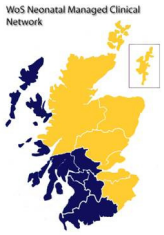
MCN for Neonatology
West of Scotland
Neonatal Guideline



Bowel Irrigation Guidance

Guidance for the management of bowel irrigation (rectal washout) for infants < 1 year old.

Used for: Hirschsprung's Disease, Meconium Ileus, Gastroschisis and Distal Loop Washouts.

Currently there is no national consensus regarding the procedure of Rectal Washout (RWO) or Distal Loop Washout (DLWO) for infants less than one year of age. A literature search highlights the variability of the volumes of 0.9% Sodium Chloride used either per instillation or per procedure, which type of tube should be inserted or how far to advance the rectal tube. The guidance in this document has been developed by the Neonatal Surgical Benchmarking Group to reflect current practice in the neonatal surgical unit at the Royal Hospital for Children, Glasgow. The guidance is recommended for use by neonatal units in the West of Scotland when caring for infants with Hirschsprung's Disease, and other gastrointestinal conditions requiring bowel irrigation. Where necessary, local neonatal units should seek further advice from the surgical liaison team.

Objectives:

- To provide staff with information about rectal washouts.
- To teach staff to undertake rectal washouts safely.
- To provide staff with the information about the potential problems that may arise and how to deal with them.

What is a rectal washout?

Rectal washout is a means of emptying and cleansing the lower bowel with the use of a catheter and 0.9% Sodium Chloride and is often required in conditions where infants are unable to empty the large bowel effectively i.e. Hirschsprung's disease, meconium ileus, anorectal malformations, post closure of gastroschisis and functional constipation. Distal Loop Washouts may be required in the peri-operative period in infants with established stomas where the distal (non-functioning) intestine requires cleansing prior to closure of stoma.

Assessment of the infant:

Prior to rectal washouts it is essential to assess the infant's condition and feeding pattern to determine the effectiveness of the previous washout. Any marked changes in condition should be reported to the clinical team.

- Is the abdomen distended, tense or soft?
- Is the baby feeding well?
- Is the baby vomiting? If so, is it milky or bile?
- Is the baby passing stools spontaneously between washouts?
- Are stools normal? Are they watery, foul smelling? Any blood noted in the stools?
- Is the baby alert, sleepy or lethargic?

ALERT CLINICAL TEAM IF ANY OF THE FOLLOWING ARE PRESENT.

- Abdominal distension or tenderness.
- Bile vomiting.
- Lethargy, poor colour.
- Blood in stools.

Conditions requiring bowel irrigation:

1. Hirschsprung's Disease (HD)

Infants with this condition are unable to pass stool effectively, due to the absence of ganglion cells (aganglionosis) within the intestinal wall, resulting in a lack of peristalsis and a functional bowel obstruction. The length of bowel affected is variable, but in the majority of infants it affects the distal (rectosigmoid) part of the colon. Prior to corrective surgery, infants with HD require decompression of the colon through rectal washouts or alternatively, the formation of a stoma. The most widely used practice in the UK is decompression with rectal washouts followed by a primary pull-through, avoiding the need for a stoma. If the colon cannot be effectively decompressed with washouts, a stoma is required to allow the infant to be established on enteral feeds, and to prevent the serious complication of Hirschsprung's enterocolitis (HE).

2. Meconium Ileus (MI)

This condition presents in the neonatal period, causing intestinal obstruction due to thick, sticky meconium within the intestines and usually occurs in the context of Cystic Fibrosis. In cases where the infant is clinically stable small volumes of 0.9% Sodium Chloride (see individual section for volumes) may be prescribed for bowel irrigation. Acetylcysteine, a mucolytic agent (10ml/kg/dose of 2% or 4% solution) may be prescribed by the paediatric surgeon to aid in the breakdown of inspissated meconium, allowing it to be passed more easily.

3. Gastroschisis

Gastroschisis is a congenital defect in the abdominal wall in which the abdominal contents (small and occasionally large bowel) herniate. Gastrointestinal dysmotility is often associated with gastroschisis after closure of the defect, leaving many infants unable to pass stools effectively. Smaller volumes of 0.9% Sodium Chloride (10-20mls/kg) may be required for daily bowel irrigation/stimulation and should be prescribed by the Paediatric Surgeon.

