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Editorial

Caring about constipation

Why should continence clinicians care about constipation? Three important reasons are: common physiology, anatomical co-location, and that continence problems and constipation may be concomitant. The urinary bladder and the colon and anorectum share reservoir and evacuation functions. The motor activities of both systems are mainly smooth muscle functions, innervated by the autonomic nervous system, with important input from voluntary skeletal muscle for sphincter functions. The outlet of both systems is through and intimately associated with the pelvic floor. Stigma is an important associated feature of urinary and faecal incontinence, and for an important proportion of people constipation causes faecal incontinence and contributes to urinary incontinence.

There are also major obvious differences between the urinary bladder and colon. The motor function of the bladder is relatively simple. This is compliant filling followed by complete emptying several times a day and, at least in younger adults, no need for night emptying. Colonic motor physiology consists of mixing and low-level propulsive activity and intermittent meal- and exercise-induced major propulsive activity. These mass movements result in reasonably rapid rectal filling, internal smooth muscle sphincter relaxation, and a call-to-stool, followed by voluntary relaxation of the external anal sphincter when defaecation is appropriate. Typically mass movements occur only a few times a day. The reservoir function of the colon and rectum is more flexible than that of the bladder, so that in contrast to urine, faeces can be retained for later evacuation. Urine is always fluid but faeces are typically solid or semi-solid. The minimum obligatory urine production reflects excretion of nitrogenous wastes, about 500 ml in most adult human beings, but urine production is more typically between 1000 and 2000 ml, dependent on circulating volume status and fluid and electrolyte intake. The colon has absorptive capacity, largely driven by aldosterone, the same hormone that causes salt and water absorption in the kidney. The volume of water in a typical daily bowel movement is about 100 ml, compared to the approximately 1500 ml that enters the colon at the ileo-caecal valve; the remainder of faeces consists of bacteria, fat, inorganic matter, and undisgested organic matter. The role of the pelvic floor and other closely related structures is also subtly different. An important part of evacuation of the rectum is relaxation of the puborectalis muscle to help straighten the approximately orthogonal anorectal junction, and allow gravity and abdominal pressure assisted rectal contraction to evacuate in a straight line rather than around the bend. Treating constipation related to pelvic floor dysfunction, as part of treatment of faecal incontinence, may involve teaching relaxation. Treating stress urinary incontinence involves what could loosely be called the opposite: contraction of the pelvic floor muscles.

Constipation can be managed by addressing aspects of normal physiological function. If faecal matter is sufficiently moist, this increases the bulk of the material and lubricates its surface, the former stimulating more colonic motor activity and the latter reducing the friction of moving faecal matter through the colon to the rectum and, in turn, through the anal sphincter. Adequate oral fluid intake promotes appropriate fluid content of faeces by reducing the amount of circulating aldosterone so that relatively less salt and water is absorbed from the colon. Increased ingestion of non-absorbed organic material, typically carbohydrates that are not digested, also increases the bulk and fluid retaining properties of faeces. Colonic bacteria can digest some of this carbohydrate to produce substances which promote colonic motor activity. The well-timed use of a toilet, to take advantage of mass movements; in a quiet, private, comfortable environment, and in a position which promotes straightening of the anorectal angle, are likely to promote regular faecal evacuation and prevent constipation.

The paper about management of constipation in a residential care facility (page 46) is a nice illustration of the physiological approach to management of constipation. Conducting research in this environment is challenging and a further challenge is introducing a multi-modal, patient-based management strategy in a way that may be in conflict with established management methods, and that leads to sustained, improved clinical management and outcomes. While it may be difficult to pinpoint any exact component of the strategy that was associated with a marked reduction in suppository use; the features of the programme were education, a physiologically based treatment strategy, engaging fully with staff, individual and facility monitoring, and strong and consistently enthusiastic champions.

The paper describing the relaxation breathing method (page 38) illustrates the way in which the physiology of the sphincter mechanism may be altered non-invasively and which may, in turn, lead to a positive outcome for those with constipation associated with pelvic floor dysfunction.

An important future challenge for this type of research, improved systems for management of constipation and physiological studies, is to move forward from relatively indirect outcomes, such as suppository use and anal and rectal pressures, to patient-centred outcomes such as health-related quality of life and faecal incontinence.
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Impact of relaxation breathing on the internal anal sphincter in patients with faecal incontinence

Abstract

Faecal incontinence (FI) affects up to 15% of community-dwelling adults. Relaxation breathing has been shown to aid other gastrointestinal problems. This study reports the effect of relaxation breathing on the internal anal sphincter pressure waves in patients with FI. As part of a randomised controlled trial, comparing two exercise regimens, 72 patients with FI and frequency, urgency or incomplete evacuation participated in a holistic biofeedback treatment programme that included instruction of all participants in relaxation breathing. Resting pressures were measured by a catheter in the anal canal with a balloon positioned in the rectal vault inflated to initial sensation value. The means and variances of anorectal pressures were compared before and after training in relaxation breathing. Relaxation breathing statistically significantly decreased the variability of anal canal pressure wave amplitudes for all participants from 17.3 (IQR: 7–37) cm H₂O to 3.4 (IQR: 2–9) cm H₂O, \( P<0.001 \). The variability in participants with post-surgery bowel dysfunction (19) was more pronounced, reducing from 36.2 (IQR: 16–183) to 5.3 (IQR: 1–13) cm H₂O, \( P=0.011 \). It is concluded that relaxation breathing promotes more regular internal anal sphincter pressure wave patterns and as a management technique it may aid in the reduction of incontinent episodes and faecal urgency.

Keywords: Faecal incontinence, relaxation breathing, gastrointestinal motility, anxiety, urgency.

Background

Faecal incontinence (FI) is prevalent in up to 15% of the adult community\(^1\), and many other gastrointestinal symptoms such as vomiting, diarrhoea and abdominal pain are related to disturbed gastrointestinal motility\(^2\). Faecal continence, in part, depends on the correct functioning of the internal anal sphincter (IAS) and the ability of the external anal sphincter (EAS) and pelvic floor muscles to contract – in response to sudden rectal distension or an increase in rectal pressure – to maintain anal canal pressure higher than rectal pressure\(^1\). Patients with FI frequently have low resting and squeeze pressures\(^4\).

The IAS is composed mainly of fatigue-resistant smooth muscle fibres in a 5 mm ring that surrounds the anal canal. Approximately 55% of maximal anal resting pressure is provided by the IAS, 10% as a result of myogenic IAS activity and 45% due to nerve-induced IAS activity. The remaining 45% is provided by the haemorrhoidal plexus (15%) and 30% by the EAS, which is a ring of striated muscular fibres, under voluntary control, surrounding the anus\(^1\). Both sympathetic and parasympathetic branches of the autonomic nervous system (ANS) innervate the IAS\(^4\). Reflex relaxation of the IAS in response to increased pressure in the rectum is known as the rectoanal inhibitory reflex (RAIR)\(^3\). The IAS displays continuous tonicity interspersed with slow and ultra-slow pressure waves\(^6\). High amplitude propagating waves (HAPW) in the rectum have been shown to precede urge-
related incontinent episodes due to relatively lower pressures in the anal canal\textsuperscript{10}. In some patients with reduced intestinal length who have post-surgery bowel dysfunction (PSBD), irregular IAS pressure waves display a wide range of amplitudes and occur more frequently, resulting in loose stool being passed more often, sometimes up to 30 times a day\textsuperscript{11}.

Low amplitude, slow, segmental contractile antegrade or retrograde movement of bowel contents and flatus towards the rectum enables optimum absorption of water, electrolytes and bacterial metabolites and compaction of intestinal contents into faeces\textsuperscript{12}. Cycles of HAPWs occur approximately four to six times per day in the normal colon\textsuperscript{13}, usually after meals. They are often maximal on waking or after the first meal of the day, and precede stool evacuation in 98\% of cases\textsuperscript{10}. Long-term disease or chronic bowel conditions may alter motility patterns due to changes in smooth muscle contractility associated with alterations in the cholinergic, excitatory and inhibitory nonadrenergic/noncholinergic neural control of smooth muscle function\textsuperscript{11}. In patients with PSBD, scar tissue or nerve damage may also result in disturbed motility patterns\textsuperscript{11}.

