NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Centre for Clinical Practice – Surveillance Programme

Clinical guideline
CG99: Diagnosis and management of idiopathic childhood constipation in primary and secondary care

Publication date
May 2010

Surveillance report for GE (post-consultation)
July 2014

Key findings

			Potential impact on guidance	
			Yes	**No**
Evidence identified from Evidence Update				✓
Evidence identified from literature search				✓
Feedback from Guideline Development Group				✓
Anti-discrimination and equalities considerations				✓
No update	CGUT update	Standard update	Transfer to static list	Change review cycle
✓				

Surveillance recommendation
GE is asked to consider the following proposal which was consulted on for two weeks:

- The constipation in children guideline should not be considered for an update at this time.

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Centre for Clinical Practice – Surveillance Programme

Surveillance review of CG99: Diagnosis and management of idiopathic childhood constipation in primary and secondary care

Background information

Guideline issue date: 2010
4 year review: 2014

NCC: National Clinical Guidelines Centre

Four year surveillance review

1. An Evidence Update was produced for the guideline in 2012 and was used as a source of evidence for the review proposal. The Evidence Update indicated that there is currently insufficient new evidence to invalidate the guideline recommendations.

2. The search strategy for this 4 year surveillance review was slightly different from that of other clinical guidelines due to the large proportion of diagnostic questions covered in the guideline. As such, a search was carried out between 3 February 2012 (the end of the search period for the Evidence Update) and 2 March 2014 to identify observational studies in addition to randomised clinical trials (RCTs) and systematic reviews and relevant abstracts were assessed. Clinical feedback was also obtained from members of the guideline development group (GDG) through a questionnaire survey. Generally the GDG felt that the guideline does not need to be updated.

3. No new evidence was identified through the literature search which would invalidate the guideline recommendations.

Ongoing research

4. None identified.

Anti-discrimination and equalities considerations

5. The GDG indicated that there is poor provision for management of idiopathic constipation in children with additional needs (both learning and physical difficulties) and often these children are excluded from mainstream services. However, the guideline scope covers all newborns, infants and children up to their 18th birthday who have idiopathic constipation and no evidence on management of idiopathic constipation specifically conducted in children with learning or physical difficulties was identified through the review.

Implications for other NICE programmes

6. None identified.

Summary of stakeholder feedback

7. Stakeholders were consulted on the following proposal over a two week consultation period:

The Constipation in children guideline should not be considered for an update at this time.

8. In total, six stakeholders commented on the surveillance review proposal recommendation during the two week consultation period. The table of stakeholder comments can be viewed in Appendix 1.

9. One stakeholder agreed with the surveillance review proposal to not update the guideline at this time and five stakeholders disagreed.

10. The stakeholders that disagreed with the decision not to update the guideline generally felt that there should be consideration of the use of rectal irrigation prior to referral for the ACE procedure. In particular, two studies on rectal irrigation were highlighted however one study had been identified through the surveillance review but was excluded because the study population included children with anorectal anomaly whilst the guideline scope excluded children with constipation with a known cause. The second study was a small scale retrospective study and, from an assessment of the abstract, there was no evidence that the included population had taken an optimum amount of medicine for an appropriate time with adequate support before undertaking transanal irrigation treatment. As such, it would be pertinent to await further research on the long-term benefits and harms of this management option in children with idiopathic constipation before considering for inclusion in the guideline.

11. Feedback on whether the use of rectal irrigation prior to the ACE procedure should be considered for inclusion in the guideline was sought from four members of the GDG. The feedback was mixed but generally indicated that the research evidence in this area is not robust and it

would be premature to consider this procedure for inclusion in the guideline at this time. In particular, there is an absence of an agreed way of identifying those patients who are most likely to benefit from rectal irrigation, and those most likely to fail, and a therapeutic trial may be useful for identifying patients who are likely to to at least tolerate the procedure in order to determine efficacy.

Conclusion

12. Through the 4 year surveillance review of CG99 and subsequent consultation with stakeholders no new evidence was identified which may potentially change the direction of current guideline recommendations. The proposal is not to update the guideline at this time.

Surveillance recommendation

13. GE is asked to consider the following proposal which was consulted on for two weeks:

- The Constipation in children guideline should not be considered for an update at this time.

Mark Baker – Centre Director
Sarah Willett – Associate Director
Emma McFarlane – Technical Adviser

Centre for Clinical Practice
July 2014

Appendix 1 Surveillance review consultation

Surveillance review consultation comments table
16-27 June 2014

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
PromoCon	Disagree	The consideration of the use of rectal irrigation prior to referral for ACE procedure	Comments on proposal not to update the guideline Page 8 states that children with unresolved constipation should be referred for consideration for ACE procedure. However in clinical practice children are increasingly now undertaking a trial of rectal irrigation prior to being considered for an ACE procedure. For many children this option is proving very effective and means they do not have to undergo a surgical procedure to help resolve their intractable constipation and soiling. No mention of rectal irrigation is included in the current guideline and as the use of rectal irrigation is now considered a viable option for many children I feel the guideline should be updated to include it. Int J Pediatr. 2014;2014:954315. doi: 10.1155/2014/954315. Epub 2014 May 6. **Peristeen (©) transanal irrigation system for paediatric faecal incontinence: a single centre experience.**	Thank you for your comment and for highlighting references on trans anal irrigation. The study by Nasher et al., 2014 was not identified through the surveillance review because it published after the literature search cut-off date. The study by Pacilli et al., 2014 was identified through the literature search for the surveillance review. This study was excluded, however, because an assessment of the abstract indicated that the study population included children with anorectal anomaly whilst the guideline scope excluded children with constipation with a known cause. In terms of the study by Nasher et al., the results reported in the abstract indicated that all patients had an improvement in their faecal