4. Post stoma surgery distal loop washout (DLWO)

DLWO can be used in conditions such as ano-rectal malformations and anomalies associated with a microcolon, to irrigate or distend the large intestine, when an ileostomy or colostomy has previously been formed. A catheter is passed through the mucous fistula (non-functioning stoma) and guided gently into the lower segment of large bowel. 0.9% Sodium Chloride (10-20ml/kg) is used in 10–20ml increments to irrigate the distal loop, allowing fluid to drain from the anus or until the solution runs clear.

Preparation for Washout in Hirschsprung's Disease.

How much 0.9% Sodium Chloride do I use?

It will depend on the infant's weight and condition. It should be warm sterile 0.9% Sodium Chloride and instilled in stages. Each instillation should rarely exceed 10ml/kg body weight, and the total volume used can be between 50-500mls per kilogram of body weight. The volume should be confirmed by the treating Paediatric Surgeon (e.g. if the baby weighs 3kgs, a maximum of 1500mls of the solution may be required, but only 20-30mls of fluid should be instilled each time). The volume returned should be measured to ensure that it is all coming back out. These volumes (500ml/kg) can only be progressed if the fluid is being returned each time after a 20-30ml instillation.

While in the hospital, the 0.9% Sodium Chloride solution is stored in a warming cabinet at a temperature of 37-38 degrees. At home parents are advised to stand the bottles of 0.9% Sodium Chloride in a basin of hot water. The temperature of the fluid used to warm the Sodium Chloride should be comfortably warm to the touch.

Equipment (Image 1)

- Warm sterile 0.9% Sodium Chloride.
- Lubricating gel – alcohol free
- Disposable bowl and jug.
- Rectal tube (Jacques catheter – size 10-16FR).
- 50ml bladder-tip syringe.
- Apron and gloves.
- Incontinence pads.
- Towels
- Nappy and wipes.
- Disposable bag.

Image 1 – preparation for rectal washout

Procedure.

- Prepare equipment and ensure a warm environment.
- Wash hands and put on gloves and apron.
- Assess and record the abdominal findings. Seek advice from clinicians if it appears firm, tense or tender.
- Wrap the baby in a towel or blanket leaving the buttocks exposed.
- Lay the baby in a comfortable position (lying the baby on his/her left side will aid the flow of the solution into the rectum, however can be performed in any position as long as the baby is comfortable.)
- Apply lubricating gel to the tip of the catheter and gently insert the catheter into the rectum, initially 10 cms.
- Fill the syringe to 20-30mls and gently instil the 0.9% Sodium Chloride and then aspirate the fluid back, if the tubing collapses and the fluid does not aspirate back remove the syringe and allow the fluid to drain out from the catheter onto the pad. As the fluid aspirated becomes clearer the catheter should be advanced in small increments, continuing to instil and aspirate fluid till catheter fully inserted or resistance is felt.
- Withdraw the catheter in small increments and repeat the above procedure.
- Observe and record the colour, consistency and smell of the effluent.
- The total volume instilled should be recorded.
- Assess and record the abdomen (as above)
- At the end of the procedure, wash and dry buttocks and apply barrier cream.
- Dispose of the soiled fluid. Discard all used supplies as per hospital policy.

An initial total volume of 50mls/kg is recommended and gradually increased over the first few days until effective decompression is achieved (the total volume of 0.9% Sodium Chloride should not exceed 500mls/kg). If maximal volumes are consistently required, medical staff should be consulted regarding the need to assess for serum biochemical instability (U&Es). If the abdomen is not adequately decompressed or the returning fluid remains dirty, twice or even three times daily washouts maybe required initially.

Signs of Entercolitis.

- Offensive smelling stools.
- Unusual colour of stools.
- Looser consistency, explosive stools.
- Blood in stools.
- Pyrexia
- Lethargy, poor feeding, vomiting, pallor.
- Obtain stool sample and alert clinical team.