Breathing not only allows oxygen and carbon dioxide exchange but the breathing technique also affects the body. Shallow or rapid breathing due to anxiety, panic or fear reflects the sympathetic “fight or flight” activity of the ANS, resulting in release of noradrenalin from neurons or adrenaline from the adrenal medullae\textsuperscript{14}. In contrast, relaxation breathing (also known as diaphragmatic breathing) is linked to the “rest and repose” parasympathetic action of the ANS, which promotes homeostasis\textsuperscript{15}. Under normal circumstances, most adults use the thoracic or upper chest breathing technique when upright, and diaphragmatic breathing when sleeping\textsuperscript{16}. However, infants, children under six years of age and animals automatically use diaphragmatic breathing regardless of position\textsuperscript{17,18}.

Concern about incontinent episodes, especially in public, can contribute to stress, anxiety, depression, isolation and reduced quality of life among people with FI\textsuperscript{11}. In some patients with PSBD, irregular IAS pressure waves display a wide range of amplitudes and occur more frequently, resulting in loose stool being passed more often, sometimes up to 30 times a day\textsuperscript{11}.

Clinical experience suggests that regular and frequent practice of relaxation breathing often assists in rapid improvement of bowel symptoms. Furthermore, patients have reported that the use of relaxation breathing in response to rectal urgency improved bowel control and confidence rather than a panic response, and relaxation breathing also promotes more effective expulsion of stool and encourages evacuation without straining\textsuperscript{21}.

During relaxation breathing practice sessions using computer-assisted biofeedback\textsuperscript{11}, the authors observed a change in the IAS pressure waves to smaller amplitude, more regular wave patterns in many patients with PSBD, while patients with very flat (low amplitude) wave patterns prior to relaxation breathing training appeared to develop regular, gentle wave patterns.

This study further investigates the effect of relaxation breathing on anorectal function.

**Methods**

**Participants:** As part of the protocol of a randomised study of two exercise regimens for FI, the results of which have been reported elsewhere\textsuperscript{29}, all study participants undertook relaxation breathing training. The study recruited participants who were at least 18 years of age, not pregnant, without terminal illness, mental illness or ostomy. Participants had symptoms including FI, frequency, urgency or incomplete evacuation and had failed to respond to general practitioner-prescribed advice about diet, medication or standard pelvic floor exercises for six months.

**Procedures:** After consent, participants took part in a five-session holistic biofeedback treatment programme\textsuperscript{5}. In the first session quality of life and FI severity were measured using validated survey tools\textsuperscript{29,31}. Anorectal physiological parameters were assessed in non-sedated participants lying in a left lateral position. A Gaeltec catheter with a single solid state pressure transducer (Gaeltec Ltd., Dunvegan, Isle of Skye, Scotland) was placed in the anal canal and connected to a Neomedix Acquidata System (Acqiprocessor Model No. ML785NM, Acquiamplifier Model No. 601.819) with Uromac/Urotrak (Powerlab v 5.2.2) and anorectal computer programme (Neomedix, Hornsby, Sydney, Australia). Recorded data included mean anal resting pressures (MRP). Figure 1 is an example of a first session pressure trace for one of the participants. Other data recorded were: mean maximum squeeze pressures (MSP), stimulation of

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the RAIR, and rectal volume of initial sensation (VIS), volume of first urge (VFU) and maximum tolerated volume (MTV). Ranges for these measurements in a recent study of healthy people were: MRP 67–124 cm H₂O; MSP 170–300 cm H₂O; VIS 10–26 ml; VFU 55–167 ml; and MTV 135–241 ml[2].

The second session, one week later, taught participants relaxation breathing. Following a review of the previous seven days’ bowel chart and food diary, patients were educated about the advantages and technique of relaxation breathing while seated. In preparation for relaxation breathing training, a small latex balloon positioned in the rectal vault was inflated to the volume producing initial sensation to stimulate awareness, while a catheter positioned in the anal canal and taped to the buttock recorded resting anal pressures. Patients were settled in the supine position, and the computer trace was checked to ensure resting pressure had not been affected by stimulation of the RAIR. The effect of relaxation breathing on the anal resting pressure was recorded during the practice session. The relaxation breathing technique involves slow, steady, free flowing inhalation through the nose using the diaphragm to inflate the lower lungs without moving the shoulders, middle or upper chest or the muscles of the lower abdomen. Without pausing, relaxation of the diaphragm allows slow passive exhalation, followed by the beginning of the next inhalation. Verbal coaching is given quietly when required. A patient’s hand lightly resting on their epigastric area helps to monitor diaphragmatic movement and breathing rate (ideally less than eight breaths per minute). Our patients are taught relaxation breathing in a supine position and are advised to practise for approximately 10 minutes, at least twice a day, either supine or seated comfortably[11].

For this study MRP and variances were calculated from 2400 observations, recorded over one minute, between the second and fourth minute (69 participants), after participants had been instructed in the relaxation breathing technique. Measurements were made with the participant resting comfortably without moving or performing pelvic floor squeezes. Figure 2 shows a
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pressure trace for the same participant’s data shown in Figure 1 during relaxation breathing. For two participants, who took longer to master the relaxation breathing technique, the one-minute data recording from the fifth minute was used. The means and variances of the one-minute relaxation breathing data sets were compared with one-minute MRPs and variances recorded during anorectal function tests in the first session, prior to education about relaxation breathing.

The participants were then randomised into one of two exercise protocols: a regimen of sustained submaximal anal sphincter and pelvic floor muscle exercises group, and an alternative regimen of rapid squeeze exercises and standard submaximal sustained anal sphincter and pelvic floor muscle exercises. The remainder of the study protocol and the results of the randomised trial have been published and this report presents the detailed results of the anorectal physiology in all the study participants before and after the relaxation breathing.

**Statistical analysis:** Anorectal physiological parameters, MRP means and variances for each participant were calculated in MS Excel 2003 and imported into SPSS 17.0 for Windows for analysis. Data are presented as median and interquartile range (IQR). Participant pressure readings (MRP and variances) recorded during anorectal function tests in the first session were compared with one-minute relaxation breathing data sets recorded during relaxation breathing practice in the second session using a paired Wilcoxon’s signed rank test. The Mann-Whitney unpaired test was used to compare differences in pressures by sex and whether participants had PSBD.

Ethics approval was obtained from the Townsville Hospital (47/04) and James Cook University (H1950).

**Results**

The study group had a mean (standard deviation) age of 62.1 (21.1) years, range: 32–82. Nineteen of 72 (26.4%) were male. Twenty participants had previously undergone bowel surgery.

All the participants completed relaxation breathing training. Relaxation breathing data for one participant could not be measured because of intolerance to the latex balloon due to an anal fissure.

### Table 1. Resting pressure during initial anorectal physiological assessment and relaxation breathing.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Mean resting pressure (cm H2O)</th>
<th>P-value</th>
<th>Resting pressure variance (cm H2O)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median (IQR)</td>
<td></td>
<td>Median (IQR)</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>71 (1)</td>
<td>47.1 (31–67)</td>
<td>0.291*</td>
<td>17.3 (7–37)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>18 (1)</td>
<td>60.5 (47–90)</td>
<td>0.697**</td>
<td>48.0 (20–176)</td>
<td>0.048**</td>
</tr>
<tr>
<td>53 (0)</td>
<td>37.9 (29–55)</td>
<td>0.830**</td>
<td>36.2 (16–183)</td>
<td>0.011**</td>
</tr>
<tr>
<td>19 (1)</td>
<td>40.8 (28–69)</td>
<td>0.421**</td>
<td>14.4 (5–26)</td>
<td></td>
</tr>
<tr>
<td>52 (0)</td>
<td>48.5 (34–66)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean # obs</td>
<td>2371 (Std: 96.4)</td>
<td></td>
<td>2371 (Std: 96.4)</td>
<td></td>
</tr>
</tbody>
</table>

RB: Relaxation breathing

PSBD: Post-surgery bowel dysfunction; n: number of participants

IQR: interquartile range

Std= Standard deviation, i.e. 0 for RB practice because every participant had exactly 2400 observations (obs) recorded over one minute

* p-value was measured using the Wilcoxon Rank-Sum test

** Pressure differences were compared by categorical variables of gender and PSBD; p-value was measured using the Mann-Whitney U
Median (IQR) MRP in Session 1 (MRP-1) was 47.1 (31–67) cm H$_2$O, which was not statistically significantly different from session 2 (MRP-2) prior to commencing relaxation breathing practice, 40.2 (24–58), $P=0.291$. The variance of the MRP-1 in participants who had previously undergone bowel surgery was significantly greater than in participants who had not ($P=0.003$). In session 2, the mean resting pressure during relaxation breathing (MRP-RB) of 35.8 (29–46) cm H$_2$O was significantly lower than in MRP-1, $P=0.045$ (Table 1).