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			Nasher O, Hill RE, Peeraully R, Wright A, Singh SJ. Author information: Department of Paediatric Surgery, Queen's Medical Centre, Nottingham University Hospital NHS Trust, Derby Road, Nottingham NG7 2UH, UK. **Abstract** Aim. To evaluate the efficacy of the Peristeen (©) transanal irrigation system when treating faecal incontinence in children due to chronic idiopathic constipation. Methods. A retrospective study was conducted of the first cohort of patients affected with faecal incontinence and referred to our centre for Peristeen (©) transanal irrigation treatment between January 2010 and December 2012. Patients with neurogenic bowel disturbance were excluded. A previously described and validated faecal continence scoring system was used to assess bowel function and social problems before and after treatment with Peristeen (©) . Results. 13 patients were referred for Peristeen (©) transanal irrigation during the study period. Mean time of using Peristeen (©) was 12.6 months (±0.6 months) and mean length of follow-up was 21.2 months (±0.9 months). All patients were noted to have an improvement in their faecal continence score, with a mean improvement from 9.7 ± 1.4 to 14.8 ± 2.7 (P = 0.0008) and a reduction in episodes of soiling	continence score with some increase in quality of life scores. This was a small scale (n=13) retrospective study and, from an assessment of the abstract, there was no evidence that the included population had taken an optimum amount of medicine for an appropriate time with appropriate support before undertaking transanal irrigation treatment. As such, it would be pertinent to await further research on the long-term benefits and harms of this management option in children with idiopathic constipation before considering for inclusion in the guideline.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			and increasing in quality of life scores. Conclusion. In this initial study, Peristeen (©) appears to be a safe and effective bowel management system, which improves bowel function and quality of life in children affected with faecal incontinence as a result of chronic idiopathic constipation, Hirschsprung's disease, and anorectal malformations. J Pediatr Surg. 2014 Feb;49(2):269-72; discussion 272. doi: 10.1016/j.jpedsurg.2013.11.036. Epub 2013 Nov 18. **Use of Peristeen® transanal colonic irrigation for bowel management in children: a single-center experience.** Pacilli M[1], Pallot D[2], Andrews A[2], Downer A[2], Dale L[2], Willetts I[2]. Author information: [1]Department of Paediatric Surgery and Urology, Oxford University Hospital, Oxford, UK. Electronic address: maurizio.pacilli@nhs.net. [2]Department of Paediatric Surgery and Urology, Oxford University Hospital, Oxford, UK. **Abstract** ***AIMS:*** Transanal colonic irrigation has been shown to be effective in bowel management program in adults. However, there exist limited data in children. We appraised the effectiveness of this technique in a series of children with incontinence or constipation and overflow	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			soiling. ***METHODS:*** Following ethical approval, a review of children with incontinence or constipation on a bowel management program with Peristeen® transanal colonic irrigation treated between 2007 and 2012 was performed. Irrigations were performed with a volume of 10-20 ml/kg of water with schedules depending on patient response. Data are reported as median (range). ***RESULTS:*** Twenty-three patients were reviewed. Median age at commencement of irrigations was 7 (2-15) years. Median follow-up is 2 (0.7-3.4) years. Diagnoses include the following: spina bifida (n=11), anorectal anomaly (n=6), Hirschsprung's (n=1), and other complex anomalies (n=5). Sixteen (70%) patients had associated anomalies. Twelve (52%) had constipation and overflow soiling, and 11 (48%) had fecal incontinence. Twenty (87%) had associated urinary wetting. Sixteen (70%) children used alternate-day irrigations, 4 (17%) daily irrigations, and 3 (13%) every third-day irrigations. Nine (39%) patients were taking oral laxatives. Sixteen (70%) reported to be clean and 3 (13%) reported a significant improvement, although were having occasional soiling. Four patients (17%) did not tolerate the irrigations and underwent subsequent colostomy formation for intractable soiling. ***CONCLUSIONS:***	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			In our experience, Peristeen® transanal colonic irrigation is an effective method of managing patients with focal soiling in childhood. Majority (83%) of children achieve social fecal continence or a significant improvement with occasional soiling. This was accompanied by high parental satisfaction. Peristeen® transanal colonic irrigation is a valid alternative to invasive surgical procedures and should be considered the first line of treatment for bowel management in children with soiling where simple pharmacological maneuvers failed to be effective.	
Royal College of Paediatrics and Child Health	Disagree x1 / x3 Agree In addition to the other reviewers in agreement, the BACD members are not aware of additional evidence that would require a revision at this time (and agree that the review of current evidence presented does not justify a revision).		While the RCPCH generally agree that this guideline should not be updated, we have received a comment which states that it would be nice to see scientific evidence being reviewed regarding the role of probiotics in constipation treatment (e.g. protectis from biogaia).	Thank you for your comment. During guideline development the GDG felt it was not possible to recommend specific probiotics due to a lack of consistent evidence and the new evidence identified for the surveillance review still does not give a clear and consistent view on the benefits and harms of probiotics for management of idiopathic constipation. Further research is needed before considering probiotics for inclusion in the guideline.
Royal College	Disagree		Comments on proposal not to update the	Thank you for your comment.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
of Nursing			guideline The RCN received feedback to indicate that the guideline needs to be updated to include consideration of the use of rectal irrigation prior to referring children with intractable constipation and soiling for ACE (Page 8). This is increasingly becoming mainstream practice now and it is important that the guideline reflects this.	Please see the response below regarding the use of transanal irrigation in children with constipation.
			Members highlighted that the following published research should be taken into account when considering whether to update this guidance: • *Peristeen© Transanal Irrigation System for Paediatric Faecal Incontinence: A Single Centre Experience*, Omar Nasher, Richard E. Hill, Riyad Peeraully, Ali Wright, and Shailinder J. Singh • *Use of Peristeen® transanal colonic irrigation for bowel management in children: a single-center experience,* Pacilli M, Pallot D, Andrews A, Downer A, Dale L, Willetts I	Thank you for your comment and for highlighting references on trans anal irrigation. The study by Nasher et al., 2014 was not identified through the surveillance review because it published after the literature search cut-off date. The study by Pacilli et al., 2014 was identified through the literature search for the surveillance review. This study was excluded, however, because an assessment of the abstract indicated that the study population included children with anorectal anomaly whilst the guideline scope excluded children with constipation with a known cause. In terms of the study by Nasher et

