
<tr>
<td>Carrots, baby, raw</td>
<td>8</td>
<td>80</td>
<td>1.4</td>
</tr>
<tr>
<td>Carrots, fresh or frozen, boiled, drained</td>
<td>125 mL</td>
<td>77</td>
<td>1.9</td>
</tr>
<tr>
<td>Cauliflower, pieces, boiled, drained</td>
<td>125 mL</td>
<td>66</td>
<td>1.8</td>
</tr>
<tr>
<td>Cauliflower, pieces, raw</td>
<td>125 mL</td>
<td>53</td>
<td>0.9</td>
</tr>
<tr>
<td>Celery, raw</td>
<td>1 stalk</td>
<td>40</td>
<td>0.6</td>
</tr>
<tr>
<td>Corn, sweet, canned, cream style</td>
<td>125 mL</td>
<td>135</td>
<td>1.8</td>
</tr>
<tr>
<td>Cucumber, peeled, raw</td>
<td>4 slices</td>
<td>28</td>
<td>0.2</td>
</tr>
<tr>
<td>Kale, chopped, boiled, drained</td>
<td>125 mL</td>
<td>69</td>
<td>1.4</td>
</tr>
<tr>
<td>Leeks, chopped, boiled, drained</td>
<td>125 mL</td>
<td>55</td>
<td>0.5</td>
</tr>
<tr>
<td>Lettuce, Boston, shredded</td>
<td>250 mL</td>
<td>58</td>
<td>0.6</td>
</tr>
<tr>
<td>Lettuce, iceberg, shredded</td>
<td>250 mL</td>
<td>58</td>
<td>0.7</td>
</tr>
<tr>
<td>Mushrooms, pieces, canned, drained</td>
<td>125 mL</td>
<td>82</td>
<td>2.3</td>
</tr>
<tr>
<td>Mushrooms, white, sliced, stir-fried</td>
<td>125 mL</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>Onions, green (scallion), raw</td>
<td>1 medium</td>
<td>15</td>
<td>0.4</td>
</tr>
<tr>
<td>Parsnip, sliced, boiled, drained</td>
<td>125 mL</td>
<td>82</td>
<td>2.7</td>
</tr>
<tr>
<td>Peas, green, canned, drained</td>
<td>125 mL</td>
<td>90</td>
<td>4</td>
</tr>
<tr>
<td>Peas, green, frozen, boiled, drained</td>
<td>125 mL</td>
<td>85</td>
<td>3.7</td>
</tr>
<tr>
<td>Pepper, sweet, green, sautéed</td>
<td>125 mL</td>
<td>74</td>
<td>1.3</td>
</tr>
<tr>
<td>Potato, baked, flesh</td>
<td>1</td>
<td>156</td>
<td>3.4</td>
</tr>
<tr>
<td>Potato, baked, flesh and skin</td>
<td>1</td>
<td>173</td>
<td>3.8</td>
</tr>
<tr>
<td>Potato, boiled without skin</td>
<td>1</td>
<td>135</td>
<td>1.9</td>
</tr>
<tr>
<td>Potato, boiled, flesh and skin</td>
<td>1</td>
<td>150</td>
<td>2.5</td>
</tr>
<tr>
<td>Potatoes, scalloped, homemade</td>
<td>125 mL</td>
<td>129</td>
<td>2.5</td>
</tr>
<tr>
<td>Pumpkin, canned</td>
<td>125 mL</td>
<td>129</td>
<td>3.8</td>
</tr>
<tr>
<td>Radishes</td>
<td>3 medium</td>
<td>14</td>
<td>0.2</td>
</tr>
<tr>
<td>Spinach, boiled, drained</td>
<td>125 mL</td>
<td>95</td>
<td>2.3</td>
</tr>
<tr>
<td>Spinach, chopped, raw</td>
<td>250 mL</td>
<td>32</td>
<td>0.7</td>
</tr>
<tr>
<td>Sweet potato, baked, peeled after cooking</td>
<td>½</td>
<td>57</td>
<td>1.9</td>
</tr>
<tr>
<td>Tomatoes, canned, stewed</td>
<td>125 mL</td>
<td>135</td>
<td>1.4</td>
</tr>
<tr>
<td>Tomatoes, canned, whole</td>
<td>125 mL</td>
<td>127</td>
<td>1</td>
</tr>
<tr>
<td>Tomatoes, raw</td>
<td>1</td>
<td>123</td>
<td>1.5</td>
</tr>
<tr>
<td>Turnip (white turnip), cubed, boiled, drained</td>
<td>125 mL</td>
<td>82</td>
<td>1.6</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving size</td>
<td>Weight (g)</td>
<td>Total Dietary Fibre (g)</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Vegetables, Asian mix (broccoli, carrots, green beans, &quot;mini corn&quot;, snow peas, sweet red pepper), frozen, boiled, drained</td>
<td>125 mL</td>
<td>74</td>
<td>1.8</td>
</tr>
<tr>
<td>Vegetables, broccoli and cauliflower, frozen, boiled, drained</td>
<td>125 mL</td>
<td>95</td>
<td>2.4</td>
</tr>
<tr>
<td>Vegetables, mixed (corn, lima beans, snap beans, peas, carrots), frozen, boiled, drained</td>
<td>125 mL</td>
<td>96</td>
<td>2.8</td>
</tr>
<tr>
<td>Vegetables, peas and carrots, canned, not drained</td>
<td>125 mL</td>
<td>135</td>
<td>2.7</td>
</tr>
<tr>
<td>Zucchini, raw, slices</td>
<td>4</td>
<td>40</td>
<td>0.4</td>
</tr>
<tr>
<td>Zucchini, sliced, boiled, drained</td>
<td>125 mL</td>