Relaxation breathing significantly damped the anal pressure wave amplitude (variance) for all participants ($P<0.001$) with this effect being more pronounced in participants who had undergone bowel surgery (Table 1). Figure 3 shows an example of this in a different participant to Figures 1 and 2. Men had significantly higher pressures, both mean and variances, than women (MRP-1 mean/variance: $P=0.011/P=0.001$; MRP-2: $P=0.010/P=0.015$; RB: $P=0.006/P=0.003$) and the effect of relaxation breathing was greater among men than women ($P=0.048$, Table 1).

In questionnaires conducted at the completion of the programme, 43 (62.3%) participants reported finding relaxation breathing an extremely helpful treatment component; 24 (34.8%) found it very helpful, and 2 (2.9%) participants found it helped a little. Statistical testing found no difference in helpfulness by sex or the presence of PSBD.

**Discussion**

Continence is influenced by factors such as: the integrity of anal sphincters and pelvic floor; rectal capacity and compliance; efficient evacuation; stool volume and consistency; anorectal sensation and sampling; cognitive function; as well as mobility, access to toilet facilities and intestinal motility.

The major findings of this study were that the variance of resting anal pressure for patients with FI decreased during relaxation breathing and those patients with FI following bowel surgery showed a significantly greater reduction of variation in pressure wave amplitude than patients with FI due to other causes.

The gastric motility index (area under the time pressure curve) has previously been used to describe the pressure data; whilst providing a number amenable for statistical analysis, the motility index does not differentiate between different types of pressure waves. The area under the curve could be the same for low amplitude-long wavelength curves as for high amplitude-short wavelength curves. Since pressure data with irregular amplitudes and wavelengths were being compared, the mean and variance were used in this study.

The difference between MRP-1 and MRP-2 was not statistically significant, and may be explained by normal daily fluctuations in IAS pressure and possibly by participants lying in a supine position before and during relaxation breathing practice in session 2, rather than the left lateral position used for anorectal physiological assessment. Sleeping, a very relaxed state in which diaphragmatic breathing is common, produces a reduction in anal resting pressure in healthy volunteers which may explain the differences found between MRP-1/MRP-2 and resting pressures recorded in study participants during relaxation breathing.

Sacral nerve stimulation (SNS), a relatively new treatment option achieving satisfactory results, is increasingly used to...
manage FI\(^7\). SNS improves bowel motility disorders and is beneficial for chronic FI unresponsive to more conservative treatments; however, it is invasive and costly\(^17\). SNS is believed to simultaneously influence all anatomical structures involved in continence or defaecation through low-level electrical stimulation of sacral plexus nerves, although the physiological mechanism is not yet fully understood\(^{18}\). Like SNS, relaxation breathing targets neural pathways; however, it is free, non-invasive, can be practised anywhere by most people regardless of physical ability and has multiple benefits for both body and mind\(^{19-24}\). Information about diaphragmatic breathing is easily accessed on the internet and in the literature, and our relaxation breathing protocol is also available\(^{11}\).

The IAS is supplied by both sympathetic and parasympathetic nerves; however, there is no definitive evidence with regard to the stimulatory or inhibitory role of the ANS on the IAS\(^9\). As our results show, there is an overall regulating effect on pressure waves in the IAS and we hypothesise that relaxation breathing reduces the sympathetic stimulation while activating the parasympathetic action on the IAS (Figure 4).

The main limitation of this study is that the baseline readings were taken in different positions: relaxation breathing training and practice was performed in the supine position, and over time relaxed adults may automatically adopt diaphragmatic breathing in this position; therefore, future studies should evaluate the effect of relaxation breathing on IAS pressures while the person is sitting or standing.

Although we have shown a significant reduction in pressure wave amplitude during practice of relaxation breathing, we do not know how soon after ceasing relaxation breathing the patient’s usual pattern of IAS waves return. We measured pressures at one point in the anal canal; however, it may be more informative to compare whether relaxation breathing regulates rectal pressures in tandem with IAS pressures. The benefits of relaxation breathing have not been tested separately from the other components of the biofeedback therapy programme. Finally, due to the measurement technique used, it is difficult to compare our study with other motility studies. These points will be addressed in follow-up studies.

Another limitation to our study was that we did not control for multiple statistical testing and so some of our statistically significant findings may be due to Type I error rate inflation.

**Conclusions**

This is the first study to provide empirical evidence showing that relaxation breathing regulates pressure waves in the IAS, and so partially explains the benefits seen when this technique is used as part of the treatment of FI.

**References**


Peer review

Improving bowel care in residential aged care facilities

Abstract

In 2006, following concerns about the high number of suppositories used and the perceived need to improve bowel care management in aged care facilities, Ballarat Health Services undertook a pilot quality improvement project in a 30-bed dementia-specific unit with the aim to improve bowel care management. The project reviewed suppository use to manage constipation and set new guidelines for their use. Other interventions to maintain regular bowel motions included nursing assessment to provide individualised care, the introduction of pear juice and oral aperients, and the development of an individual toileting regimen for each resident. The primary outcome measure was suppository usage within the facility. A secondary outcome measure was a survey completed by staff assessing the new bowel care regimen. After 12 months there was a significant reduction in suppository use in the facility, from 130 to 20 per month. Feedback from staff showed support for the changes, recognition of the benefits of preserving residents’ dignity and decreased odour in the unit. This quality project demonstrates that the implementation of evidence-based nursing interventions in a residential aged care facility can enhance residents' quality of life and improve nursing practice.

Keywords: Aged care, bowel care, suppositories, toileting routines, pear juice.

Introduction

A recent Australian survey showed that the average cost of incontinence management in residential aged care is $34.96 per resident per day with a total national expenditure on formal care and incontinence aids of $1.96 billion in 2010. Incontinence can be an embarrassing condition that demeans a person and reduces their quality of life. Although the relationship between quality of life and bowel care is difficult to measure among those diagnosed with dementia, there is an association between constipation and increased aggressive behaviour in people diagnosed with dementia.

The care of nursing home residents who are incontinent is complex and requires the use of continence aids, staff time, allocation of linen, clothing changes and laundry time. Poorly managed faecal incontinence is associated with odour problems in nursing homes. For these reasons, prevention of constipation and management of faecal incontinence should be of prime importance for all who work in residential aged care facilities (RACF). However, as Jirovec and Wells indicate, there is general acceptance of incontinence rather than active nursing intervention in aged care.

Continuous assessment is important to determine the causes of symptoms such as constipation and faecal incontinence and to develop and implement an effective management plan. A toileting programme and use of an incontinence pad for containment is believed to be the most common continence management method for people in RACF who are unable to independently perform toileting tasks.

Ballarat Health Services is a major health care provider in regional Victoria and the Grampians Regional Continence Service operates within it. Ballarat Health Services has 11 RACF accommodating more than 500 residents. The health service is committed to continuous quality improvement; in 2006 a continence nurse consultant (CNC) was employed in Ballarat Health Services RACF to support continence management.
of residents. In reviewing continence management systems, the CNC identified a number of issues in relation to toileting programmes, the use of oral aperients, the use of suppositories and the use of assessment tools to implement individual bowel management plans.

The CNC developed a project plan based on a 2002 best practice bowel care study, which had been established to improve bowel care management in the RACF at Ballarat Health Services. The CNC aimed to support staff and residents of Ballarat Health Services RACF to adhere to the local Clinical Practice Guideline which states; “That residents will maintain a realistic and acceptable bowel elimination pattern with timely identification of those at risk of developing bowel elimination problems”. One facility was chosen as a pilot site for the project. It was planned that, if successful, the project would be rolled out across the health service.

This project aim was to implement a model of bowel care that would reduce the use of aperients including suppositories, not affect the time spent by staff on bowel care, and incorporate pear juice as a supplement to resident diets. Stumm et al. suggest that supplementation with pear juice may be beneficial in normalising long-term bowel function and can be used successfully as a preventative agent with a more long-term effect on bowel function in nursing home populations.