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
				al., the results reported in the abstract indicated that all patients had an improvement in their faecal continence score with some increase in quality of life scores. This was a small scale (n=13) retrospective study and, from an assessment of the abstract, there was no evidence that the included population had taken an optimum amount of medicine for an appropriate time with appropriate support before undertaking transanal irrigation treatment. As such, it would be pertinent to await further research on the long-term benefits and harms of this management option in children with idiopathic constipation before considering for inclusion in the guideline.
Paediatric Continence Forum	Disagree		This guideline needs to be updated to include the consideration of the use of trans anal irrigation prior to referral for ACE for children with intractable constipation and soiling. Whilst we appreciate that at the time that this guideline being developed there was no published evidence as to best practice for washout procedure, a body of evidence has now built up that supports its effectiveness.	Thank you for your comment and for highlighting references on trans anal irrigation. The study by Nasher et al., 2014 was not identified through the surveillance review because it published after the literature search cut-off date. The study by Pacilli et al., 2014 was identified through the

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			A research article published in the *International Journal of Paediatrics* evaluated the efficacy of Peristeen – a trans anal irrigation system – when used in the treatment of faecal incontinence in children with chronic idiopathic constipation. It found that Peristeen was a "safe and effective" bowel management system, which "improves bowel function and quality of life" in children with faecal incontinence as a result of chronic idiopathic constipation, Hirschsprung's disease, and anorectal malformations. • Reference: Omar Nasher, Richard E. Hill, Riyad Peeraully, Ali Wright, and Shailinder J. Singh, "Peristeen© Transanal Irrigation System for Paediatric Faecal Incontinence: A Single Centre Experience," International Journal of Pediatrics, vol. 2014, Article ID 954315, 4 pages, 2014. doi:10.1155/2014/954315 Another research article, published in the *Journal of Paediatric Surgery*, looked at the effectiveness of trans anal colonic irrigation in children using Peristeen. It found that Peristeen was an "effective method of managing patients with faecal soiling in childhood, with 83% of children in the study achieving social faecal continence or a significant improvement with	literature search for the surveillance review. This study was excluded, however, because an assessment of the abstract indicated that the study population included children with anorectal anomaly whilst the guideline scope excluded children with constipation with a known cause. In terms of the study by Nasher et al., the results reported in the abstract indicated that all patients had an improvement in their faecal continence score with some increase in quality of life scores. This was a small scale (n=13) retrospective study and, from an assessment of the abstract, there was no evidence that the included population had taken an optimum amount of medicine for an appropriate time with appropriate support before undertaking transanal irrigation treatment. As such, it would be pertinent to await further research on the long-term benefits and harms of this management option in children with idiopathic constipation before considering for inclusion in the guideline.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			occasional soiling. It described Peristeen as a valid alternative to invasive surgical procedures and said that it should be considered the first line of treatment for bowel management in children with soiling where simple pharmacological treatments failed to be effective. • Reference: Use of Peristeen® transanal colonic irrigation for bowel management in children: a single-center experience. Pacilli M, Pallot D, Andrews A, Downer A, Dale L, Willetts I. J Pediatr Surg. 2014 Feb;49(2):269-72; discussion 272. doi: 10.1016/j.jpedsurg.2013.11.036. Epub 2013 Nov 18. Given these two articles, the former of which was published in May 2014 – two months after the evidence search concluded, we believe that methods of transanal irrigation should be referenced in an updated clinical guideline. Specifically, it should be mentioned that trans anal irrigation should be considered as an option before going to an ACE.	
			The review did not give adequate consideration to other treatments either in current use in adults or in clinical trials in children, which may be worthy of consideration for the future. These	Thank you for providing some evidence. We have considered two of the studies (Clarke et al., 2012 and Yik and Leong., 2012) as the