Problem solving for rectal washout in HD.

Most of the problems with the process of the washout involve stools that are too thick and block the tube or prevent the tube from passing into the rectum.

- If the tube becomes blocked, remove it and flush the catheter with the solution until catheter is cleared and then recommence procedure.
- Difficulty advancing rectal tube – Initially try smaller size of catheter. Upsizing may also help by providing a slightly firmer tube to navigate bends. Try repositioning baby and gently move the tube around to re-position the tip of the tube. Also could be caused by tube kinking within the bowel, remove tube and re-insert.
- If there is difficulty in passing the tube initially; this can be eased by introducing the catheter and advancing the tube whilst flushing with 0.9% Sodium Chloride.
- **Never force the tube in.**
- Occasional specks of blood may be seen in the tubing, due to the irritation of the mucosal lining of the bowel by the tube.
- Fresh bleeding down the catheter- **stop** the rectal washout and alert the clinical team.
- Solution does not drain out fully- check tube is not blocked, reposition baby. Observe nappies as the baby may pass fluid/stool later.
- Inform clinical team if problem persists.

Preparation for Washout in Meconium Ileus.

A rectal washout is only performed on babies presenting with meconium ileus who are clinically stable. It is usually carried out soon after admission or after a contrast enema has been done. The rationale for rectal washouts in this setting is to distend the small calibre colon, and to clear inspissated meconium/mucous plugs. Repeat washouts or the instillation of Acetylcysteine should be prescribed by a Paediatric Surgeon.

Link to Acetylcysteine drug monograph:
https://perinatalnetwork.scot/wp-content/uploads/2022/06/Acetylcysteine-WoS_OOR.pdf

Drug	Route	Dose	Preparation
Acetylcysteine	(per rectum) Enema	10ml/kg/dose 6hrly using a 2-4% solution.	2g/10mls=20% 2% solution is prepared by diluting 1ml injection with 9ml of 0.9% Sodium Chloride 4% solution is prepared by diluting 2ml injection with 9ml of 0.9% Sodium Chloride Recommended rectal contact time of 10-15 minutes. Different times noted for different routes of use – ng/rectal

How much 0.9% Sodium Chloride do I use?

The total washout volume should be 10-50mls per kilogram of body of weight warm sterile 0.9% Sodium Chloride, (unless otherwise directed by the treating Paediatric Surgeon). As the colon is usually of small calibre, the 0.9% Sodium Chloride should be instilled in 5-10ml aliquots.

Equipment.

As per Hirschsprung's Disease.

Procedure.

As per Hirschsprung's Disease using the prescribed Acetylcysteine solution.
Note: Only advance the catheter the distance of the lower colon (5-10cm) or until resistance is felt.

Preparation for Washout in Gastroschisis.

Rectal washouts or glycerine suppository may be prescribed daily or on alternate days after post operative repair of gastroschisis. The washout should be performed with care and the purpose is to only evacuate the lower segment of the large bowel or rectum.

How much 0.9% Sodium Chloride do I use?

Warm sterile 0.9% Sodium Chloride 10-20mls per kilogram of body weight, unless otherwise directed by the treating Paediatric Surgeon.

Equipment.

As per Hirschsprung's Disease.

Procedure.

As per Hirschsprung's Disease.

Note: The catheter should only be advanced to the length of the rectum (5-10cm). Never force the catheter in.

Preparation for distal loop washout (DLWO)

The procedure is carried out pre closure of ileostomy/colostomy to ensure the large intestine segment from the mucus fistula to the anus is clean.

How much 0.9% Sodium Chloride do I use?

Warm sterile 0.9% Sodium Chloride 10-20mls per kilogram of body weight, unless otherwise directed by the treating Paediatric Surgeon.

Equipment.
As per Hirschsprung's Disease.

Procedure.