Despite the limited supportive literature regarding quality of life and bowel care in aged care, the intention of the planned intervention was to preserve resident dignity by restoring bowel toileting routines.

Ethics approval was not sought for this project as it was a continuous improvement project and every resident was provided with an enhancement of an existing service. Before starting, the project was discussed within the Quality Governance Group of Ballarat Health Services. This group includes the Residential Aged Care Directors of Nursing. The project was registered on the Ballarat Health Services quality improvement register.

Setting
The setting for the pilot project was a 30-bed high care RACF within Ballarat Health Services caring for 17 men and 13 women aged between 70 and 85 years. All 30 residents had a diagnosis of dementia and 28 had care-resistant behaviours. Half (15), of the residents were ambulant and the other 15 were non-ambulant.

Method
The project was conducted over four phases including: a chart audit; staff focus group; development of a staff education programme; and the implementation of a bowel care regimen that included residents drinking pear juice. The associate nurse unit manager was recruited as the local champion (LC), to oversee the project on site.

Chart audit
During phase one of the project, the CNC, LC and direct care staff reviewed the charts of all 30 residents at the RACF during a retrospective chart audit. The audit reviewed how the bowel elimination observation chart was used to monitor daily bowel habits. The information captured on this chart included date and time of bowel motion, description using the Bristol Stool Form Scale and whether aperients or suppository had been administered. Medication charts were audited to identify constipating medications and the aperients the residents were taking.

Nursing and kitchen staffs were consulted about each resident's dietary and fluid intake and at what time of the day pear juice could be given. It was decided that lunchtime would be best as orange juice was given at breakfast.

Staff focus groups
Phase two consisted of staff focus groups which met fortnightly with the LC and direct care staff to discuss current bowel management regimens and to outline changes to be implemented during the project. These groups were used to discuss the new, suggested individual resident bowel management plans and to negotiate about staff concerns regarding the necessity for suppositories.

Education
Phase three involved the CNC delivering two education sessions to all nursing staff in the facility on the anatomy and physiology of defaecation, normal bowel function and how to assess an individual's bowel elimination. Education included the management of constipation and faecal incontinence, stool consistency according to the Bristol Stool Form Scale, types of aperients and their applications, the importance of bowel charting and the benefits of a toilet sitting routine to assist bowel evacuation. Education also included the importance of recording the date and time of evacuation to assist in the planning of each resident’s bowel regimen. The residents’ dietary requirements were discussed in the sessions. All staff received information handouts to complement the information provided during the education given. This education was reinforced with a fortnightly visit to the unit to review and discuss individual plans.

Implementation strategy
Phase four involved the CNC implementing the best practice standards defined in the Ballarat Constipation Study: The Objective assessment of constipation in the elderly in Residential and
Sub Acute care. The study was conducted in the Residential Aged Care and Subacute units of Ballarat Health Services and resulted in the formulation of Best Practice in Bowel Care Protocols for Ballarat Health Services. These protocols were used in the current project and were introduced under the guidance of the CNC, with the support of the associate nurse unit manager.

Protocols included:

- Diet and fluid: Each resident, unless contraindicated by loose bowel motions, was encouraged to consume one glass (200mls) of pear juice daily, with lunch, as a regular dietary supplement.
- Toileting: Each resident was assisted to sit on the toilet and, where possible, with knees slightly higher than their hips and leaning slightly forward with a straight back, this was to promote bowel evacuation on a regular basis or according to their individual bowel routine.
- Monitoring: Fortnightly review of the data collected on the bowel elimination observation chart and the individualised plan were reviewed and changes implemented as required.
- Ongoing fortnightly education was given to the nursing staff on the types of aperients and the individual toilet sitting times required by the residents.

The bowel management regimen consisted of a four-day plan which acted as an initial guide for the staff to follow. There was no previous toilet sitting routine to promote bowel evacuation in this unit. A toilet sitting routine according to the resident's individual pattern was discussed and, where no identified pattern in the timing of bowel motions was found, it was agreed that the resident would be encouraged to sit on the toilet after every meal, to utilise the gastrocolic reflex, until a pattern emerged. This allowed staff to record the time the resident had their bowels opened and established the correct sitting time.

The resident was given one glass of pear juice at lunchtime, a variety of cut fruit was offered in the afternoon and usual oral aperients were maintained. This was to promote a soft bowel motion that the resident could pass without straining. The initial guide was adjusted to suit the individual resident's frequency of bowel motion and stool consistency.

Day one:

- If no bowel motion was recorded, extra pear juice and fruit were given to the resident along with their normal aperients and toilet sitting routine.

Day two:

- Extra pear juice and fruit continued as set out in day one and aperients were increased to twice daily; the resident continued their toilet sitting routine.

Day three:

- Pear juice, fruit and aperients continued to be given twice daily together with the resident's toilet sitting routine.

Day four:

- The resident continued their normal sitting routine and, if bowels were not opened, a suppository was given as a last resort.

Routine oral aperients were reassessed and continued or ceased accordingly. Macrogol (Polyethylene glycol) 3350 was given if bowel motions were Type 1–2 according to the Bristol Stool Form Scale or if the resident was on regular constipating medications. Sennosides were the aperient of choice if a bowel stimulant was required.

The results of the intervention were monitored by staff questionnaire after the education intervention and a monthly count of suppository use plotted on a frequency histogram.

Table 1. Post-implementation staff survey results.

<table>
<thead>
<tr>
<th>Survey questions/statements</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither disagree or agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was difficult to implement the new bowel regimen.</td>
<td>5/21 (23.82%)</td>
<td>7/21</td>
<td>7/21</td>
<td>2/21</td>
<td>0/21</td>
</tr>
<tr>
<td>The new regimen was beneficial to maintain residents' dignity and normalising toileting behaviour.</td>
<td>0/21 (0%)</td>
<td>1/21</td>
<td>4/21</td>
<td>10/21</td>
<td>6/21</td>
</tr>
<tr>
<td>The new bowel regimen helped to decrease odour in the unit.</td>
<td>0/21 (0%)</td>
<td>2/21</td>
<td>9/21</td>
<td>6/21</td>
<td>4/21</td>
</tr>
<tr>
<td>I would prefer to return to the old regimen rather than continue with the new regimen.</td>
<td>10/21 (47.62%)</td>
<td>2/21</td>
<td>6/21</td>
<td>1/21</td>
<td>2/21</td>
</tr>
</tbody>
</table>
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The chart audit showed that 130 suppositories were used at the RACF each month. Although the staff recorded information on the bowel elimination observation chart, no nursing interventions were planned or altered on the basis of this data. After review of the bowel charts and discussion with staff at the facility, the CNC observed a high incidence of suppository use, minimal use of oral aperients and no planned toilet sitting routines for residents to encourage bowel evacuation. The CNC, together with facility staff, reviewed each resident’s bowel chart. Adequacy of the residents’ diet, fluid intake and whether aperients were required was discussed. If bowels were opened consistently at a specific time, this was considered to be the individual resident’s toileting time.

Concerns expressed by the staff were that more nursing time would be used in managing residents’ bowel care and that there would be an increase in malodour and faecal incontinence as well as an increase in adverse behaviours, such as residents manually evacuating their bowel and smearing faeces. Staff feedback also indicated that care staff felt they needed an option to give suppositories and were concerned that the project would not be effective. The focus groups were to provide a venue for feedback about the project and these specific concerns and were used to negotiate a time limit of four days without a bowel motion before suppositories were used.

A staggered approach was taken with the introduced toilet sitting routine. This was to assist the staff in the transition period and to reinforce the positive benefits of the project to the residents and staff. Six residents were chosen at the commencement of the project. It was agreed that these residents were likely to be the most compliant in attending the sitting routine.

At the fortnightly meetings the progress of the project was reviewed. As each resident’s bowel pattern was established, other residents were included in the sitting routine. As the staff could see the success of the plan and benefits to both the residents and staff, all residents were included by the end of the third month.

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Education
The results of the staff questionnaire are shown in Table 1. The responses showed that the concerns expressed in the focus groups were generally not realised. The questionnaire indicated that staff generally supported the changes and they believed it was beneficial for client dignity and did not lead to increased malodour in the facility. The staff came to see the benefits of improving and normalising resident bowel care and the changes didn’t increase their workload.