<td>95</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Vegetable Juices and Other Products</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrot juice</td>
<td>125 mL</td>
<td>125</td>
<td>1</td>
</tr>
<tr>
<td>Coleslaw with dressing</td>
<td>125 mL</td>
<td>63</td>
<td>1</td>
</tr>
<tr>
<td>Potato salad</td>
<td>125 mL</td>
<td>132</td>
<td>1.4</td>
</tr>
<tr>
<td>Tomato juice</td>
<td>125 mL</td>
<td>128</td>
<td>0.9</td>
</tr>
<tr>
<td>Tomato juice, without added salt</td>
<td>125 mL</td>
<td>184</td>
<td>0.7</td>
</tr>
<tr>
<td>Tomato sauce for spaghetti, canned</td>
<td>125 mL</td>
<td>132</td>
<td>1.9</td>
</tr>
<tr>
<td>Tomato sauce, canned</td>
<td>125 mL</td>
<td>129</td>
<td>1.9</td>
</tr>
<tr>
<td>Vegetable juice cocktail</td>
<td>125 mL</td>
<td>128</td>
<td>0.7</td>
</tr>
<tr>
<td>Vegetable juice cocktail, low sodium</td>
<td>125 mL</td>
<td>128</td>
<td>1</td>
</tr>
<tr>
<td><strong>Fruits</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple with skin (7 cm.diam)</td>
<td>1</td>
<td>138</td>
<td>2.6</td>
</tr>
<tr>
<td>Applesauce, unsweetened</td>
<td>125 mL</td>
<td>129</td>
<td>1.5</td>
</tr>
<tr>
<td>Apricots, raw</td>
<td>3</td>
<td>105</td>
<td>2.1</td>
</tr>
<tr>
<td>Avocado</td>
<td>½</td>
<td>101</td>
<td>6.7</td>
</tr>
<tr>
<td>Banana</td>
<td>1</td>
<td>118</td>
<td>2.1</td>
</tr>
<tr>
<td>Blackberries</td>
<td>125 mL</td>
<td>76</td>
<td>4</td>
</tr>
<tr>
<td>Blueberries, frozen, unsweetened</td>
<td>125 mL</td>
<td>82</td>
<td>2.6</td>
</tr>
<tr>
<td>Cherries, sweet</td>
<td>10</td>
<td>68</td>
<td>1.4</td>
</tr>
<tr>
<td>Clementine</td>
<td>1</td>
<td>74</td>
<td>1.3</td>
</tr>
<tr>
<td>Fruit cocktail, canned, light syrup pack</td>
<td>125 mL</td>
<td>128</td>
<td>1.3</td>
</tr>
<tr>
<td>Grapefruit, pink or red</td>
<td>½</td>
<td>123</td>
<td>2</td>
</tr>
<tr>
<td>Grapes</td>
<td>20</td>
<td>100</td>
<td>1.2</td>
</tr>
<tr>
<td>Kiwifruit</td>
<td>1</td>
<td>76</td>
<td>2.3</td>
</tr>
<tr>
<td>Lychees (litchis)</td>
<td>10</td>
<td>96</td>
<td>1.2</td>
</tr>
<tr>
<td>Mango</td>
<td>½</td>
<td>104</td>
<td>1.9</td>
</tr>
<tr>
<td>Melon, cantaloupe, cubes</td>
<td>125 mL</td>
<td>85</td>
<td>0.6</td>
</tr>
<tr>
<td>Food Name</td>
<td>Serving size</td>
<td>Weight (g)</td>
<td>Total Dietary Fibre (g)</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>--------------</td>
<td>------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>Melon, honeydew, cubes</td>
<td>125 mL</td>
<td>90</td>
<td>0.7</td>
</tr>
<tr>
<td>Melon, watermelon, cubes</td>
<td>125 mL</td>
<td>80</td>
<td>0.3</td>
</tr>
<tr>
<td>Nectarine</td>
<td>1</td>
<td>136</td>
<td>2.3</td>
</tr>
<tr>
<td>Orange</td>
<td>1</td>
<td>131</td>
<td>2.3</td>
</tr>
<tr>
<td>Papaya, cubes</td>
<td>125 mL</td>
<td>74</td>
<td>1.3</td>
</tr>
<tr>
<td>Peach</td>
<td>1</td>
<td>98</td>
<td>1.9</td>
</tr>
<tr>
<td>Peach, canned slices, light syrup pack</td>
<td>125 mL</td>
<td>133</td>
<td>1.7</td>
</tr>
<tr>
<td>Pear with skin</td>
<td>1</td>
<td>166</td>
<td>5</td>
</tr>
<tr>
<td>Pear, canned halves, light syrup pack</td>
<td>125 mL</td>
<td>133</td>
<td>2.1</td>
</tr>
<tr>
<td>Pineapple, cubes</td>
<td>125 mL</td>
<td>82</td>
<td>1.1</td>
</tr>
<tr>
<td>Plum</td>
<td>1</td>
<td>66</td>
<td>1.1</td>
</tr>
<tr>
<td>Prunes, dried</td>
<td>3</td>
<td>25</td>
<td>1.8</td>
</tr>
<tr>
<td>Prunes, dried, cooked, without added sugar</td>
<td>60 mL</td>
<td>63</td>
<td>3.6</td>
</tr>
<tr>
<td>Raspberries</td>
<td>125 mL</td>
<td>65</td>
<td>4.2</td>
</tr>
<tr>
<td>Strawberries</td>
<td>7</td>
<td>84</td>
<td>1.9</td>
</tr>
<tr>
<td>Tangerine (mandarin), canned, juice pack, drained</td>
<td>125 mL</td>
<td>100</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**Fruit Juices**

