

Constipation: a clinical review

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Abstract

Advanced Nurse Practitioners (ANP) are autonomous practitioners who are required to manage clinical care in partnership with patients, families, and carers. This requires using evidence to undertake complex decision-making (Health Education England, 2017). This clinical review will examine the issue of constipation, with particular emphasis on the older patient group. The aetiology and epidemiology of constipation will be examined, the pathophysiological manifestation considered and the diagnosis and management within this population analysed. In doing so the evidence base will be critiqued to ensure autonomous, safe management of this condition.

Epidemiology

Constipation is common and is increasingly prevalent in women and older people, affecting two million people within the United Kingdom (Coloplast, 2018). Even though it is preventable and manageable, it accounted for 71,430 hospital admissions in 2017-2018, costing £162 million pounds (Disney, 2019). These figures are steadily increasing with constipation accounting for 77,055 admissions in 2019-2020 (NHS Digital, 2020). The true figures may be higher still as it is a condition thought to be under diagnosed (Disney, 2019). This could be due to people self-treating with over-the-counter medications (Tack *et al*, 2011), with 20% of people too embarrassed to seek professional help for constipation and a further 39% who think it is a minor problem not worth seeking help for (Coloplast, 2018). It may also be due to the different definitions used (Shafe *et al*, 2011).

Definition

Experts define constipation as an individual opening their bowels less than three times weekly (Drossman, 2016). National guidance however states that it is when an individual opens their bowels less often than their normal frequency (National Institute for Health and Care Excellence {NICE}, 2020a). Whilst there are varying definitions, current guidance defines constipation as unsatisfactory defecation due to infrequent bowel opening, difficulty in stool passage and incomplete defecation (Joint Formulary Committee {JFC}, 2020 and NICE, 2020a).

Primary Constipation

Constipation can be acute or chronic (NHS Inform, 2020). Acute constipation is defined as symptoms occurring for less than three months, whilst symptoms that have lasted longer than this are classed as chronic constipation (Roa & Sharma, 2020). Generally, constipation, it is classified into two categories: primary and secondary constipation, as shown in table one (NICE, 2020a). It is important to distinguish between these subtypes to guide future investigations and treatment (Andrew & Storr, 2011). Primary constipation, also known as idiopathic or functional, is chronic constipation without an identifiable cause (Bharucha & Lacy, 2020). This category can be divided further into three subgroups: normal transit, slow transit and defecatory disorders (Kumar & Clark, 2012). In normal transit constipation the stool passes through the colon at a normal rate and defecation occurs at a normal frequency, but patients experience symptoms of constipation and pass hard stools (Walker *et al*, 2014). In slow transit the stool moves through the colon slower leading to infrequent defecation. This may be due to delayed emptying of the proximal colon and dysfunction of post-prandial colonic motility (Andrew & Storr, 2011). Whilst it is not clear why this occurs, the consumption of dietary fats may be linked to colonic motility (Carter & Scott, 2009, Mosinska *et al*, 2019, Pitucn, Walkowiak & Banaszkiwicz, 2013 and Yao *et al*, 2014) however, the research base is currently inconclusive. The rate at which stool passes through the colon is difficult to determine with self-reporting influencing this often-subjective decision (Jamshed, Lee & Olden, 2011). Investigatory colonic transit testing is available but is argued to carry an increased cost and incontinence to patients (Dinning *et al*, 2011). Defecatory disorders involve pelvic floor dysfunction, such as anismus and anterior rectocele (Douglas, Nicol, & Robertson, 2013). The name “idiopathic” given to primary constipation is therefore misleading; there are identifiable causes in some cases. It could be argued that this terminology is why some individuals think constipation is not worth seeking professional help for.

