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Topic: Bowel and Anorectal Function and Dysfunction

Class: Final BPTh

Subject: Community Physiotherapy

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Bowel and anorectal function and dysfunction

Normal bowel function

- Food takes from 1 to 3 days to pass through the gut.
- It is propelled through by peristalsis and on the way digestion takes place; nutrients are absorbed into the bloodstream chiefly in the small intestines.
- Continence then depends on safe storage of the waste material in the colon and rectum, and appropriate voiding at a chosen time and place.

Storage

- Residual material, is delivered to the colon where water is absorbed and the remainder formed into faeces.
- The consistency of the final stools depends on how long the faecal material remains in the colon having water removed from it.
- Finally the faeces are propelled into the rectum by periodic strong mass gut movements, ready for evacuation.

- These mass movements are triggered by the gastrocolic reflex, which is itself stimulated by eating and activity.
- Anal continence is maintained so long as the closure pressure at the anus is greater than that being produced by the periodic mass movements of the gut
- The initial sensation of the presence of stool in the rectum can be produced by as little as 11–68mL and the maximal sensation at 250–510 mL.

Following factors contribute to the maintenance of anorectal continence:

- The resting pressure of internal anal sphincter (IAS) contributes 70–85% to the total resting pressure at the anus. The distension of the rectum, caused by waves of rectal filling, elicits the rectoanal inhibitory reflex (RAIR) resulting in relaxation of the IAS.

- The remainder of the resting closure pressure is contributed by the external anal sphincter (EAS). The EAS can be contracted voluntarily to give added closure pressure when needed, for example in response to a ‘call to stool’ at an inconvenient time or place. This added pressure can be as much as twice the total resting pressure but can be maintained for only a relatively short time.

- The anorectal angle is normally between 60 and 105° but becomes less efficient if it is greater than this. Faecal material in the rectum may increase the angle.
- An intact nerve supply, both autonomic and somatic, sensory and motor.
- The consistency of stool
- Normal activity of the colon, which is affected by diet, activity and absence of infection.
- The individual is cognitively intact, sufficiently mobile and able to go to the toilet independently.

Defaecation

- The act of emptying the rectum.
- The normal frequency of defaecation varies substantially between individuals from three times a day to three times a week.
- For most people the colon is quiet at night but the activity of getting up in the morning and having breakfast stimulates mass peristaltic movements propelling material, which may be solid, liquid or flatus, into the rectum.
- This may be accompanied by quite urgent sensations that the individual recognises as a ‘call to stool’.

- If evacuation is inconvenient, defaecation can be deferred by repeated strong voluntary squeezes of the external anal sphincter, which has the effect of reversing peristalsis, returning faecal material to the rectum and colon, and facilitating a resumption of contraction of the IAS.
- The rectum and colon then relax and the sensation of needing to empty wears off.
- The longer material stays in the colon and rectum the more water is removed and the harder the stools become.

- Once the decision to defaecate is taken, an acceptable site is found and clothing arranged; a sitting or squatting position is usually intuitively adopted, which widens the anorectal angle.
- The knees should be apart and higher than the hip joints; this may require the feet to be on a support such as a stool.
- The trunk should be flexed forward at the hips supported on the forearms, and with the neutral spinal curves maintained.

- Either evacuation will then occur without further effort as a result of peristalsis or it will be necessary for the person to produce a rise in intra-abdominal pressure (i.e. ‘strain’).
- Sometimes a short rise in pressure ‘to get things started’ is all that is needed and peristalsis then takes over; at other times sustained, intense and repeated straining is required, particularly when the stool is hard and dry.
- Once emptying is complete, a closure reflex restores the involved structures to their storage mode and position.

Factors Contributing To Difficulties In Defaecation

1. **Abnormal defaecation techniques**

- An uncoordinated defaecation pattern, there is a failure of anal relaxation.
- Inhibition about sitting on toilet seats.
- If there is excessive perineal descent during defaecation, the rectum descends, the anus does not fully open and as a result the person is more likely to have to strain at stool to empty fully.

2. Abuse
3. Eating disorders
4. Food and drink
5. Ignoring the call to stool/ workplace constipation
6. Irritable bowel syndrome
7. Megacolon and megarectum
8. Menstruation

9. Neurological conditions
10. Pain associated with anal fissure
11. Pregnancy and postpartum
12. Prolapse
13. Psychiatric disorders
14. The elderly

Factors Contributing To Anal Incontinence

- Age
- Anal sphincter Dysfunction
- Childbirth
- Surgery
- Accidents
- Trauma
- Habitual chronic straining at the stool

Physiotherapy Assessment Of Faecal Incontinence And Bowel Dysfunction

- Bowel habit diary
- Obstetric history
- Medication history
- The Faecal Incontinence Quality of Life Scale (FIQLS)
- Abdominal examination
- Neurological assessment
- Anorectal examination
- Perineal examination

	Time of bowel movement/s	Consistency: e.g. pellets, soft, hard, pencil thin, diarrhoea etc.	Did you reach the toilet in time? Yes/no	Did you soil your underwear/ pad? Yes/no	Any blood or mucus? Yes/no	Other comments
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						
Sunday						

Investigations

- Anorectal manometry
- Concentric needle EMG
- Endoanal ultrasonography
- MRI
- Strength duration curves

Treatment For Bowel And Anorectal Dysfunction

- Diet
- Bowel Retraining
- Medication

Physiotherapy For Bowel And Anorectal Dysfunction

- Defaecation technique
- Anal sphincter exercise
- Biofeedback
- Massage for Constipation
- Neuromuscular stimulation
- Anal plugs
- Skin care and body odours

Thank You !