<table>
<thead>
<tr>
<th>Fruit Juice</th>
<th>Serving size</th>
<th>Weight (g)</th>
<th>Total Dietary Fibre (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple juice, ready-to-drink, vitamin C added</td>
<td>125 mL</td>
<td>126</td>
<td>0.1</td>
</tr>
<tr>
<td>Cranberry juice, unsweetened, ready-to-drink</td>
<td>125 mL</td>
<td>134</td>
<td>0.1</td>
</tr>
<tr>
<td>Cranberry-apple juice-drink, ready-to-drink, low Calorie, vitamin C added</td>
<td>125 mL</td>
<td>127</td>
<td>0.1</td>
</tr>
<tr>
<td>Grape juice, ready-to-drink, vitamin C added</td>
<td>125 mL</td>
<td>132</td>
<td>0.1</td>
</tr>
<tr>
<td>Grapefruit juice, ready-to-drink, sweetened</td>
<td>125 mL</td>
<td>132</td>
<td>0.1</td>
</tr>
<tr>
<td>Orange juice, frozen, diluted</td>
<td>125 mL</td>
<td>132</td>
<td>0.3</td>
</tr>
<tr>
<td>Orange juice, ready-to-drink</td>
<td>125 mL</td>
<td>132</td>
<td>0.3</td>
</tr>
<tr>
<td>Orange juice, ready-to-drink, refrigerated, vitamin D and calcium added</td>
<td>125 mL</td>
<td>132</td>
<td>0.3</td>
</tr>
<tr>
<td>Prune juice, ready-to-drink</td>
<td>125 mL</td>
<td>135</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Reviewed by Gargi Pannu, RD., M.Sc
Clinical Registered Dietitian
Veteran and Community Centre
Sunnybrook Health Sciences Centre
### Appendix F: Foods High in Fibre