Secondary constipation

Secondary constipation occurs because of other factors (see table two). Medications, like antimuscarinics and opiates can be causative (Galbraith *et al*, 2007). Antimuscarinics, such as Oxybutyin inhibit the main parasympathetic nervous system neurotransmitter, acetylcholine, thus inhibiting the contraction of smooth muscle and

increasing bowel motility (Rang *et al*, 2016). The gastrointestinal tract contains many opioid receptors, which when stimulated by opioids cause increased tone and decreased peristalsis of the bowel (Walker & Whittlesea, 2012). This leads to increased water absorption and thus harder stools, causing constipation directly and indirectly (Holzer, 2009). Structural abnormalities like anal fissures and haemorrhoids can be caused by constipation but are also a consequence (Kumar & Clarke, 2012). Neurological conditions, such as Parkinson's Disease can lead to constipation, with up-to 75% of individuals with PD experiencing constipation (Carrasco, Timmerman & Pedrosa, 2018). The reasons are multifactorial; dysfunction of the autonomic nervous system causes gastroparesis and reduced peristalsis, medications to treat PD include anticholinergics, physical activity decreases leading to decreased peristalsis and oral intake is often reduced secondary to tremor and swelling difficulties (Mac Fadyen & Veron, 2016 and Parkinson's Foundation, 2021). Amyloidosis is a myopathic cause of constipation that occurs secondary to a build-up of amyloid proteins in the autonomic nervous system, causing autonomic neuropathy and decreased functioning of the nerves controlling the bowels (Myeloma UK, 2018). This along-with amyloid deposits in the gastrointestinal tract lead to reduced bowel motility and constipation (McFarlane *et al*, 2018). Organic conditions, like hypokalaemia can also lead to constipation as potassium is involved in relaying messages from the brain to the muscles, including those of the bowel (Kardalas *et al*, 2018).

Constipation in the elderly

Whilst the causes of constipation are varied, it is evident from exploring some of the causes that the elderly are at an increased risk of developing constipation. Statistically, it is more common in the over those over the age of 65 (Talley, 2004), with 1 in 2 over 80's suffering with the condition (Gandell *et al*, 2013). It is thought that 80% of adult care home residents suffer chronically with constipation (Potter & Wagglers, 2005). Despite these staggering figures, constipation is not a physiological consequence of ageing (Castledine *et al*, 2007 and Wilson, 2005). Multimorbidity and polypharmacy are however increased within this patient group (Patterson *et al*, 2012). Parkinson's Disease and amyloidosis are diseases more prevalent with advancing age (Reeve, Simcox & Turnbull, 2014 and Sachchithanatham *et al*, 2015). Electrolyte imbalances are common in this population group secondary to both medication and pathology (Schlanger, Bailey & Sands, 2010). Other factors that ensure regular bowel

movements are a good dietary intake of fluids and fibre and regular exercise (Forootan, Bagheri & Darvishi, 2018). Poor dentition, dysphagia, anosmia, dysgeusia, all increasingly common in this age group, can result in a decrease of diet (Boyce & Shone, 2006 and Gallagher & O'Mahoney, 2009 and McCormick *et al*, 2008). A decreased thirst sensation, common in the older age group can result in poor consumption of fluids (Potter, Norton & Cottenden, 2002). Poor mobility, urinary incontinence and diuretics, again all common within the elderly can lead to an intentional decrease in oral fluids (Eberhardie, 2003). Ageing combined with multimorbidity can result in decreased mobility and thus reduced peristalsis of the bowels (De Giorgio *et al*, 2015). Furthermore, socio-environmental factors, such as long term care is argued to increase the risk of constipation (Cardin *et al*, 2010). The complexities associated with this population group increase the complexities of constipation, with the causes often being multifactorial (De Giorgio *et al*, 2015).

Complications

Despite constipation being a common condition that is both preventable and treatable many individuals suffer with complications. NICE (2020b) list haemorrhoids, fissures (image 1), loss of both sensory and motor function, rectal distension, faecal loading and impaction as the complications of constipation. The complications however are not merely limited to physical complaints. Constipation can affect all aspects of an individuals' health and wellbeing (Belsey *et al*, 2010 and Gallegos-Orozco *et al*, 2012). It is well known that constipation can lead to pain and bloating (Cusack *et al*, 2013 and Woodward, 2012), which are associated with distress (International Longevity Centre-UK, 2018). Furthermore, anxiety and depression are recognised complications of constipation (Potter, Norton and Cottenden, 2002) with up to 40% of chronically constipated people receiving a diagnosis of anxiety and 38% a diagnosed depression (International Longevity Centre-UK, 2018). Interestingly, whilst anxiety is a complication of constipation, it is also a cause, due to the bidirectional communication of the brain-gut axis (Mukhtar, Nawaz & Abid, 2019). Within the elderly population the complications are increased and include delirium, nausea and vomiting, decreased appetite, dehydration and fatigue (Gower, Gatewood & Kang, 2012, International Longevity Centre-UK, 2018 and Linton, 2014). Inconsistently, whilst NICE (2020b) do not list delirium as a complication of constipation in their Clinical Knowledge Summary their guidance on delirium does highlight the link (NICE, 2010). Furthermore, it is

recognised in this guidance that delirium is a serious condition that increases the risk of death. One could argue that with the risks from delirium being so severe that that link between that and constipation should be stated in all guidance.

