

Guidelines for Pelvic Floor Biofeedback for Adults with
bowel dysfunction

CONTROLLED DOCUMENT

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PURPOSE	
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<ul style="list-style-type: none"> Essential Reading for: 	All practitioners <i>(please specify job title/role)</i> who currently undertake the practice of <i>protocol title</i> and all practitioners <i>(please specify job title/role of eligible practitioners)</i> who wish to expand their practice to include this skill.
<ul style="list-style-type: none"> Information for: 	<i>Specify staff groups</i>

INTRODUCTION

These guidelines are developed for use in a pelvic floor biofeedback clinic. Patients with bowel dysfunction who have failed initial treatment with simple dietary and medication manipulation are recommended by NICE (2007) to have biofeedback treatment, before consideration of more invasive treatments such as neuromodulation and surgery. A specific nurse-led clinic is run for this group of patients, where they are assessed, and an individual programme of exercises is developed. The patients are seen monthly for at least 4 months and then followed up as necessary.

EVIDENCE FOR PRACTICE

The aetiology of bowel dysfunction is varied and often multifactorial. It may be a symptom of a variety of diagnoses ranging from congenital abnormalities, intestinal, neurological or endocrine disease, or physical damage to the pelvic floor. There is a large group of patients who have a functional disorder of the pelvic floor with no identifiable organic cause (Gilliland et al, 1997). Bowel dysfunction can be subdivided into those patients with faecal incontinence, those with constipation and those with elements of both. These divisions can be further subdivided into patients with:

Urge incontinence	Slow transit constipation
Passive incontinence	Outlet obstruction constipation
Mixed incontinence	Mixed constipation

The symptoms of bowel dysfunction are very distressing and socially isolating. Faecal incontinence is believed to affect at least 2% of the population (Perry, 2002) and research studies suggest that about 10% of adults soil their underwear regularly (Ahmed et al, 2010). Constipation is also common, affecting up to 26% of the Western population (Johanson and Kralstein, 2007). Both of these symptoms have a negative effect on quality of life and are expensive in both economic and social terms.

For many patients with simple functional problems dietary manipulation and use of constipating and/or bulking medications are sufficient to allow them adequate control of their bowel function. However there are a group of patients whose underlying pathophysiology manifests itself in the inability to control and co-ordinate the pelvic floor.

Biofeedback is based on behaviour modification and operant conditioning (Engel, 1974). This therapy has been reported to be effective in the treatment of constipation and incontinence (Myung, 2010). Three main methods of monitoring defaecation and providing biofeedback to patients (EMG biofeedback, manometry biofeedback and balloon sensory training) (Bassotti, 2004) are utilised. None have been shown to be consistently more effective than any other method (Woodwood et al, 2010). Electromyograph (EMG) biofeedback relies upon the display of a recording of electromyographic activity from the pelvic floor and/or abdominal muscles on a computer monitor (Bassotti, 2004). Recordings may be made from electrodes placed within the anal canal or from surface electrodes taped to the patient's perianal skin.

Reviews of large numbers of case series have concluded that biofeedback is an effective treatment for the majority of people with faecal incontinence (Heymen, 2001; Norton, 2001). Biofeedback training for faecal incontinence focuses on improving the ability to voluntarily contract the external anal sphincter and puborectalis muscles in response to rectal filling and to delay defaecation in response to a sensation of distension. Biofeedback techniques have been used to demonstrate to a patient anal sphincter activity, either on a screen or audibly, thereby enabling teaching of anal sphincter exercises and giving feedback on performance and progress. The patient is encouraged by seeing or hearing the signal to enhance squeeze strength and endurance. Biofeedback is effective in reducing incontinence in more than two-thirds of patients and is generally well accepted (Enck et al, 2009). It is currently one of the treatments recommended by NICE for patients before they embark upon neuromodulation or surgery as it is minimally invasive and has minimal side effects (NICE, 2007).