- Prepare equipment and ensure a warm environment.
- Wash hands and put on apron.
- Lay baby in a comfortable position.
- Wrap a towel around the upper half if the body and expose the mucus fistula.
- Apply lubricating gel to the tip and length of the catheter (approx 5cms) and gently insert the catheter into the mucus fistula (initially 5cms).
- Holding the catheter in position with one hand, fill the syringe with 0.9% Sodium Chloride 5-10mls and gently flush the catheter, then aspirate the fluid back. If the tubing collapses and the fluid does not aspirate back remove the syringe and allow the fluid to drain out from the catheter onto the pad.
- Advance a few more centimetres if return is very dirty and no resistance is felt. The mucous within the fistula is often thick and blocks the small tube.
- As the fluid aspirated becomes clearer the catheter should be advanced in small increments and the bowel is irrigated until the prescribed volume of 0.9% Sodium Chloride has been used or the fluid draining out is clear. **Never force the catheter in.**
- Gentle withdraw the catheter from the fistula.
- Observe the colour, consistency and smell of the effluent.
- Wash and dry the area, there might be some natural drainage later from the fistula or from the anus.
- Dispose of the soiled fluid.
- Discard all supplies as per hospital policy. Repeat the procedure as directed by the Consultant Paediatric Surgeon.

Preparation for Stoma Re-feeding

Stoma re-feeding (also known as recycling) is the process of collecting stool from a functioning stoma (ileostomy or jejunostomy) and returning it back via the mucous fistula (non-functioning stoma). Stoma re-feeding aims to mimic closing the stoma by allowing bowel content to pass through the defunctioned bowel.
Since the distal stoma (mucus fistula) is connected to the lower part of the bowel, by introducing stoma effluent into this part of the bowel, we hope to optimise the calibre of the bowel that is 'out of circuit', improve the health of the enterocytes (lining cells of the gut) and prepare the bowel so that it will be more likely to work well once the stomas have been joined together again.

Stoma re-feeding is beneficial for babies with:

- Short bowel
- High stoma losses limiting the amount of milk they can tolerate
- Poor weight gain

Stoma refeeding may be required if the patient is tolerating a good amount of milk feed, and are at the mid-way point between the stoma being formed and the stoma being closed. Recycling may be helpful for babies with a high stoma (ileostomy or jejunostomy) resulting in limited enteral tolerance due to high stoma output. Stoma recycling will help the patient to absorb more nutrients from their stoma output, as it is going back into the bowel instead of being thrown away.

The surgeons might request a loopogram before recycling is started. This is a special x-ray where a dye is introduced into the bowel through the distal stoma. The dye shows any possible blockages or narrowing in the bowel.

How are stoma losses re-fed?

Every 3-4 hours the patient's stoma bag will be emptied into a small gallipot, the stoma losses will then be drawn up into a syringe, a small tube will be inserted into the patient's mucus fistula (non-functioning stoma) and the losses will be gently refed down the distal end of the bowel. The stool will travel through the lower end of the bowel to the rectum. It is important to check the patient's nappy for any stool that has been passed via the patient's bottom, as this shows that it has moved along the bowel and is a good sign that the bowel is working. If stoma re-feeding is successful, patients will be able to have more milk feeds and the amount of TPN and other IV fluids will be reduced.

Equipment (Image 2)

- Ng tube size 4-6 depending on size of patient
- Lubricating gel – alcohol free
- 20ml enteral feed syringe
- Gallipot

Image 2 – preparation for stoma refeeding.

Procedure

- Empty stoma fluid into gallipot and draw up effluent into purple syringe.
- Prime nasogastric tube with the stoma fluid then lubricate tip of tube.
- Insert size ng tube into MF and advance tube about 6-8cms with very gentle pressure
- Very slowly refeed the fluid by using pulsating action.
- Document in nursing chart.
- Document dirty nappies.

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Document Author
Mr T Bradnock – Consultant Paediatric Surgeon – RHC, Glasgow
SCN L McGuire – Surgical Liaison Nurse – RHC, Glasgow
Mr G Walker – Consultant Paediatric Surgeon – RHC, Glasgow
SCN M Reeves – Specialist Surgical Nurse, RHC, Glasgow.

Document Title
WoS_BowelIrrigation_Neonates

Implementation/Review Dates
Implementation: 08/12/2017

Reviewed: 05/11/2025

Next Review: 05/11/2028