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			treatments include transabdominal electrical stimulation, as well as interferential therapy, sacral nerve stimulation and tibial nerve stimulation. Since the mechanism of action for these therapies are unclear, successful implementation would require safety data, demonstration of efficacy against clearly defined outcomes, and stratification of patients to define those most likely to benefit. A body of evidence already exists for the use of these treatments, which can be found below: • Transabdominal electrical stimulation increases colonic propagating pressure waves in paediatric slow transit constipation Melanie C.C. Clarke, Anthony G. Catto-Smith, Sebastian K. King, Phil G. Dinning, Ian J. Cook, Janet W. Chase, Susan M. Gibb, Val J. Robertson, Di Simpson, John M. Hutson, Bridget R. Southwell Journal of pediatric surgery 1 December 2012 (volume 47 issue 12 Pages 2279-2284 DOI: 10.1016/j.jpedsurg.2012.09.021)	majority of the studies highlighted were published before the search cut-off date whilst the study by Yik and Ismail., 2012 was already included in the surveillance review. Overall, the evidence from small-scale retrospective studies suggests that that transcutaneous electrical nerve stimulation may improve constipation symptoms in children. However, further research in larger studies is needed to determine the long-term benefits and harms of transcutaneous electrical stimulation as a management option in children with constipation before considering for inclusion in the guideline.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			• The impact of transcutaneous electrical stimulation therapy on appendicostomy operation rates for children with chronic constipation--a single-institution experience. Yik YI1, Leong LC, Hutson JM, Southwell BR. J Pediatr Surg. 2012 Jul;47(7):1421-6. doi: 10.1016/j.jpedsurg.2012.01.017. • Home transcutaneous electrical stimulation to treat children with slow-transit constipation. Yik YI1, Ismail KA, Hutson JM, Southwell BR J Pediatr Surg. 2012 Jun;47(6):1285-90. doi:10.1016/j.jpedsurg.2012.03.037. • Long-term effects of transabdominal electrical stimulation in treating children with slow-transit constipation. Leong LC1, Yik YI, Catto-Smith AG, Robertson VJ, Hutson JM, Southwell BR. J Pediatr Surg. 2011 Dec;46(12):2309-12. doi: 10.1016/j.jpedsurg.2011.09.022. • Slow-transit constipation with concurrent upper gastrointestinal dysmotility and its response to transcutaneous electrical stimulation.	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			Yik YI1, Clarke MC, Catto-Smith AG, Robertson VJ, Sutcliffe JR, Chase JW, Gibb S, Cain TM, Cook DJ, Tudball CF, Hutson JM, Southwell BR. Pediatr Surg Int. 2011 Jul;27(7):705-11. doi: 10.1007/s00383-011-2872-x. Epub 2011 Mar 4. • Daily transabdominal electrical stimulation at home increased defecation in children with slow-transit constipation: a pilot study. Ismail KA1, Chase J, Gibb S, Clarke M, Catto-Smith AG, Robertson VJ, Hutson JM, Southwell BR. J Pediatr Surg. 2009 Dec;44(12):2388-92. doi: 10.1016/j.jpedsurg.2009.07.063. • Home transcutaneous electrical stimulation to treat children with slow-transit constipation. Yik YI1, Ismail KA, Hutson JM, Southwell BR. J Pediatr Surg. 2012 Jun;47(6):1285-90. doi: 10.1016/j.jpedsurg.2012.03.037. • Decreased colonic transit time after transcutaneous interferential electrical stimulation in children with slow transit constipation.	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			Clarke MC1, Chase JW, Gibb S, Robertson VJ, Catto-Smith A, Hutson JM, Southwell BR. J Pediatr Surg. 2009 Feb;44(2):408-12. doi: 10.1016/j.jpedsurg.2008.10.100. • The antegrade continence enema successfully treats idiopathic slow-transit constipation. King SK1, Sutcliffe JR, Southwell BR, Chait PG, Hutson JM. J Pediatr Surg. 2005 Dec;40(12):1935-40. • Paediatric constipation for adult surgeons - article 2: new microscopic abnormalities and therapies. King SK1, Sutcliffe JR, Hutson JM, Southwell BR. ANZ J Surg. 2004 Oct;74(10):890-4.	
Coloplast	Disagree		We are disappointed to see that recent evidence on the usage of Trans Anal Irrigation has not been considered during the review of Clinical Guideline 99. Although there was little to no evidence on the effectiveness of the usage of trans anal irrigation in children when the guideline was first development, the contrary is now the case. Several articles have been published which show that trans anal irrigation should be	Thank you for your comment and for highlighting references on trans anal irrigation. The study by Nasher et al., 2014 was not identified through the surveillance review because it published after the literature search cut-off date. The study by Pacilli et al., 2014 was identified through the

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			considered ahead of ACE as the first line of treatment for bowel management in children, where pharmacological methods have not been effective. An article authored by researchers at the University of Nottingham, which was published in the *International Journal of Paediatrics* in May 2014 looked at the effectiveness of the trans anal irrigation product Peristeen in treating faecal incontinence in children with chronic idiopathic constipation. The study, which involved 13 patients measured over a period of almost 2 years, found that Peristeen was a "safe and effective" bowel management system. It also found that Peristeen improved bowel function and quality of life in children affected with faecal incontinence as a result of chronic idiopathic constipation. This article was likely missed as the evidence search only stretched until March 2014. • Reference: Omar Nasher, Richard E. Hill, Riyad Peeraully, Ali Wright, and Shailinder J. Singh, "Peristeen© Transanal Irrigation System for Paediatric Faecal Incontinence: A Single Centre Experience," International Journal of Pediatrics, vol. 2014, Article ID 954315, 4 pages, 2014.	literature search for the surveillance review. This study was excluded, however, because an assessment of the abstract indicated that the study population included children with anorectal anomaly whilst the guideline scope excluded children with constipation with a known cause. In terms of the study by Nasher et al., the results reported in the abstract indicated that all patients had an improvement in their faecal continence score with some increase in quality of life scores. This was a small scale (n=13) retrospective study and, from an assessment of the abstract, there was no evidence that the included population had taken an optimum amount of medicine for an appropriate time with appropriate support before undertaking transanal irrigation treatment. As such, it would be pertinent to await further research on the long-term benefits and harms of this management option in children with idiopathic constipation before considering for inclusion in the guideline.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			doi:10.1155/2014/954315 This research is supplemented by an earlier study from November 2013, published in the International Journal of Paediatrics. In this article, researchers from the University of Oxford examined the usage of Peristeen for bowel management in 23 children between the ages of 2 and 15. Much like with the later article, this article found that the majority - 83% of the children – achieved social faecal continence or a significant improvement with occasional soiling. Furthermore, the study found that there were high levels of parental satisfaction. This article fell within the period of the evidence search but does not seem have to been included in the review. • Reference: Use of Peristeen® transanal colonic irrigation for bowel management in children: a single-center experience. Pacilli M, Pallot D, Andrews A, Downer A, Dale L, Willetts I. J Pediatr Surg. 2014 Feb;49(2):269-72; discussion 272. doi: 10.1016/j.jpedsurg.2013.11.036. Epub 2013 Nov 18. In light of these two articles, we believe that proper consideration should be given as to whether trans anal irrigation should be included	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			in an updated clinical guideline. Given the effectiveness of trans anal irrigation there is a strong argument that it should be considered as a treatment option ahead of ACE.	
			We would also like to highlight that trans anal irrigation has been proven to be effective treatment in both children with neurogenic bowel dysfunction, and for children with functional bowel dysfunction. We believe that it should be made clear that trans anal irrigation should be made equally available for both of these groups, rather than one or the other. Please find below citations to academic articles which provide evidence that trans anal irrigation in children is effective irrespective of the source of their bowel dysfunction: Use of Peristeen transanal colonic irrigation for bowel management in children: a single-centre experience Pacilli M, et al. J Pediatr Surg 2014;49:269–272 Peristeen anal irrigation as a substitute for the MACE procedure in children who are in need of reconstructive bladder surgery Alenezi H, et al. Can Urol Assoc J 2014;8:e12–15 The effects of transanal irrigation as a stepwise	Thank you for providing evidence on transanal irrigation. The studies by Nasher et al., 2014 and Pacilli et al., 2014 have been addressed in the response above whilst the Ausili et al., 2010 study was not considered because it published before the search cut-off date. The abstracts of the remaining studies were considered however, the population within these studies was not idiopathic constipation and therefore the studies do not meet the guideline inclusion criteria.