NICE (2020b) do, however recognise incontinence, obstruction, perforation, prolapse and recurrent urinary infections as complications of faecal impaction. Faecal impaction is defined as a mass of hard stool that cannot be evacuated from the colon or rectum (Falcon *et al*, 2016). This obstruction increased the colonic pressure and can result in ischaemia and secondary ulceration and perforation (Kumar & Clarke, 2012). Chronic dilation of the colon caused by the obstruction can lead to mega colon, increased bowel secretions and weakening of the muscles and sphincters (Walker *et al*, 2014). The latter, allows loose stool to bypass the faecal mass and leak out of the anus. Termed “overflow”, this type of faecal incontinence is common in the elderly (Potter, Norton and Cottenden, 2002) and can result in a loss of dignity and social isolation in this already vulnerable patient group (International Longevity Centre-UK, 2018).

Diagnosis

The Rome IV diagnostic criteria can be used to diagnose functional constipation in patients with symptoms for at least three months (Drossman, 2016). It is argued however that this is rarely used in practice (Kellow, 2010). This may be due to difficulties in recalling the criteria and its complexities (Whitehead, Palsson & Simren, 2017). It may also be because National Guidance, whilst acknowledging this diagnostic criteria, does not specifically recommend the use of this, or any, diagnostic criteria (NICE, 2020b). Whilst not widely used with clinical practice, the criteria is consistently used within research (Lacy *et al*, 2016).

In practice the diagnosis of constipation is generally a clinical one (Raine *et al*, 2017), based upon history taking and examination (Bowker *et al*, 2018). During history taking the nurse should ascertain the normal frequency of opening the bowels and type of stool passed and the current frequency and type (Thomas and Monaghan, 2018). A Bristol Stool Form Chart (BSFC) (Appendix 1) can be used to identify the type of stool passed, indicating transit time (Heaton & Lewis, 1997). This chart is useful in providing an objective record of stool type (NICE, 2020c) and has shown good validity and

reliability (Blake, Raker & Welan, 2016 and Chumpitazi *et al*, 2016). Whilst it used within the Rome IV diagnostic criteria (Drossman, 2016) research is yet to prove it is an independent diagnostic tool. Within the BSFC and the Rome IV diagnostic criteria a type 1 and 2 stool indicates constipation (Drossman, 2016 and Heaton & Lewis, 1997); yet a type 7 stool could be indicative of overflow diarrhoea secondary to constipation. One could argue that this clarification would need to be made if the BSFC was to be used alone.

Importance of history taking

Taking a bowel history to diagnose constipation should also include questions to identify symptoms and complications, a past medical history to highlight potential causes and a drug history to identify causative medications (Thomas and Monaghan, 2018). A drug history should also identify any constipation treatments and the success or failure of these to guide any potential prescriptions treatments. Within care of the elderly the gold standard assessment is a comprehensive geriatric assessment (Royal College of Physicians, 2012). This holistic assessment tool prompts a multidisciplinary approach to assessing an older-person and includes all the components of a good bowel history, including a drug history and rationalisation of prescribed medications (British Geriatrics Society, 2018). Furthermore, continence is one of the domains of assessment (British Geriatrics Society, 2019), ensuring that faecal incontinence would not be missed. During history taking it is important to remember that research shows patient's may be embarrassed to discuss their bowels (Coloplast, 2018), therefore careful but honest exploration may generate more information than allowing the patient to volunteer the information (Epstein *et al*, 2009). It is recommended that nurses should indicate to their patient that they are going to ask questions that the patient may find sensitive in nature (Douglas, Nicol & Robertson, 2013). Sensitive but important questions can include asking the patient if they manually evacuate their bowels by inserting a digit into the vagina or anus.