Numerous non-randomised studies of biofeedback for idiopathic constipation have published positive results, suggesting that biofeedback is an effective intervention for chronic idiopathic constipation occurring as a result of both evacuation disorders and slow gut transit (Emmanuel and Kamm, 2001; Gilliland et al, 1997). Patients may also be given basic instruction on gut anatomy and function to enhance their understanding, as well as behavioural advice about frequency and length of toilet visits, posture on the toilet and dietary habits (Horton, 2004) For constipation, the aim of biofeedback is to teach patients how to relax their external anal sphincter during attempts to defaecate, and to co-ordinate straining efforts in order to pass bowel movements.

Gut directed biofeedback retraining involves patients being taught to defecate effectively using bracing of the abdominal wall muscles and effective relaxation of the pelvic floor muscles (Nugent, 2011). This may be enhanced by use of a water filled rectal balloon which patients attempt to expel (Emmanuel and Kamm, 2001). Patients are enabled to recognise the sensations associated with relaxation of the pelvic floor and anus by a variety of different methods, together with correct use of abdominal muscles to create an effective pushing force and thus learn to defecate effectively. Evacuating regularly may also stimulate gut transit (Emmanuel and Kamm, 2001).

CONSENT

Although formal written consent is not required for minor procedures, verbal consent for pelvic floor biofeedback must be obtained where possible and this must be documented in the patient's notes. For further information regarding consent and mental capacity please refer to the following documents:

- Department of Health Reference Guide to Consent for Examination or Treatment (2009).
- The Trust's Policy and Procedural document for consent to examination or treatment (current version).
- *Mental Capacity Act (2005)*.

INDICATIONS

Patients with functional bowel problems are referred by teams within and outside the Trust.

Pelvic floor biofeedback is indicated in patients who have failed simple dietary and medication manipulation and include those with:

Urge faecal incontinence
Passive faecal incontinence
Mixed faecal incontinence
Slow transit constipation
Obstructive defaecation (anismus)
Rectocele
Rectal prolapse prior to surgery
Neurogenic bowel dysfunction

All patients selected for biofeedback training must have the ability to understand analogue or digital signals using auditory or visual display. In addition, these patients must be self-motivated to learn voluntary control through the observation of biofeedback and perform their personalized home exercise prescription usually on a daily basis.

CONTRAINDICATIONS

1. The patient has capacity but does not give consent for biofeedback
2. The patient is under 16 years of age.
3. The patient does not have capacity to give consent.
4. The patient is unable to comprehend and follow instructions.
5. Patient has no conscious control of pelvic floor muscles.

LIMITATIONS TO PRACTICE

If the Colorectal CNS is concerned about the patient's condition they must refer the patient to the appropriate medical practitioner for advice on any further action to be taken, and this must be recorded in the patient's notes.

Patients who should be treated with caution and after discussion with a colorectal surgeon include those with:

Large external haemorrhoids
Active anal fissure

Irreducible rectal prolapse
Patients with a history of abuse

There are no reported side effects in the literature

The appropriate Health and Safety risk assessments must have been completed for the clinical area.

CRITERIA FOR COMPETENCE

1. Colorectal CNS s must have undertaken education and training recognised by the Trust/Matron.
2. Evidence of satisfactory supervised practice must be provided by the Colorectal CNS as witnessed by a practitioner who is already competent in pelvic floor biofeedback for bowel dysfunction (Appendix 1)
3. The number of supervised practices required will reflect the individual Colorectal CNS's learning needs.
4. Evidence of competence must be provided and a copy kept in the Colorectal CNS's personal file and in the ward or department where the skill is practised. (Appendix 2)
5. The Colorectal CNS must provide evidence of competence in the safe handling, cleaning, use and maintenance of (insert name of medical device).
6. The Colorectal CNS must provide evidence of competence in different exercise regimens and when they should be used.
7. The Colorectal CNS must provide evidence of competence in selection of exercise regimen for individual patients.
8. The Colorectal CNS must provide evidence of understanding how to adapt different exercise regimens for individual patients and their needs.
9. Colorectal CNSs new to the Trust, who have been performing the skill elsewhere, must read and understand this protocol. Evidence of appropriate education and competence must be provided and checked by the line manager before undertaking this expanded practice at the Trust. The decision whether the Colorectal CNS needs to complete Trust training and competence will be at the discretion of the Colorectal CNS's line manager.
10. In accordance with codes of professional practice, the registered practitioner has a responsibility to recognise, and to work within, the limits of their competence. In addition, the registered practitioner has a responsibility to practise within the boundaries of the current evidence based practice and in line with up to date Trust and national policies and procedural documents. Evidence of continuing professional development and maintenance of skill level will be required and confirmed at the

registered practitioner's annual appraisal by the registered practitioner's line manager.