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			bowel management program on the quality of life of children with spina bifida and their caregivers Choi EK, et al. Spinal Cord 2013;51:384–388 Peristeen integrated transanal irrigation system successfully treats faecal incontinence in children Corbett P, et al. J Pediatr Urol 2013 [Epub ahead of print] Transanal irrigation and intestinal transit time in children with myelomeningocele Marte A and Borrelli M. Minerva Pediatr 2013;65:287–293 Transanal irrigation in myelomeningocele children: an alternative, safe and valid approach for neurogenic constipation Ausili E, et al. Spinal Cord 2010;48:560–565 Transanal irrigation for the treatment of neuropathic bowel dysfunction López Pereira P, et al. J Pediatr Urol 2009;6:134–138 An evidence-based review of the use of transanal irrigation in children and young people with neurogenic bowel Bray L and Sanders C. Spinal Cord 2013;51:88–93	

Stakeholder	Do you agree that the guidance should not be updated?	Comments on equality issues or areas excluded from the original scope	Comments If you disagree please explain why	Response
			J Pediatr Urol. 2014 Apr;10(2):219-22. doi: 10.1016/j.jpurol.2013.08.006. Epub 2013 Sep 10. Peristeen integrated transanal irrigation system successfully treats faecal incontinence in children. Corbett P, Denny A, Dick K, Malone PS, Griffin S, Stanton MP Int J Pediatr. 2014;2014:954315. doi: 10.1155/2014/954315. Epub 2014 May 6. Peristeen (©) transanal irrigation system for paediatric faecal incontinence: a single centre experience. Nasher O, Hill RE, Peeraully R, Wright A, Singh SJ	
Aspire Pharma Limited	Disagree		<u>Comments on proposal not to update the guideline</u> We have launched a new suppository in the UK for use in the treatment of constipation. The product is Lecicarbon A suppository (PL28318/0001) and is licensed for adults and children over 12 years of age. Lecicarbon C (PL28318/0002) is licensed for children below 12 years of age. We intend to launch Lecicarbon C in the foreseeable future. Lecicarbon A and C have been used in Germany for over 80 years and the unlicensed German import (lecicarbon Erwachsene) was mentioned in the Guidelines for management of neurogenic bowel	Thank you for highlighting that Lecicarbon suppositories are now available in the UK. Through the surveillance review no studies on Lecicarbon suppositories were identified therefore it is not possible to assess the impact on the guideline at this time. The guideline currently recommends that polyethylene glycol 3350 plus electrolytes are the first-line treatment for maintenance therapy and no new evidence was identified through the surveillance review

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			dysfunction in individuals with Central nervous conditions initiated by MASCIP (multidisciplinary association of spinal cord injured professionals). The suppository is indicated for the treatment of all forms of frequent constipation. The product is licensed for long term use and is not habit forming. Lecicarbon works by releasing carbon dioxide, which stimulates peristalsis causing a bowel movement in 15-30 minutes. (copies of the SmPCs can be found on the MHRA website or our product website: www.lecicarbon.co.uk) This is a new product with a different mode of action to other laxatives on the market, which can be used for the treatment of constipation in children and young adults; therefore we believe that the guideline should be updated to reflect this.	which would change the direction of this recommendation.

Appendix 2 Decision matrix

The table below provides summaries of the evidence for key questions for which studies were identified.

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
99-01: What is the diagnostic value of the history-taking and the physical examination in diagnosing chronic idiopathic constipation in newborns, infants and children?			
Prognostic factors A systematic review indicated that early intervention for constipation may be associated with improved recovery.[1] This results was considered to be consistent with a statement in the introduction of the guideline that early identification and effective treatment can improve outcomes.	A chart review and a cross-sectional study indicated that the Rome II criteria are still appropriate for the diagnosis of functional constipation in young children[2] although the paediatric Rome III criteria for functional constipation are less restrictive than the Rome II criteria.[3] The use of a bladder/bowel dysfunction questionnaire in a paediatric urology department was evaluated in one study however, the ICD-9 diagnosis of constipation was not associated with higher scores for constipation related items in the questionnaire.[4] One study investigating clinical characteristics of functional constipation at paediatric gastroenterology clinics suggested the following: a history of constipation in infancy, picky-eating, lack of exercise, and retentive posturing, greater than 60% rate of hard stools, painful stools, a history of large faecal mass in rectum, and disappearance of constipation symptoms after passing a large stool.[5] Furthermore, a study reporting the development of an algorithm to identify constipation in children with autism spectrum disorders in primary care suggested that subtle or atypical symptoms might indicate the presence of constipation	None identified.	The majority of the clinical characteristics described in the identified new evidence are in-line with the key components of history-taking to diagnose constipation in children outlined in the guideline.

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
	although no specific detail was provided in the abstract.[6]		
99-02: What is the diagnostic value of the digital rectal examination in children with chronic idiopathic constipation?			
No new key evidence was found for this question.	No new evidence identified.	None identified.	No relevant evidence identified.
99-03: What is the diagnostic value of the gastrointestinal endoscopy in children with chronic idiopathic constipation?			
No new key evidence was found for this question.	No new evidence identified.	None identified.	No relevant evidence identified.
99-04: What is the prevalence of hypothyroidism and coeliac disease in children with chronic constipation?			
No new key evidence was found for this question.	The results of a prospective cohort study of children who met the Rome III criteria for constipation indicated that 1.9% of the cohort had biopsy-proven coeliac disease which was considered higher that the prevalence of coeliac disease in the Netherlands.[7]	None identified.	The identified new evidence looked at the associations between coeliac disease and symptoms of constipation therefore, it is unlikely that the results would impact on the guideline recommendation which states to test for coeliac disease and hypothyroidism in the ongoing management of intractable constipation in children and young people only if requested by specialist services.
99-05: What is the diagnostic value of the anorectal manometry in children with chronic idiopathic constipation?			
No new key evidence was found for	No new evidence identified.	None identified.	No relevant evidence