Abdominal examination

An abdominal examination of a constipated patient may identify pain, distension, a mass or a palpable colon (Douglas, Nicol & Robertson, 2013). Auscultation of the bowel may highlight an absence of, or tinkling bowel sounds suggestive of a bowel obstruction (Thomas & Monaghan, 2018). To further guide a diagnosis of constipation

the nurse can perform a digital rectal examination (DRE) (Raine *et al*, 2017). This may be diagnostic of a full rectum, hard stool within the rectum, haemorrhoids, fissure and prolapse (NICE, 2020c). Failure to find stool within the rectum however does not rule out constipation and may be indicative of high impaction (Bowker *et al*, 2018). In this case, an abdominal x-ray may assist diagnosis (Falcon *et al*, 2016). During DRE the nurse can assess the sphincters by asking the patient to contract their anus (Kyle, 2007). They can also assess for descent of the pelvic floor and prolapse by asking the patient to bear down or cough (Potter, 2021). Whilst blood tests may not be directly diagnostic of constipation they could indicate potential causes of constipation, such as dehydration or electrolyte imbalances (Hamilton & Bickle, 2017).

A potential serious cause of constipation is bowel cancer (NICE, 2020d). As such, during history taking and examination, red flag symptoms such as unexplained weight loss, rectal bleeding and abdominal pain should be identified. NICE (2015a) state that any adult over the age of 60 with changes in bowel habit, an iron-deficiency anaemia or an abdominal or rectal mass should be referred on a suspected cancer pathway. This is where a stool form chart could be utilised to differentiate between bowel changes and chronic constipation.

Treatment

Both nationally and locally there is minimal guidance or policy on how to manage constipation. NICE (2020a) have a clinical knowledge summary and the JFC (2020) also provide some guidance on management. Treatment is dependent on the type of constipation identified but non-pharmacological treatment is the first line recommendation for all types (JFC, 2020). Increasing dietary fibre, fluids and exercise should always be encouraged by the nursing team (NICE, 2020e). This may help to decrease the cost of constipation treatment, with 91 million pounds being spent on prescriptions for constipation in 2017-2018 (Disney, 2018). In the older patient-group however this may be difficult due to poor dentition, dysphagia, anosmia, dysgeusia, decreased thirst sensation, decreased motor dexterity and poor mobility (Boyce & Shone, 2006, Eberhardie, 2003, Forootan, Bagheri & Darvishi, 2018, McCormick *et al*, 2008 and Potter, Norton & Cottenden, 2002). It is recommended that an adult consume 30g of fibre daily (NICE, 2020e) but with two slices of whole meal bread amounting to 6.5g and an apple 1.2g (NHS, 2021) it is easy to see how the elderly

may fail to achieve this target. Furthermore, it is well recognised healthy foods cost more than unhealthy foods (The Food Foundation, 2020). With 1.9 million pensioners living in poverty in this country, with this figure rising with age (Age UK, 2020), it is arguable that not all older people could afford to eat 30g of fibre daily.

The nurse can also ensure that the patient is aware of the correct evacuation position (image two). A footstool can be used to ensure that the knees are above the hips whilst using the toilet (Royal College of Nursing, 2019). Hip replacements or a history of falls however may contraindicate this implementation in the older person (Kent Community Health NHS Foundation Trust, 2019).

If non-pharmacological treatment is not viable or ineffective then second line treatment is pharmacological management (NICE, 2020e). Before any prescribing decision is made one should ensure that the patient is indeed constipated and any underlying correctable complaints addressed, including the discontinuation of any constipating medications if able (NICE, 2020e). Treatment for both acute and chronic constipation is a bulk forming laxative, followed by an osmotic laxative if stools remain hard or a stimulant laxative if stools are soft but difficult to pass (JFC, 2020). Bulk forming laxatives work by increasing the bulk of stools and thus stimulation of the bowels (Walker & Whittlesea, 2012). Bowel obstruction can occur however if an inadequate amount of fluids are consumed and thus the prescriber needs to assess the older-persons fluid-intake (Greenstein, 2009). Osmotic laxatives work by drawing water into the bowel from the body (Rang *et al*, 2016), so again the nurse prescriber needs to check on the daily fluid consumption of the patient they are prescribing for (Raine *et al*, 2017). Stimulant laxatives work by stimulating peristalsis of the bowel (Walker & Whittlesea, 2012). Docusate sodium is both a stimulant laxative and a softener that decreases the surface tension and increases fluid penetration of a mass as well as stimulating peristalsis (Emergency Medicines Compendium {EMC}, 2020). Both osmotic and stimulant laxatives can be administered rectally if the nurse finds a full rectum is found on examination (JFC, 2020).