A list of practitioners competent to perform this skill must be kept by the line manager.

CLINICAL INCIDENT REPORTING AND MANAGEMENT

Any untoward incidents and near misses must be dealt with by the appropriate management team. An incident form must be completed and in addition the Risk Management Team must be notified by telephone of any Serious Incidents Requiring Investigation (SIRI).

REFERENCES

Ahmed M McCallum IJD Mercer-Jones M (2010) Management of faecal incontinence in adults. *British Journal of Medicine*.340 1350-5

Bassotti G, Chistolini F, Sietchiping-Nzepa F, de Roberto G, Morelli A, Chiarioni G. (2004) Biofeedback for pelvic floor dysfunction in constipation. *British Medical Journal* 328(7436) 393-396.

Emmanuel A V Kamm MA (2001) Response to a behavioural treatment, biofeedback, in constipated patients is associated with improved gut transit and autonomic innervation. *Gut* 49(2) 214-219

Enck P Van der Voort IRKlosterhalfen S (2009) Biofeedback therapy in fecal incontinence and constipation. *Neurogastroenterology Motility*. 21 1133-1141

Engel BT, Nikoomanesh P, Schuster MM. (1974) Operant conditioning of rectosphincteric responses in the treatment of faecal incontinence. *New England Journal of Medicine* 1974;**290**(12):646-9.

Gilliland R Heyman S Altomare DF Park UC Vickers D Wexner SD (1997) Outcome and predictors of success of biofeedback for constipation. *British Journal of Surgery*. 84(8) 1123-1126

Heymen S, Jones KR, Ringel Y, Scarlett Y, Whitehead WE. (2001) Biofeedback treatment of fecal incontinence: a critical review. *Diseases of the Colon & Rectum* 2001;**44**(5):728-36.

Horton N (2004) Behavioural and biofeedback therapy for evacuation disorders. Chapter in C Norton S Chelvanayagam (Eds) *Bowel Continence Nursing* Beaconsfield Publishers Ltd: Beaconsfield

Johanson JF Kralstein J (2007) Chronic constipation: a survey of the patient perspective. *Alimentary Pharmacology and Therapeutics*. 25 599-608

Department of Health (2009) *Reference Guide to Consent for Examination or Treatment* 2nd edn. HMSO London

Mental Capacity Act 2005,
<http://www.legislation.gov.uk/ukpga/2005/9/contents>
[accessed 1/8/13]

Myung SJ (2010) Biofeedback therapy in constipation and fecal incontinence. *Journal of Neurogastroenterology and Motility* 16(2) 110-112

NICE (2007) *Faecal Incontinence: The Management of Faecal Incontinence in Adults*. National Collaborating Centre for Acute Care: London

Norton C, Kamm MA. (2001) Anal sphincter biofeedback and pelvic floor exercises for faecal incontinence in adults - a systematic review. *Alimentary Pharmacology & Therapeutics* 2001 15:1147-54.

Norton C Cody JD Hosker G (2008) Biofeedback and/or sphincter exercises for the treatment of faecal incontinence in adults. *Cochrane Database of Systematic Reviews* Issue 3

Nugent K Conservative treatment of pelvic floor disorders. Chapter in *Pelvic Floor Disorders for the Colorectal Surgeon*. Eds I Lindsey K Nugent T Dixon (2011) Oxford University Press: Oxford

Perry S Shaw C McGrother C Matthews RJ Assassa RP Dallosso H Williams K Brittain KR Azam U Clarke M Jagger C Mayne C Castleden CM (2002) Prevalence of faecal incontinence in adults aged 40 years or more living in the community. *Gut*. 50(4) 480-484

University Hospitals Birmingham NHS Foundation Trust (current version)
Policy for consent to examination or treatment, University Hospitals Birmingham NHS Foundation Trust
http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm
[accessed 1/8/13]

University Hospitals Birmingham NHS Foundation Trust (current version)
Procedure for consent to examination or treatment. University Hospitals Birmingham NHS Foundation Trust
http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm
[accessed 1/8/13]

Woodward S Norton CS Chiarelli P (2010) Biofeedback for treatment of chronic idiopathic constipation in adults (Protocol). *Cochrane Database of Systematic Reviews* 2010, Issue 4.