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
this question.			identified.
99-06: What is the diagnostic value of plain abdominal radiography to diagnose chronic idiopathic constipation in children?			
No new key evidence was found for this question.	One case review evaluating criteria which could be applied to objectively assess constipation status in children based on abdominal radiographs reported that individual parameters on abdominal radiograph included total stool length greater than 33.4 cm and stool length in the rectum greater than 5.9 cm.[8] One case review reported that plain radiographs may be a useful tool for the diagnosis of faecal impaction[9] whilst a retrospective cohort study indicated that abdominal radiograph was performed more frequently in misdiagnosed children.[10] Finally, one systematic review concluded that there was insufficient evidence for a diagnostic association between clinical symptoms of constipation and faecal loading on abdominal radiographs.[11]	It was highlighted that when children are on medication and abdominal palpitation doesn't reveal a faecal mass then abdominal radiography may be useful.	The guideline recommends that plain abdominal radiograph should not be used to make a diagnosis of idiopathic constipation and should be considered only if requested by specialist services in the ongoing management of intractable idiopathic constipation and no new consistent evidence was identified which would impact on these recommendations.
99-07: What is the diagnostic value of the rectal biopsy in children with chronic idiopathic constipation?			
No new key evidence was found for this question.	A retrospective analysis was identified which evaluated infants having a suction rectal biopsy to exclude Hirschsprung disease.[12] The results of the analysis indicated that Hirschsprung disease occurred less often in premature infants compared with term infants. One retrospective study focusing on clinical signs and symptoms of Hirschsprung disease in older children reported that recurrent gastrointestinal infection with vomiting and hospitalisation occurred more frequently in children with Hirschsprung disease	None identified.	Taken together, the new evidence implies the diagnostic value of rectal biopsy in confirming the diagnosis of Hirschsprung's disease. However, the new evidence does not confirm specific clinical features as being good predictors of

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
	whilst rectal biopsy confirmed the diagnosis.[13] Lastly, the results of one study indicated that faecal calprotectin had limited value in differentiating functional constipation from Hirschsprung's disease.[14]		Hirschsprung disease. As such, there is unlikely to be any impact on the guideline recommendation which states that rectal biopsy should not be performed unless any of the following clinical features of Hirschsprung's disease are or have been present: • delayed passage of meconium (more than 48 hours after birth in term babies) • constipation since first few weeks of life • chronic abdominal distension plus vomiting • family history of Hirschsprung's disease • faltering growth in addition to any of the previous features.

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
99-08: What is the diagnostic value of transit studies in children?			
No new key evidence was found for this question.	No new evidence identified.	None identified.	No relevant evidence identified.
99-09: What is the diagnostic value of the abdominal ultrasound in children with chronic constipation?			
No new key evidence was found for this question.	One study was identified which compared digital with transabdominal ultrasound to assess the rectal filling state in children with urological problems.[15] Agreement between the two tests for detecting rectal mass was 82.5%.	None identified.	The identified study did not indicate whether use of abdominal ultrasound adds any useful information over and above that ascertained through thorough physical examination and history-taking in the diagnosis of chronic idiopathic constipation. As such, the new evidence is unlikely to change the direction of the guideline recommendations which state that abdominal ultrasound should not be used to make a diagnosis of idiopathic constipation and should only be considered in the ongoing management of intractable idiopathic constipation only if

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
			requested by specialist services.
99-10: What is the effectiveness of pharmacological and surgical intervention for disimpaction in children with chronic idiopathic constipation?			
An RCT was included which compared disimpaction with rectal enemas versus oral laxatives in children aged 4–16 years with severe rectal faecal impaction.[16] No difference in successful disimpaction was observed between the enema and PEG groups at follow-up two weeks after disimpaction. The Evidence Update concluded that the results of this study are unlikely to impact on the guideline which currently recommends first-line treatment of impaction with PEG 3350 plus electrolytes.	One RCT compared a single milk and molasses enema in the emergency department with PEG 3350 as paediatric faecal impaction treatment.[17] At day 3, more patients in the enema arm reported ideal stool consistency however, at day 5 no difference between groups was noted. Half in the enema arm were reported as upset by emergency department therapy, whereas no children in PEG arm were upset.	GDG feedback indicated that there may be variation in dose administration of picolax and sodium picosulfate in clinical practice. However, the Guidelines Manual (2012) states that readers of guidelines are expected to refer to the summary of product characteristics for details of drug dosages.	This new evidence is unlikely to change the direction of the guideline recommendation which states that PEG 3350 should be used as first-line treatment of disimpaction and enemas should only be used after oral therapy has failed.
99-11: What is the clinical effectiveness of pharmacological interventions for ongoing treatment/maintenance in children with chronic idiopathic constipation?			
An RCT examined maintenance treatment with rectal enemas plus oral PEG compared with oral PEG in children aged 8-18 years.[18] The results indicated no difference in the primary outcome between the two groups (defined as greater than or equal to three bowel movements per week). The study was deemed unlikely to impact on the guideline as initial disimpaction was performed with	Polyethylene glycol A Cochrane systematic review evaluated the efficacy and safety of osmotic and stimulant laxatives used to treat functional childhood constipation.[20] The results indicated that polyethylene glycol (PEG) preparations may be superior to placebo, lactulose and milk of magnesia for childhood constipation. Furthermore, two reviews[21,22]; two RCTs[23,24] and a non-randomised study[25] indicated a benefit of PEG preparations for functional constipation in children. Finally, One RCT reported that the number of stools/week was higher in	The GDG indicated that there is poor provision for management of idiopathic constipation in children with additional needs (both learning and physical difficulties) and often these children are excluded from mainstream services. However, the guideline	The identified new evidence is supportive of the use of PEG for functional constipation however, it was not clear from an assessment of the abstracts if the interventions included PEG alone or in combination with electrolytes which is the