In opioid induced constipation the treatment is different. Bulk forming agents should be avoided (JFC, 2020). As opioids inhibit bowel peristalsis increasing the bulk of the stool could lead to impaction and obstruction (Walker & Whittlesea, 2012). Instead,

treatment should be either osmotic or stimulant laxatives (JFC, 2020). Naloxegol can be used in opioid induced constipation when response to other laxatives is inadequate (JFC 2020). This is a peripherally acting opioid-receptor antagonist which prevents the constipating affect of opioids without preventing the analgesic effect (EMC, 2019). The cautions associated with this drug however could make it unsuitable for some older people (EMC, 2019). It is also far more expensive than other laxatives (NICE, 2015b). Methylnaltrexone Bromide is another peripherally acting opioid-receptor antagonist however this option is less attractive due to a subcutaneous administration (JFC, 2020) and a lack of current appraisal (NICE, 2021). When the side effects of opioids are known, one could question if 'as required' laxatives should be prescribed alongside them although this could increase prescribing costs and drug wastage. Nurses should certainly provide education, along with a stool form chart and safety net advice should constipation occur. Despite this seemingly straightforward nursing intervention there is no guidance currently on the management of potential constipation or assessment of bowel function when commencing opioids (NICE, 2011, 2013, 2014, 2016a and 2016b).

Treatment for faecal impaction is dependent on stool consistency, with osmotic laxatives administered if stools are hard and stimulant laxatives if the stools are soft (JFC, 2020). This however could be difficult to distinguish as the nature of impaction means that stool is not being passed. Guidance does not specify if this prescribing decision is made on the last stool passed however the definition and description of impaction is suggestive of hard stool (Falcon *et al*, 2016). Doses of oral laxatives are higher and more frequent in the treatment of impaction, with rectal administration of stimulants or softeners added early in the treatment plan (JFC, 2020). If an adequate response is not achieved an osmotic or softening enema can be added (JFC, 2020). This could lead to diarrhoea and overflow (NICE, 2020e), for which an older person with mobility problems may need nursing support to manage. Treatment should aim to completely resolve impaction with minimal discomfort with adjustments in doses and choice and combination of laxatives adjusted to results and patient preference (NICE, 2020e).

Patient preference and choice

Patient preference and choice should not be limited to treatment of faecal impaction only. As with all decisions the nurse should work alongside the patient, empowering and encouraging them to contribute to their own care (Health Education England {HEE}, 2017 and Nursing and Midwifery Council, 2018). This is particularly important when making a prescribing decision with guidance stating that patient factors should be considered and a shared decision made (Royal Pharmaceutical Society, 2016). Not only is this autonomous approach legally and ethically just (Beauchamp & Childress, 2019 and Griffith & Dowie, 2019) but involving the patient in their care and treatment is thought to increase adherence with medications (NICE, 2015c). Research reveals that older people have lower adherence to medication than other patient groups (NICE, 2015c and Yap, Thirumoorthy & Kwan, 2015). Likely this is due to multimorbidity, polypharmacy and adverse drug effects (Sabate and Sabate, 2000) thus highlighting the importance of a patient-centred approach in the treatment of constipation within this patient-group.

Conclusion

Constipation within the elderly is a complex condition with multifactorial causes. It is under reported, diagnosed and treated; resulting in complications that impact on all aspects of an individual's life. For the older person those complications could result in increased morbidity and mortality as well as a decrease in independence and dignity. The management of constipation is as varied as the causes, but research shows that the most effective treatment-plan is one that the patient has participated in making with their treating clinician. As an autonomous practitioner, an ANP is perfectly placed to lead this patient-centred approach (HEE, 2017). Furthermore, the ANP, in leading GCA can ensure that bowel-assessment becomes ingrained within practice.