BIBLIOGRAPHY

University Hospitals Birmingham NHS Foundation Trust Risk Assessment

PROTOCOL SUBMISSION DETAILS

Protocol prepared / reviewed* (*delete as appropriate) by:

Detail members of the team who developed the protocol (Involve appropriate staff depending upon where the protocol will be practised and by whom; e.g. medical staff, allied health professionals, registered nurses, pharmacist, health and safety advisors)

Name Title

Education Package developed/ reviewed by: (if appropriate)

Protocol submitted to and approved by:
(The titles may alter depending on nature of the protocol if it is multidisciplinary or Trust wide)

Executive Chief Nurse

Date:

Executive Medical Director

Date:

Head of Service/ Associate Director for Allied Health Professionals/Associate Director of Health Care Scientists/Associate Director of Nursing, Division.....

Date:

Matron/Senior Practitioner

Date:

Clinical Service Lead

Date:

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EVIDENCE OF SUPERVISED PRACTICE

To become a competent practitioner, it is the responsibility of each practitioner (specify job title/role) to undertake supervised practice in order to perform EXPANDED PRACTICE PROTOCOL TITLE in a safe and skilled manner.

Name of Practitioner (specify job title/role):

DATE	DETAILS OF PROCEDURE	SATISFACTORY STANDARD MET	COMMENTS	PRINT NAME, SIGNATURE & DESIGNATION
	<i>If required:</i> Provide example of detail to include when completing this form	Yes / No	<i>If required:</i> Provide example of detail to include when completing this form	
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		

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CRITERIA FOR COMPETENCE

END COMPETENCE: EXPANDED PRACTICE PROTOCOL TITLE

Date(s) of Education and supervised practice:

Name of Practitioner (print): (specify job title/role) Clinical Area / Department:

Name of Supervisor (print):

Element of Competence To Be Achieved	Date Achieved	Practitioner Sign (specify job title/role)	Supervisor Sign
Discuss and identify • indications, • contraindications • limitations for pelvic floor biofeedback according to this expanded practice protocol.			
Provide evidence of competence in biofeedback training in accordance with guidelines			
Provide evidence of understanding of different exercise regimens, and when each should be used			
Demonstrate competence in selection of exercise regimen			
Discuss accountability in relation to the NMC Code: Standards of conduct, performance and ethics for nurses and midwives (2008).			
Demonstrate maintenance of the patient's privacy and dignity throughout the procedure.			
Demonstrate a working knowledge of the Trust's policy for consent to examination or treatment.			

Element of Competence To Be Achieved	Date Achieved	Practitioner Sign (specify job title/role)	Supervisor Sign
Demonstrate a working knowledge of the <i>Mental Capacity Act</i> .			
Demonstrate accurate provision of information pre and post the procedure in a way that the patient understands.			
Demonstrate involvement of the patient in decision making about their care and treatment.			
Demonstrate application of the Trust Principles for carers.			
Provide evidence of competence in the safe use, calibration, maintenance and cleaning of EMG biofeedback device			
Demonstrate competence in assessment of patients progress			
Demonstrate safe infection control practices throughout the procedure. To include: <ul style="list-style-type: none"> • Standard precautions • Aseptic non touch technique (where applicable) 			
Demonstrate accurate record keeping.			
Discuss any health and safety issues in relation to this expanded practice			
Demonstrate an understanding of the incident reporting process.			

I declare that I have expanded my knowledge and skills and undertake to practice with accountability for my decisions and actions.
I have read and understood the protocol for Biofeedback training

Signature of Colorectal Clinical Nurse Specialist :**Print name:**.....

Date:

I declare that I have supervised this practitioner and found her/him to be competent as judged by the above criteria.