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
enemas whilst PEG was administered without electrolytes and neither of these practices are recommended in the guideline. Another RCT compared maintenance treatment with PEG 4000 without electrolytes versus milk of magnesia in children aged 1-4 years with at least one month of functional constipation.[19] A significant improvement (defined as the proportion of patients with three or more bowel movements per week) was observed in the PEG group. The Evidence Update concluded that this evidence reinforces current recommendations on maintenance therapy with PEG in the guideline.	children with constipation randomised to PEG-electrolytes whilst PEG-only was better tolerated and accepted.[26] <u>Mineral oil</u> One RCT comparing the laxative effect of cassia fistula emulsion (CFE) with mineral oil (MO) on paediatric functional constipation found the severity of pain during defecation and consistency of stool improved significantly better in CFE group than MO group, but there were not any significant differences between the two groups in faecal incontinence and retentive posturing.[27] <u>Lubiprostone</u> One non-randomised study assessing the safety and efficacy of different doses of lubiprostone in children and adolescents with functional constipation reported that spontaneous bowel movements increased compared with baseline.[28] <u>Prucalopride</u> One non-randomised study evaluated the efficacy, safety, and tolerability of prucalopride oral solution in children, ages 4 years or older to 12 years or younger, with functional constipation.[29] Prucalopride treatment resulted in a mean bowel movement frequency of 6.8/week, normal stool consistency, and reduced frequency of faecal incontinence.	scope covers newborns, infants and children up to their 18th birthday who have idiopathic constipation and no evidence specifically conducted in children with learning or physical difficulties was identified through the review.	first-line maintenance therapy recommended in the guideline. As such, it is not possible to determine the impact of this new evidence on the guideline. Promising benefits of lubiprostone and prucalopride were reported in two studies however, currently these pharmaceuticals are not licensed for use in children or adolescents under 18 years and evidence comparing these treatments with PEG 3350 + electrolytes are necessary to enable their place in the management of idiopathic constipation in children to be established.

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
99-12: What are the adverse effects of the medium- to long-term use of laxatives?			
No new key evidence was found for this question.	One case series which also incorporated a review of case reports suggested there may be a risk of phosphate toxicity in children and adolescents treated with laxatives.[30] However, a review outlining the evidence for the safety of laxatives used in chronic paediatric-functional constipation was unable to draw any meaningful conclusions due to a lack of evidence in this population.[31]	None identified.	Laxatives are currently recommended as maintenance therapy as soon as the child or young person's bowel is disimpacted and no new evidence was identified which would change the direction of this recommendation.
99-13: What is the effectiveness of the Antegrade Colonic Enema (ACE) procedure in children with chronic idiopathic constipation?			
No new key evidence was found for this question.	Two retrospective reviews[32,33] and a case series[34] of children with constipation indicated improvements in outcomes after antegrade continence enemas (ACE). Finally, one retrospective review was identified which assessed the rate of ACE bowel management failure in paediatric refractory constipation, and the management and long term outcome of these patients.[35] The results indicated that 16% failed successful bowel management after antegrade continence enema requiring additional intervention.	None identified.	No new evidence was identified on choice of washout solution, its type and volume and why ACE works in some children and not in others. The identified new evidence is unlikely to change the direction of the current recommendation which states that children and young people with idiopathic constipation who still have unresolved symptoms on optimum management should be

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
			referred to a paediatric surgical centre to assess their suitability for an ACE procedure.
99-14: What is the clinical effectiveness of the following complementary therapies for ongoing treatment/maintenance in children with chronic idiopathic constipation? • abdominal massage • reflexology • hypnotherapy • osteopathy • cranial osteopathy • craniosacral therapy • homeopathy.			
No new key evidence was found for this question.	One RCT assessed the effect of physiotherapy (muscular training, abdominal massage and diaphragmatic breathing) plus laxatives compared with laxatives alone in children and adolescents with functional constipation.[36] After 6 weeks of treatment, the frequency of bowel movements was higher in the physiotherapy group although the frequency of faecal incontinence was no different between the groups.	None identified.	The guideline does not currently include any recommendations on complementary therapies for treatment/maintenance in children with chronic idiopathic constipation due to a lack of available evidence. Although the identified RCT indicated a potential a benefit of physiotherapy over medication for functional constipation, further data on long-term outcomes

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
			and evidence of cost effectiveness is needed before considering for inclusion in the guideline.
99-15: What is the effectiveness of the information, support and advice that children/young people and their parents / carers are given regarding the treatment/management of idiopathic constipation?			
No new key evidence was found for this question.	One study was identified which compared a nurse-led intervention focusing on self-help psychology practice with routine consultant-led care as recommended in CG99.[37] Less 'nurse-led' children were still constipated passing less than 3 stools per week compared with those receiving consultant-led care although the proportion of children, over 4 years, free from soiling accidents was similar in the nurse-led group and with consultant-led care. Although this study aimed to answer one of the research recommendations in the guideline this was a service evaluation to determine the appropriateness of developing a nurse-led intervention. Further research is need in a trial setting to formally assess the cost effectiveness of specialist nurse-led services.	The GDG indicated that the guideline would benefit from including more emphasis on education of health care professionals in how to organise and provide primary and secondary care services for children with constipation.	
99-16: What is the clinical effectiveness of the following for ongoing treatment/maintenance in children with chronic idiopathic constipation? • increasing physical activity • dietary modifications • increasing fluid intake • excluding cows‘ and goats‘ milk protein from diet.			
Probiotics	Excluding cows’ milk	Feedback from the GDG	