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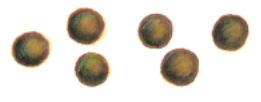






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Appendix 1

The Bristol Stool Form Scale

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces ENTIRELY LIQUID

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UK/COR/0118/0853. Date of preparation: January 2018

Table 1 – showing some causes of primary and secondary constipation

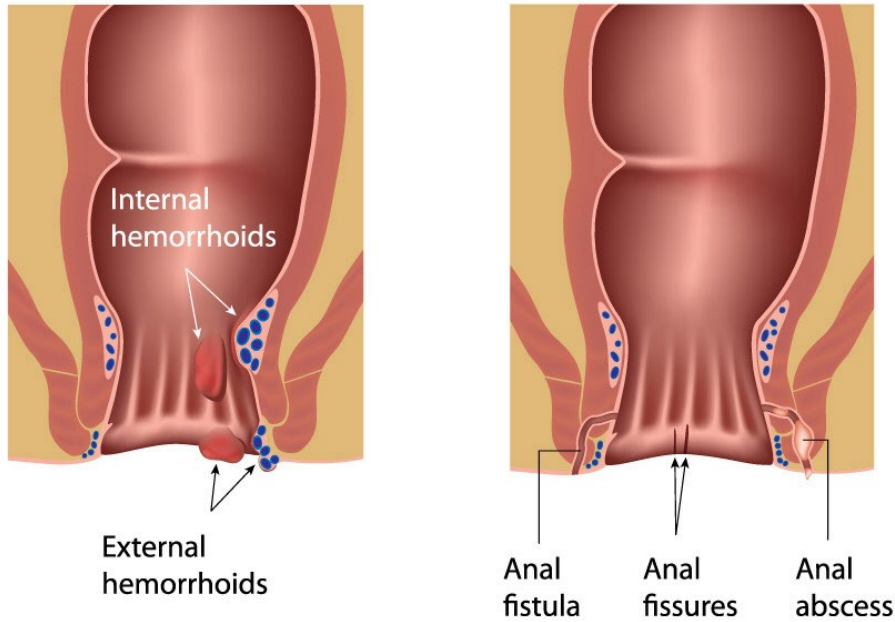
Primary constipation	Secondary constipation
Normal transit	Medication
Slow transit	Structural abnormalities
Defecatory disorders	Neurological conditions
	Myopathic
	Organic conditions
	Obstruction
	Psychiatric

Table 2 – showing causes of secondary constipation

Secondary Constipation	
Medication	Opioids (eg Morphine sulphate)
	Antimuscarinics (eg Oxybutyin)
	Calcium Channel Blockers (eg Amlodipine)
	Diuretics (eg Furosemide)
Structural abnormalities	Anal fissures
	Haemorrhoids
Neurological conditions	Parkinson's Disease
	Multiple Sclerosis
Myopathic	Amyloidosis
Organic conditions	Hypokalaemia
	Hypercalcaemia
Obstruction	Cancer
	Stricture
Psychiatric	Depression
	Anxiety
	Eating disorders

Image 1 – showing haemorrhoids and fissures

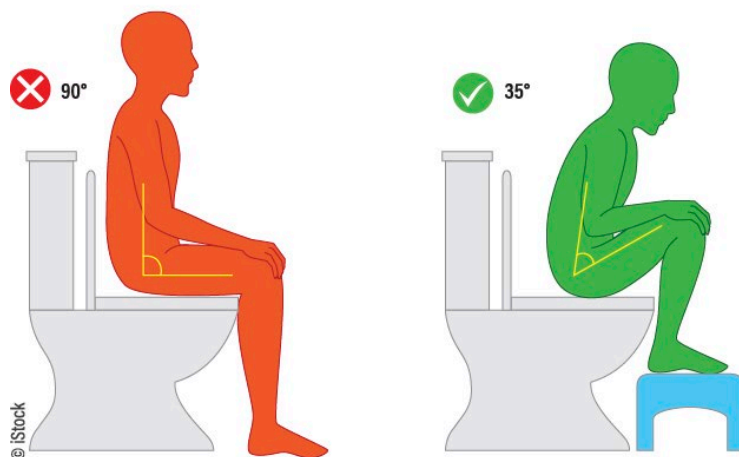
Anal Disorders



Available at: <https://albanygi.com/patient-education/anal-fissure> (Accessed: 21st January 2022)

Diagram 2 – showing correct defecation position

Figure 1. Suboptimal and optimal toileting positions for effective defecation



Available at: <https://journals.rcni.com/learning-disability-practice/evidence-and-practice/preventing-assessing-and-managing-constipation-in-people-with-intellectual-disabilities-ldp.2020.e2067/abs> (accessed: 21st January 2022)