Implementation
The daily glass of pear juice and fresh fruit was accepted by the residents as was staff implementation of the practice of, where possible, sitting residents on the toilet daily, or according to their individual bowel regimen.

Monitoring
The project implementation was reinforced by the CNC encouraging staff to undertake accurate records on bowel charts, which included stating the time and type of bowel motion to assist in planning toilet sitting times. Suppository use within
the facility following the implementation of the changes to the management of bowel care in this facility was reduced from 130 per month to 20 per month from March 2006 to February 2007 (Figure 1).

Discussion

The project successfully changed bowel care and suppository use in one RACF and this suggests that it could be effectively implemented in all 11 RACF across Ballarat Health Services.

The significant reduction in the use of suppositories from 130 to 20 per month over a 12-month period has resulted in improved bowel routine for the residents and an acknowledgement by carers that everyone should have a right to sit on the toilet to open their bowels.

This project demonstrated that nursing interventions can be effective in RACF to change bowel care management. It highlighted the need for further work in relation to measuring the effect of incontinence on quality of life for residents with dementia in RACF. Staff expressed concerns about the implementation of the project and could potentially have resisted the change in bowel management. This was managed by regular meetings and opportunities for two-way feedback. However, the most effective methods for changing staff culture require further investigation.

Implementation of best practice nursing interventions can be achieved with good leadership, support from the organisation and involvement of all staff in a systematic review of their current practice.

A highly motivated LC was essential to the success of the project. Results of the project indicate that it took some time for staff to accept change in their normal routine and within the first 12 months would have reverted to old practices without the encouragement of the LC.

References

Peer review

Water for wellbeing: promoting oral hydration in the elderly

Abstract

The Water for Wellbeing Project aimed to raise awareness of the importance of drinking adequate fluids for good health and the prevention and treatment of bladder and bowel control problems among frail older people. Evidence from the literature review informed the development of information resources and an education kit for use by staff in residential aged care, community care and packaged care programmes. The education kit was promoted and disseminated to residential and community aged care providers across Victoria. After six months a follow-up survey of users of the information kit showed that the kit had been effective in educating older people, staff and carers about adequate fluid intake.

**Keywords:** Frail older people, hydration, dehydration, fluid intake, incontinence.

Introduction

Many frail older people do not drink a sufficient amount of fluid to maintain adequate hydration. As a result, dehydration is common in older adults living in residential aged care facilities and in those living in the community\(^1\). The minimum daily fluid intake recommended for an older person is \(1500\) ml\(^2,3\). Recent research on fluid intake among residents in a residential care setting found a majority of residents drank around \(700\) ml each day, an amount well short of the recommended \(1500\) ml minimum\(^4\).

The consequences of not drinking sufficient fluid can be a rapid deterioration in the health of the older person, resulting in hospitalisation. Many older people drink just enough fluid to prevent acute dehydration but not sufficient fluid to adequately meet all their needs\(^1\). As a consequence, there is an increased risk of poor health outcomes from problems such as constipation\(^5,6\), urinary tract infection\(^7,8\), reduced cognitive function\(^9,10\) and falls\(^11,12\).

This project aimed to develop evidence-based and practical tools for use in aged care settings to educate staff, clients and residents to improve hydration practice and encourage adequate fluid intake.

Methodology

A project advisory group was formed with representatives from a range of aged and community care providers and health professionals with expertise in aged care and incontinence. A review of available evidence concerning adequate fluid intake among the frail elderly was conducted. Findings from the literature review informed the development of the resources and recommendations. An information/resources kit was developed for use in care settings of frail older people, particularly residential aged care (RAC) and Home and Community Care (HACC) programmes.

Focus group testing of the information/resources kit developed during the project was conducted with aged care and community care staff including nurses and personal care attendants. Consumer testing of information brochures was also conducted.

The education/resource kit was then promoted and disseminated to all RAC facilities and HACC services in Victoria. To obtain feedback about the usefulness of the kit, an evaluation survey, using the on-line survey platform Survey Monkey\(^\text{TM}\) (www.surveymonkey.com), was conducted after six months. The survey consisted of 10 questions in which respondents were asked to comment on the content, language, format, usefulness of the information, what they liked and disliked and adequacy of information to advise older people and educate staff on adequate fluid intake. Respondents were also asked to rate the individual resources along a five-point Likert scale from excellent to very poor.

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Competing interest statement
The project was funded by a grant from the Department of Health, Aged Care Branch.

*Corresponding author
Results

Literature reviewed

Bibliographical databases: OVID, PubMed and CINAHL were searched in April 2008. Search words were: “older people”, “fluid intake” and “hydration/dehydration”. Other selection criteria were: English language; published 1998–2008; systematic reviews and primary research; and only elderly populations. The references of relevant articles were also examined. Abstracts were reviewed and full articles were obtained of potentially relevant studies. A number of review articles were located, two systematic reviews and eight primary studies.

From the evidence reviewed, 10 recommendations for improving adequate fluid intake were included in the resources developed for the education/resources kit. These were:

1. Frail older people should drink at least 1500 ml of fluid a day, unless advised otherwise by their doctor.
2. A standard method of calculation can be used to calculate an individual’s total daily fluid goals.
3. It is recommended to identify and monitor individuals at risk, such as those who were fully dependent for dehydration and semi-dependent for adequate fluid intake.
4. Monitoring of hydration status can be done by recording fluid intake or output and use of a urine colour chart. This included providing education to carers and to the older person on the use of charts.
5. Education for carers and the older person on the volume of containers used to serve fluids.
6. Encouraged drinking small amounts throughout the day and at the commencement of, during and at the completion of activities.
7. Preferred fluids should be offered or encouraged.
8. In the case of residents of aged care facilities that may be bedridden, fluids should be offered at 90-minute intervals throughout the day.
9. Caffeinated beverages such as tea and coffee, which are often the preferred drink of older people, are a good source of fluid that can be counted towards the daily fluid intake goal. However, tea and coffee should not be the only source of fluid intake.
10. Alcohol, however should not count towards fluid intake.

The advisory group provided critical feedback during the development phase of the resource kit. On the group’s advice, the target audience was expanded to include both HACC and RAC facilities and the content and language was targeted to the carer level. To meet this aim, terminology was review and reference in the content to “adequate fluid intake” versus the term “hydration” was thought to be most appropriate. Care was taken to use consistent language when discussing water and fluid and glasses or serves, for example. More specific content included information to dispel common myths associated with hydration and information about urinary tract infections (UTI) as these are common in older people particularly in residential aged care.

In the kit the individual resources or ‘tools’ developed were grouped into three categories. The categories and tools were:

Education tools for staff and older people:
- Water for Wellbeing (booklet)
- A Guide to Fluid Intake (brochure)
- Ways to prevent UTIs (brochure)
- Fluid and the Older Person (fact sheet for staff)
- Preventing UTIs in the Older Person (fact sheet for staff)
- Hydration Awareness quiz for staff
- Practical tips for encouraging water consumption (fact sheet for staff)
- Frequently Asked Questions (fact sheet)
- Water – Are You Getting Enough? (poster)

Assessment, management and monitoring tools for care staff:
- Risk Checklist for Inadequate Fluid Intake (checklist)
- How much fluid is enough? Fluid Calculator (chart)
- Fluid Intake Tracker (chart)
- My Daily Fluid Intake Record (chart)
- Am I hydrated? Urine Colour Chart
- Management strategies for different types of fluid intake problems (chart)

Organisational tools:
- Standard 2.10 Nutrition and Hydration: Recommendations for Hydration
- Hydration best practice – Water Audit
- Older persons activity group – Water Activity

Focus testing

Focus testing of the draft resources was conducted with staff from programmes and older people. (RAC n=6; HACC n=7; older people n=9). The focus groups from RAC and HACC made suggestions and comments including an explanation of how fluid restriction can make you go to the toilet more due to the effects of concentrated urine; use of appropriate language in different care settings; for example, “resident” versus "client"
and "provide" versus "encourage"; simplifying a tool for use by carers and older people and adding imperial measurements along with metric measurements throughout documents with regard to fluid intake recommendations. Consumer feedback from the focus testing group was obtained on the two information brochures developed for older people. Most responses "strongly agreed" or "agreed" that the information was easy to follow, explained well and useful for older people.