Signature of Supervisor: **Print name:**.....

Date:

A copy of this record should be placed in the practitioner's personal file, a copy must be stored in the clinical area by the line manager, and a copy can be retained by the individual for their Professional Portfolio.

Procedure

Equipment

Biofeedback machine
Single use probe
Access to PC
Water soluble lubricating gel
Apron
Gloves

ACTION

Verbally confirm the identity of the patient by asking for their full name and date of birth. If client unable to confirm, check identity with family/carer
Explain procedure to patient including risks and benefits and gain valid consent.
Document consent in patient's health records

Give detailed explanation of pelvic floor anatomy and physiology
Give instruction on correct posture during evacuation
Give instruction on optimal stool consistency

Give instruction on diet and medication use

Wash hands, put on apron, put on gloves.
Position patient in left lateral, able to view computer screen
Insert lubricated probe into anal canal
Connect to biofeedback equipment
Demonstrate rest, squeeze and push on monitor

Instruct patient on relevant training programme for their dysfunction.
Remove probe and dispose of safely
Save patient data
Clean and store equipment
Ensure patient clean and comfortable
Remove gloves and apron and wash hands
Document treatment and make further appointment

RATIONALE

To avoid mistaken identity

To ensure patient understands procedure and relevant risks
To gain co-operation and patients agreement to care
Increase patient understanding of their dysfunction
Reduce bad habits during toileting

Ensure stool consistency is correct to help with bowel dysfunction
Ensure diet and medication are helping with stool evacuation
To minimise cross infection
Correct position for rectal insertion.

Enable feedback of EMG signal
Enable recording of data
Instruct patient in use of own pelvic floor and enable discrimination and co-ordination.
Individualise programme to each individual's requirements and abilities.
Minimise cross infection
Enable audit of treatment
Minimise cross infection
Ensure patient comfort
Minimise cross infection
To ensure written communication of patient care and as record for audit purposes.

Sample exercise regimens

The following are examples of exercise regimens; the individual regimen which is used for specific patients is tailored to their particular problem and the goals for treatment.

Faecal Incontinence:

Muscle strengthening is done with maximal contractions, that are held for 5-10 seconds at a time, depending on the patient's ability, with 10-second rest periods in between. These work/rest cycles are repeated several times, until the contraction begins to show fatigue, or when the patient begins to compensate with accessory musculature.

Endurance training is done with submaximal contractions held for increasingly longer periods of time. For example hold half of maximal contraction for a count of 10 seconds with 10 second rest period. Again these cycles are repeated several times.

Speed of recruitment is practiced with several rapid forceful contractions (flicks) in a short time frame, for example, 5 successive contractions, performed within ten seconds. A progressive contraction can also be done, asking the patient to contract and relax gradually.

Evacuatory disorders:

The correct positioning on the toilet is taught – leaning forwards with forearms on legs, feet flat on floor and knees higher than hips. This may involve raising feet on a stool or box.

Toilet training - Making time to go to the toilet at a regular time every day and spending no longer than 10 minutes trying.

A balloon expellation test is used to demonstrate muscle actions and sensation when pushing to the patient. The patient demonstrates paradoxical contraction when trying to expel the balloon and/or patient demonstrates poor propulsion and excessive straining.

The brace teaches the patient how to push using the abdominal muscles without straining, and how to direct the propulsion in the correct direction. Place hands either side of the waist and cough – this identifies the abdominal oblique muscles needed to brace. The waist should widen and become barrel shaped. Brace slowly outwards (widen the waist without coughing) and then push from the waist backwards and downwards into the back passage. Relax for one second then brace outwards and push again.

The lift demonstrates to the patient the method of contracting and relaxing the external sphincter so that they can combine relaxation with the brace and enable an effective bowel action. Patients imagine that their back passage is a lift where when the muscles are relaxed the lift is on the first floor. Tightening the muscle as if to put off defaecation should be imagined as the lift going up to the second or third floor. To relax the sphincter muscle the lift goes the other way, to the ground floor and then the basement.

Commonly this exercise is practiced for 5 to 10 minutes twice a day, usually after meals as this stimulates the gastro-colic reflex and so increases the urge to defaecate.