The following chart replaces the chart found on page 50 of the revised guideline:

<table>
<thead>
<tr>
<th>Food and serving sizes</th>
<th>Dietary fibre per serving</th>
<th>Recommended daily serving based on Canada’s Food Guide.</th>
</tr>
</thead>
</table>
| **Breads**  
Whole-grain or rye bread (1 slice)  
Whole grain bagel or pita bread (½)  
Oat bran muffin (½)  
Whole-wheat crackers (4)  
Whole-wheat pasta, corn, or peas (½ cup)  
Popcorn, air-popped (3 cups)  
Wheat germ (1 ½ tbsp.) | 2 grams | 6-7 servings of bread/starches and cereal. |
| **Cereals**  
Whole-grain or bran cereals, cold (1 ounce)  
Oatmeal, oat bran, or grits (¼ cup, dry) | 4-8 grams | Combined with bread and starches |
| **Vegetable**  
Cooked-asparagus, green beans, broccoli, cabbage, carrots, cauliflower, greens, onions, snow peas, spinach, squash, canned tomatoes, potato with skin (¼ cup)  
Raw-broccoli, cabbage, carrots, cauliflower, tomatoes, celery, green peppers, zucchini (1 cup) | 2 grams | 7 servings |
| **Fruits**  
Apple, nectarine, orange, peach, banana (1 medium)  
Grapefruit, pear (½)  
Berries (1 cup) | 2 grams | Combined with vegetables |
| **Beans/legumes**  
Garbanzo, kidney, lentils, lima, split peas, pinto beans (½ cup) | 5 grams | 2-3 |
| **Shelled Nuts, Nut butters and Seeds**  
Almonds (10), walnuts (6) peanut butter (1 tbsp), peanuts (15), sesame seeds (1 tbsp), sunflower seeds (2 tbsp) | 2 grams | Combined with beans |


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Appendix H: Resources for Constipation Information

The following list has been checked and updated with the most current web links and replaces the list found on page 52 of the revised guideline:

Canadian Celiac Association - www.celiac.ca


The American Gastroenterological Association – http://www.gastro.org/

NEW Canadian Association of Gastroenterology - http://www.cag-acg.org/


NEW Canadian Nurse Continence Advisors – http://www.cnca.ca
References


Hinrichs, M. & Huseboe, J. (2001). Management of constipation evidence-based protocol. In M. G. Titler (Series Ed.), Series on Evidence-Based Practice for Older Adults, Iowa City, IA: The University of Iowa College of Nursing Gerontological Nursing Interventions Research Center, Research Translation and Dissemination Core.


Registered Nurses’ Association of Ontario (2010). *Caregiving Strategies for Older Adults with Delirium, Dementia and Depression*. Toronto, Canada: Registered Nurses’ Association of Ontario.

Registered Nurses’ Association of Ontario (2010). *Screening for Delirium, Dementia and Depression in Older Adults*. Toronto, Canada: Registered Nurses’ Association of Ontario.


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