**Promotion and dissemination**

The resources were promoted on CFA Victoria’s website and through the Victorian Continence Resource Centre’s (VCRC) education activities with community and health professions. Flyers promoting the resource kit were sent electronically to the aged care sector within Victoria, and CFA Victoria members. A launch of the kit was held coinciding with Continence Awareness Week in August 2008. The launch incorporated an art exhibition and award competition promoting the theme of *Water for Wellbeing*. Over 70 artwork entries were received from RAC facilities and HACC programmes across the state. More than 60 people, including a number of older people from RAC facilities and HACC programmes, attended the art exhibition.


The 1,894 kits, including 4,000 brochures as inserts, were disseminated directly to RAC facilities and HACC programme providers in Victoria. A further 3,428 brochures were disseminated to 46 organisations that placed orders for the brochures. There were 2,550 website hits and 1,968 downloads of the resources up to the end of August 2009, approximately 12 months after the launch of the kit.

**Evaluation**

The online survey was conducted in April 2009, approximately six months following dissemination of the resource kit. The survey had 10 questions on the content, language, format, usefulness of the information, what was liked and disliked, and the adequacy of information to advise older people and educate staff on adequate fluid intake. Respondents were also asked to rate the individual resources along a five-point Likert scale from excellent to very poor. Twenty-five survey responses were received from a sample of 157 that were sent the survey and had ordered the kit. This represented a response rate of 16% survey respondents included HACC (11), RAC (3), packaged care (1), continence services (3) and other areas (7).

The majority of respondents 20/25 (80%) had used the kit information in a range of ways including staff, client and carer education. Feedback from users was positive, with most reporting the resources were well presented, easy to use, clear and informative. Some specific comments included:

- “… good educational tool for staff and volunteers”
- “… easy to identify which tools are more valuable for particular clients”
- “… kit is compact and comprehensive and the design is appealing”

Individual resources were rated as excellent 16/25 (64%) or good 9/25 (37%). All respondents agreed that the resources provided adequate information to both advise older people on adequate fluid intake and educate staff so they can promote adequate fluid intake to older people.

After the formal evaluation phase of the project, VCRC conducted five workshops using the kit as the guide with community staff. Evaluation and feedback from these workshops is similar to the results of the survey.

**Discussion**

Survey respondents were from a variety of aged care settings and programmes, with over half from HACC programmes. Others included RAC, continence services, hospitals, transitional and packaged care programmes. The poor response from RAC and packaged care programmes in particular may indicate a need for further promotion in this area to improve the resource kit uptake and use in these programmes and settings. The response rate for the survey was low and a number of factors may have caused this, such as the workload within the aged care sector, the seniority of staff given the responsibility and the time lag between signing up for the survey (when the kit was received) and when the survey was emailed out. The low response rate means the results may not be typical of all users’ experiences with the material.

The resources had been used in the most part to educate and raise awareness among staff, clients and carers. Use of the education tools and the care provision tools in particular was most common for this purpose. Use of the organisational tools, which included the water audit and aged care standard recommendations for hydration, was less frequent. This may indicate that more time is needed in order to demonstrate impacts in the area of organisational change such as development of more supportive environments for adequate fluid intake and...
adoption of protocols and practices around hydration best practice.

One constraint of the project that may have contributed to the poor uptake in RAC in particular was the limited number of the printed resource kits available. There were only sufficient resources to provide one kit per organisation. In the case of RAC and HACC, this meant that not necessarily every facility or programme area, let alone individual staff member, received a kit.

Further follow-up is needed with organisations and programmes to determine to what extent they have integrated the materials into their practice. This may be evident in changes or adoption of new protocols, practices and procedures concerning hydration. Furthermore, reduction in clinical events such as reduced incidence of UTI, constipation, delirium and other hydration-linked events could be used to determine effectiveness.

Anecdotally, a recent newsletter article by QPS Benchmarking, whose readership includes RAC facilities, highlighted the outcomes achieved by a facility that had adopted the Water for Wellbeing kit into practice. The article reported a reduction in UTI over a 12-month period and promising signs that the rate of falls among residents within the RAC facility was also declining.

**Conclusion**

Older people, especially those with increasing frailty, often fail to drink adequate amounts of fluid, which may result in the development of incontinence and other health problems. Adequate fluid intake is important for overall health and wellbeing. Frail older people should be encouraged to drink adequate amounts of fluid.

The project makes clear recommendations on the adequate fluid intake for frail older people that are evidence-based. Furthermore, individuals and carers are encouraged to engage in self-management strategies that prevent or minimise the effects of inadequate fluid intake, thus minimising continence problems.

Copies of the Water for Wellbeing education resources and the evaluation report are available to download from www.continencevictoria.org.au

**References**

News

Australian news

World Continence Week 24–30 June 2012

World Continence Week is an initiative of the International Continence Society and is coordinated in Australia by the Continence Foundation of Australia. This year’s theme is *Healthy bladder and bowel habits* and the slogan is *Improve your bottom line*.

The key messages the CFA is promoting are:

- **Improve your bottom line**
  - Eat well.
  - Drink well.
  - Exercise regularly.
  - Keep your pelvic floor toned.
  - Practise good toilet habits.
- Bladder and bowel control problems affect one in four people.
- Bladder and bowel control problems will not get better on their own.
- Bladder and bowel control problems can be treated, better managed or cured.
- Uncomfortable discussing a bladder or bowel control problem?
  - Call 1800 33 00 66 for confidential advice.
  - Visit www.continence.org.au

The CFA relies on its members to assist with the promotion of World Continence Week and its theme to local communities and media networks. Every year, CFA members have contributed by reaching out to their local networks, including those who are, or are at risk of becoming, incontinent.

The CFA once again encourages its members to get on board with World Continence Week. In an effort to assist with this promotion, the CFA has produced a range of resources in support of the theme and its key messages. To find out more, call the National Continence Helpline on 1800 33 00 66. Information packs will be available upon request.

World Continence Week 2012 National Launch

Please join us for breakfast to celebrate World Continence Week (24–30 June 2012). The launch will take place in Melbourne on Friday 22 June (venue to be advised) and will run from 7.00 am to 9.00 am (breakfast commencing at 7.30 am). The launch will feature:

- Dr Frances Connor, Paediatric Gastroenterologist, presenting on childhood incontinence in schools.
- Launch of new resources from the Healthy Bladder and Bowel Habits in Schools project and the results from the pilot of the Toilet Tactics Kit.
- Launch of the new Australian Continence Exchange (ACE) as promoted at the 20th National Conference on Incontinence.

Booking is essential. Please contact the CFA National Office, phone (03) 9347 2522.

2012 National Continence Scholarship Programme

Applications are now open for the 2012 National Continence Scholarship Programme. Funded by the Department of Health and Ageing, 10 scholarships are available to support nurses and physiotherapists working in continence care in rural and remote areas of Australia to attend the 21st National Conference on Incontinence, a joint meeting with the International Urogynaecological Association (IUGA) and UroGynaecological Society of Australasia (UGSA) 4–8 September 2012 in Brisbane, Queensland.

To view the guidelines and application form, please visit www.continence.org.au/pages/scholarship-program.html

For more information, contact the CFA on (03) 9347 2522.

Paediatric Continence Education

On Friday 30 March 2012, the CFA hosted a very successful “Paediatric Nocturnal Enuresis” workshop in Adelaide. This one-day event targeted health professionals working with children and young people experiencing nocturnal enuresis and continence-related issues. Over 95 registrants attended the workshop including continence nurse advisors, occupational therapists, doctors, registered nurses, physiotherapists and practice nurses.

The programme covered a wide variety of relevant topics including terminology, aetiology and pathophysiology, the assessment of a child with nocturnal enuresis, management of non mono-symptomatic and mono-symptomatic nocturnal enuresis, the role of tertiary referral centres, understanding urine and the effective use of bedwetting alarms. Registrants
were also given the opportunity to workshop various case studies and direct questions to an expert panel.

Thank you to all speakers who presented at the workshop. It is the enthusiasm and commitment of these professionals that allows us to offer such quality events. Special mention must be given to Adelaide-based Paediatric Urologist Mr Sanjeev Khurana and Nephrologist Dr Sam Crafter for their interesting and engaging presentations. Their knowledge, motivation and energy contributed to the enthusiasm of a very passionate crowd. The CFA would also like to thank the South Australian Continence Resource Centre and SA Branch of the CFA for assistance and support in the development and facilitation of this workshop.