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
A systematic review and two RCTs evaluating probiotics were included in the Evidence Update. The results of the systematic review indicated that the available data does not currently support the use of probiotics in the treatment of constipation.[38] One RCT comparing *Lactobacillus reuteri* with placebo in infants at least 6 months old reported increased bowel movements in the probiotic group.[39] However no differences between the groups were seen at any follow-up for stool consistency or inconsolable crying. Finally, an RCT examining a fermented milk product containing *Bifidobacterium lactis* in constipated children aged 3–16 years found no significant change in stool frequency from baseline between groups.[40] Overall, the Evidence Update concluded that the evidence is limited and a robust assessment of probiotics in the management of constipation was not possible. As such, the identified new evidence was unlikely to	The results of two cross-over dietary trials demonstrated conflicting results with one suggesting an association between functional constipation and cow's milk consumption whilst a second trial did not show an effect from type of casein.[42] Furthermore, an RCT was identified which investigated the role of cow's milk allergy as a cause of chronic constipation and effect of cow's milk free diet (CMFD) on its treatment in children.[43] Significantly more patients in the CMFD group (CMFD for 4 weeks followed by a cow's milk diet for 2 weeks) had decreased signs and symptoms of constipation compared with the control group who received a cow's milk diet for 6 weeks. The guideline recommends that children and young people with idiopathic constipation should only start a cows' milk exclusion diet on the advice of specialist services and no new evidence was identified which would change the direction of this recommendation. <u>Physical activity</u> An RCT (conducted in adolescents)[44] and a cohort study (including pre-school children)[45] reported that physical activity may be associated with a decreased risk of functional constipation. This new evidence supports the guideline which recommends daily physical activity that is tailored to the child's stage of development and individual ability as part of ongoing maintenance in children and young people with idiopathic constipation.	indicated that there needs to be a change in emphasis relating to diet and constipation in the guideline as there may be a view among parents that they are being blamed for the constipation because they have provided their child with a poor diet.	

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
impact on the guideline. <u>Non-pharmacological treatments</u> A systematic review examined non-pharmacological treatments for childhood constipation including fibre, prebiotics and probiotics, and fluid.[41] No effect was seen with raised fluid intake above normal, prebiotics or probiotics. The studies on fibre were mixed with only one out of three showing a significant effect with glucomannan compared with placebo for a number of outcome measures. The evidence from this review was considered to be consistent with current guideline recommendations.	<u>Dietary modifications</u> *Probiotics / prebiotics* The evidence on the effectiveness of probiotics and prebiotics was mixed with one review indicating that *L. reuteri* DSM 17938 may help infants with constipation[46] whilst two systematic reviews[47,48]; a follow-up of two RCTs[49] and a non-randomised trial[50] reported that probiotics have not proved effective for children with functional constipation. In addition, one controlled trial assessed the effect of adding a probiotic to mineral oil in the treatment of functional constipation in children.[51] After the treatment, stool frequency increased in both groups, with greater increase in synbiotic + mineral oil group although no difference between groups was observed for other outcomes such as frequency of hard/very hard stool and frequency of painful defecation. During guideline development the GDG felt it was not possible to recommend specific probiotics due to a lack of consistent evidence and the new evidence identified for the surveillance review does not give a clear and consistent view on the benefits and harms of probiotics for management of constipation. Further research is needed before considering for inclusion in the guideline. *High fibre* Two systematic reviews[52,53] and two RCTs[54,55] reported that there is a lack of evidence to confirm the		

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
	role of dietary fibre intake on constipation in children. Conversely, one RCT indicated that, compared with placebo, a dietary fibre mixture increased daily bowel movements and frequency of passing nonhardened stools in children with constipation.[56] Finally, one RCT indicated that an intervention comprising of doctor's dietary advice plus personalised diet management by a registered dietician may improve fibre consumption among children with refractory functional constipation.[57] In addition, one RCT compared general advice on increasing dietary fibre intake with a behavioural intervention tool for children with functional constipation.[58] The results indicated that the behavioural intervention increased the fibre intakes of children with constipation at 3 months compared to standard dietary treatment although no further increase was observed at 6 and 12 months follow-up. The guideline recommends that dietary interventions alone should not be used as first-line treatment of idiopathic constipation as the GDG felt there was insufficient evidence to recommend the use of fibre supplements in the treatment or ongoing management of constipation in children. Similarly, no evidence was found to suggest that increasing fibre-rich foods was effective in treating or managing constipation however, the GDG felt that children should be advised to eat a healthy diet, including fibre containing foods ad no new evidence was identified which would impact on this recommendation.		

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
99-17: What is the clinical effectiveness of psychological and behavioural interventions in addition to laxatives for ongoing treatment/maintenance in children with chronic idiopathic constipation?			
A systematic review included two RCTs assessing behavioural interventions.[41]	No new evidence identified.	None identified.	The new evidence was considered to be consistent with the guideline recommendation not to routinely refer children and young people to a psychologist or child and adolescent mental health services unless the child or young person has been specifically identified as likely to benefit from receiving a psychological intervention.
Management options not currently covered by the guideline:			
No new key evidence included in Evidence Update.	<u>Anorectal myectomy</u> The role of anorectal myectomy in children with chronic refractory constipation was evaluated in one study.[59] Twenty-two patients improved clinically; 4 patients had a partial response and 2 patients did not respond. <u>Sacral neuromodulation therapy</u> A small retrospective review evaluated the use of sacral neuromodulation therapy as a treatment option in adolescents with refractory functional constipation.[60] After implantation, the majority of patients had a	None identified.	Further research in larger studies is needed to determine the long-term benefits and harms of these management options in children with constipation before considering for inclusion in the guideline.

Conclusions from Evidence Update (June 2012)	Is there any new evidence/intelligence identified during this 4-year surveillance review (2014) that may change this conclusion?	Clinical feedback from the GDG	Conclusion of this 4-year surveillance review (2014)
	normal spontaneous defecation pattern of > 2 times a week without medication, felt the urge to defecate, and perceived less abdominal pain without relapse of symptoms until 6 months after implantation. <u>Transcutaneous electrical nerve stimulation</u> Three small case series reported that transcutaneous electrical nerve stimulation may improve constipation symptoms in children.[61-63] <u>Botulium toxin</u> One RCT evaluated the utility of botulinum toxin injection into the anal sphincter compared with medication as treatment of idiopathic constipation and anal fissure in children.[64] Botox injection significantly reduced defecation of painful stools and soiling compared with the control group.		

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