This event is one in a series of three paediatric workshops rotating around Australia addressing the topics of bowel dysfunction, bladder dysfunction and nocturnal enuresis. The next workshop will take place in the second half of the year and event details will be circulated soon.

For further information about these workshops, please email education@continence.org.au

**Every Body's Business – Hobart**
The next Every Body's Business forum will be held in Hobart on Thursday 28 June, 2–8 pm.

With a focus on assessing, managing and motivating continence clients, this forum is a fantastic opportunity to hear from renowned local and national speakers.

To register, visit www.continence.org.au/events or call 03 9347 2522.

**Fun, fitness and the pelvic floor – consumer forum**
Save the date Brisbane!

Monday 3 September 2012, 5.30–8.00 pm

To coincide with this year’s conference, the CFA in conjunction with the CFA QLD Branch and the HACC/MASS Continence Project will hold a consumer forum for all men and women with a focus on pelvic floor awareness, risk factors and its link to exercise.

For more information, contact the CFA on 03 9347 2522.

**Healthy Bladder and Bowel Habits in Schools – project update**
The Healthy Bladder and Bowel Habits in Schools Project is the special project for the CFA 2011–2012. As part of this project we have developed the Toilet Tactics Kit, which aims to raise awareness of healthy bladder and bowel habits in primary school communities and to help maintain or improve the standard of primary school toilets across Australia.

The Toilet Tactics Kit is currently being trialled in four South Australian and four Victorian primary schools, with fantastic feedback received to date. We are looking forward to formally evaluating the kit prior to the national launch during World Continence Week in June 2012.

If you would like to view the kit, visit ‘hot topics’ at www.continence.org.au

**Consumer Support Forum**
After receiving feedback in relation to the Consumer Support Forum, the CFA has decided to rename the forum. The Incontinence Support Forum is now live and is moderated by consumers and continence health professionals. The forum is available to people living with or caring for a person with bladder and bowel issues.

Individuals can talk openly about the issues surrounding incontinence and ask questions in an anonymous and safe environment. The forum allows people to share their experiences with others, to gain peer support and advice. In turn, these same stories provide support to others, as reading them can lessen their own feelings of isolation.

Promote the forum to your network of colleagues and professionals by ordering our new business cards from the National Continence Helpline, by calling freecall 1800 33 00 66.

Go to www.continence.org.au/forum to get involved.

**Australian Continence Exchange**
In preparation for the official launch of the Australian Continence Exchange website during World Continence Week in June 2012, the team is currently preparing to undertake focus groups to gather additional feedback from health professionals. This will complement the remote user testing, which attracted 280 registrations early in 2012.

Our lucky iPad winner, Jacinta Stewart of regional Victoria, has received her prize. We thank everyone who participated in the user testing, which helped us to continue to build a website to assist health professionals.

**CFA membership renewals**
The end of the financial year is drawing close and for CFA members this signifies the start of a new year for membership. Those renewing their membership with us for 2012–2013 will be the first to trial our new online membership renewal process where members can create a personalised online account, enabling them to view and edit personal details, view resource
order history, place repeat or new orders, view membership details and renew membership.

The CFA is very excited to be launching this new facility, which will also enable members to update their details throughout the year. There are options to pay online and via phone, but we haven’t done away with the options to print out a membership renewal form at the outset or to pay by post.

Your ongoing support is invaluable to us and we hope that you consider renewing your membership for the new year.

Full details for renewals will follow shortly.

Barry Cabill, CEO CFA

New Zealand news

The New Zealand Continence Association (NZCA) has been working with the Ministry of Health reviewing the Continence Services Service Specifications. This has taken place over the last six months and is now being finalised. It will then go out to each District Health Board for sign-off. Once signed off, it is due to be in use by 1 July.

Jane Craven from the Ministry of Health will address one session at this year’s conference updating everyone on the new specifications. The Ministry of Health does not have the funding or staff to review the continence tools but acknowledges that a review is important so the NZCA has offered to head the process with teleconference meetings of a committee of interested parties to work through the process. If you have a special interest or expertise in this area and would like to be involved, please email your expression of interest to zoe@continence.org.nz

We are well into planning the Continence Conference 2012 programme using feedback from the online survey of members, to include as many subject areas of interest as possible in the programme. We believe this programme will have something for everyone. As soon we have finalised the preliminary draft it will be sent out to members, so please mark in your calendars the conference dates 1–3 November 2012. The 2012 NZCA conference will be held in Wellington, New Zealand.

Jan Zander, CEO NZCA

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New absorption test sets benchmark for continence products

A new test method for measuring the absorption performance of continence products, known as Absorption Before Leakage (ABL), has been launched in Australia with HARTMANN the first to implement the new industry standard.

The test, developed by the European Disposables and Nonwovens Association (EDANA), is designed to help standardise the way continence products are assessed. The focus is on “Absorption Before Leakage” in a real life simulation rather than measuring theoretical absorption capacity for moderate to high absorbency continence products.

The new test method has been adopted across several of HARTMANN Australia's continence pad ranges and provides a practical way to determine the absorption values for continence products with particular application to those products designed for moderate to severe incontinence.

According to Anthea Reus, Clinical Services Continence Consultant at HARTMANN, the ABL test simulates real life conditions taking into consideration the human body shape, pressure caused by body weight, positioning in bed and realistic voiding volumes released at the voiding point. Miss Reus explained:

'The new test method provides clinicians with a realistic and practical guide to help them select the most suitable continence product for their patients or residents.

'It has also assisted our product development team in reviewing our products absorbency and making necessary enhancements. For example the shape and structure of the absorbent core, as well as anti-leakage cuffs and elastics to enhance the absorbency.'

HARTMANN has added the ABL value to its product lists. This helps continence advisors and clinicians to compare the new measure with the traditional industry standard ISO score.

For further information about ABL and HARTMANN continence products, please contact HARTMANN customer service on 1800 805 839 or visit www.hartmann.com.au.
### Calendar of events – 2012

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<th>Date</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>24–30 June</td>
<td>World Continence Week</td>
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<td>28 June</td>
<td>Global Congress on Prostate Cancer</td>
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<tr>
<td>30 July - 3 August</td>
<td>23rd International Nursing Research Congress</td>
<td>Honor Society of Nursing, Sigma Theta Tau International</td>
<td><a href="http://www.nursingsociety.org">www.nursingsociety.org</a></td>
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<tr>
<td>31 July - 3 August</td>
<td>Australian Prostate Cancer Conference</td>
<td>Melbourne Convention and Exhibition Centre</td>
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<td>20–22 August</td>
<td>7th International Nurse Practitioner/Advanced Practice Nursing Network Conference</td>
<td>Imperial College, London</td>
<td><a href="http://www.rcn.org.uk/newsevents/event_details/rcn_eventsms/inmp2012">www.rcn.org.uk/newsevents/event_details/rcn_eventsms/inmp2012</a></td>
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<tr>
<td>15–19 October</td>
<td>ICS 2012</td>
<td>Beijing, China</td>
<td><a href="http://www.icoffice.org">www.icoffice.org</a></td>
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<tr>
<td>17-19 October</td>
<td>RCNA Community and Primary Health Care Nursing Conference</td>
<td>The Vines, Swan Valley, Perth WA</td>
<td><a href="http://www.rcna.org.au">www.rcna.org.au</a></td>
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**Nominations sought for Peer Review Panel**

Experts from the disciplines involved in continence treatment, management and promotion and those who are expert in research methods and statistical analysis are invited to nominate to join the *Australian and New Zealand Continence Journal* Peer Review Panel.

The journal is proud to promote Australian and New Zealand scholarship.

For details regarding the Peer Review Panel, please email Jacinta Miller jacmil@bigpond.com
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The Editors and the Editorial Board of the Australian and New Zealand Continence Journal have specified guidelines for prospective authors to follow when compiling an article they wish to submit to the journal.

**Terms of submission**

The editors accept submissions in the form of research findings, clinical papers, case studies, reports, review articles, letters and product appraisals. Each submission is evaluated on its timeliness, relevance, accuracy, clarity and applicability to the journal. Submissions will be accepted from any country but must be written in English. Accompanying each submission must be a competing interest statement (see form on CFA website and Cambridge Media website). Once a paper is accepted for publication, all authors must sign the author statement and copyright assignment form which will be provided by the production editor. Once it is published, the article and its illustrations become the property of the journal, unless rights are reserved before publication.

All work is sub-edited to journal style. The editors reserve the right to modify the style and length of any article submitted, so that it conforms to journal format. Major changes to an article will be referred to the author for approval prior to publication. The Australian and New Zealand Continence Journal provides assistance to first time authors and may be contacted by email.

**Authorship**

All listed authors should have made a substantial contribution to the manuscript and may be required to indicate their contribution. Participation solely in the acquisition of funding, the collection of data or supervision of such does not justify authorship and such contributions should be listed in acknowledgements which will be printed under the author details. All participating authors must be acknowledged as such; proof of authorship may be requested. The first-named author is responsible for ensuring that any other authors have seen and approved the manuscript and are fully conversant with its contents. It is the responsibility of the author to obtain written permission from a copyright holder to reproduce copyrighted work; a copy of that permission must be provided to the journal prior to publication and a full citation of the source must be provided.

**Conflict of interest:** It is the responsibility of the submitting author to disclose to the Editor any significant financial or other interests they may have pertaining to their manuscript. Conflicts of interest should be disclosed using the ANZCJ author competing interests form. If an interest exists, publication of that interest is at the Editor’s discretion.

**Ethics**

Investigations in human and animal subjects must conform to accepted ethical standards. Authors must provide a statement within the text that the research protocol was approved by a suitably constituted ethics committee of the institution within which the work was carried out and that it conforms to the Statement on Human Experimentation or the Statement on Animal Experimentation by the NH&MRC.

**Manuscript type**

The Australian and New Zealand Continence Journal welcomes original research articles for peer review and general articles regarding the achievements of people working in the disciplines pertaining to the management of incontinence, clinical issue updates, book reviews and general project information.

**Discussion:** Presentation of information from more than one viewpoint (for example, for and against) and usually ending with a recommendation or opinion based on the evidence presented.

**Literature review:** Narrative – describes and evaluates the current knowledge of a subject, identifies gaps or inconsistencies and includes critical evaluation with recommendations for future research. Systematic – describes planned analysis and evaluation of all available research studies on a particular clinical issue, conducted in accordance with scientific principles and may include recommendations for future research.

**Research report:** Presentation of study results in an ordered fashion, based on common practice. Research reports are expected to follow the Uniform requirements for manuscripts submitted to biomedical journals, as published by the International Council of Science Journal Editors www.icmje.org.

**Case study:** Combination of recount (retelling of events as they occurred) and information report (classification and description of something). Can be presented in different ways to give a cohesive account.

**Exposition (including letter to the Editor):** Putting forward of a particular viewpoint, justification of a particular argument.

**Narrative:** An informative account of a meeting or conference, or a review of a book, journal article or relevant website.

**Preparation of manuscripts**

Manuscripts are to be no more than 4000 words and include an abstract of no more than 250 words. Manuscripts should be created in a Word document using minimal formatting and typed double spaced in 12 point Times Roman font. Include total word count and up to five keywords. Include title of work on the abstract page and first page of introduction. In the introduction, include key points on what is already known on the topic and what your manuscript contributes. Define abbreviations and acronyms on first mention in the text.
Tables are to be presented on separate pages, one per page. Tables should be clearly typed, showing columns and lines. Number tables consecutively using Arabic numerals in the order of their first citation in the text and supply a brief title for each. Place explanatory matter in a legend under the table, not in the heading. Explain in the legend all non-standard abbreviations used in each table.

Photographs and figures may be included in the submission and should be supplied in a graphic format such as jpeg at a resolution of 300 dpi. Illustrations and figures must be clear, well-drawn and large enough to be legible when reproduced. The title and legend for figures should be on a separate page after the references. Each figure must include its place, its number and the orientation of figure. Patients or other individual subjects should not be identifiable from photos unless they have given written consent for their identity to be disclosed; this must be supplied.

Referencing guidelines

The referencing format is based on the Vancouver style, the main feature of which is the use of numbers at the point of reference so as not to interfere with the flow of words. Each number corresponds to a single reference provided in the reference list at the end and, once assigned a number, a reference retains that number throughout the text, even if cited more than once. If more than one work is quoted in a reference, each work must be assigned a number. At any point in the text, the reference may be one1 or several2-4 numbers. Following are some examples of references from different sources:

Journal: A complete journal reference includes: name(s) of author(s), title of article, journal name, year of publication, volume and edition number and inclusive page numbers.


Book: A complete reference to a book includes name(s) of author(s) or editor(s), book title, edition number, name of publisher, place of publication, year of publication, specific page numbers and internet reference if applicable.


It is the author’s responsibility to ensure that all references are correct. Please double check all citations with an electronic database to ensure accuracy in the reference list. Manuscripts submitted with multiple errors will be returned for correction before being accepted for peer review.

Submission of manuscripts

Manuscripts are accepted as an electronic submission with an attachment as a Word document. The manuscript must be accompanied by a covering letter indicating that the manuscript has not been submitted elsewhere.

Manuscripts submitted via the Cambridge Manuscript Management System:

• Go to the publisher’s Web www.cambridgemedia.com.au
• Click on Manuscript System
• Login
• Create and account if first time using the system – this will be retained for future enquiries and submissions
• Enter your personal details – ANZCJ requires all fields to be completed
• Confirm your details

Follow the steps for submitting an article

• Step 1 – Type the title, type of paper and abstract. ANZCJ requires an abstract for all submissions. Select publication – Australian and New Zealand Continence Journal.
• Step 2 – Confirm author. Add co-author details (all fields) if applicable.
• Step 3 – Upload files. Please ensure your document contains the required information and is formatted according to the author guidelines. Ensure you load a title page document separately and that there is no identifying material on the article file. Please name the file appropriate to the title of the paper.
• Step 4 – Add any comments for the editor.
• Step 5 – Review your information then click submit.

Once submitted, the manuscript is reviewed by the editor and, if acceptable, sent for peer review. You will be notified by email once your manuscript has been selected for peer review.

Peer-review process

All manuscripts are initially reviewed by the Editorial committee and those deemed unsuitable (insufficient originality, serious scientific or methodological flaws, or a message that is too specialised or of limited interest to the journal readership) are returned to the author(s), usually within four weeks. If the manuscript does not conform to the submission guidelines, the author will be asked to amend it prior to peer review.

All manuscripts are reviewed by content and writing peers for relevance, construction, flow, style and grammar. This process can take eight weeks. Reviewers spend considerable time in reviewing the manuscripts and providing feedback to the authors. The length of time of the publication process may vary and depends on the quality of the work submitted. Several revisions may be required to bring the manuscript to a standard acceptable for publication. The Editorial team undertake the final review and may have different questions for the author/s to consider. Proofs of articles about to be published will be sent in PDF format to the corresponding author for review. The final decision about publication is made by the Editor.
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¹ ABL (Absorption Before Leakage), Source: standard test method WSP 354.1 (11)
In-Use Absorption Values
The ABL\(^1\) Test Method

Modern continence management has a new continence testing method known as ABL\(^1\).

“Absorption Before Leakage” - ABL, originated from EDANA, the European Disposables and Nonwovens Association. ABL is used to determine in-use absorption values of continence products for use on immobile patients with moderate to severe incontinence.

The ABL test method:
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Holding urine without leakage is the most important characteristic of social continence both during the day and night\(^2\). ABL provides health care professionals and consumers with a realistic assessment of continence product absorption capacities. This also facilitates easier selection of appropriate products to help provide optimal social continence for those that are dependent on continence pads.

The ABL test method simulates realistic test conditions taking into consideration:
- Human body shape
- Pressure caused by body weight
- Positioning in bed
- Realistic voiding volumes released at the voiding point.

ABL values can be optimised by product features such as shape and structure of absorbant core, as well as anti leakage cuffs and elastics. HARTMANN modern continence products achieve high ABL values while efficient use of material leads to lower environmental impact and makes these products more eco-efficient\(^3\).


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\(^1\) ABL (Absorption Before Leakage). Source: standard test method WSP 354.1 (11)


\(^3\) www.hartmann.info / Company / downloads / sustainability brochure