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## Slow transit constipation

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### Summary

- Slow transit constipation is characterised by the reduced motility of the large intestine, caused by abnormalities of the enteric nerves.
  - The unusually slow passage of waste through the large intestine leads to chronic problems, such as constipation and uncontrollable soiling.
  - Treatment options include electrical stimulation, laxatives and surgery.
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The large intestine massages waste along its length to the rectum by rhythmic, muscular contractions of its walls (peristalsis). This activity is controlled by nerves of the enteric nervous system (ENS). Slow transit constipation (STC), formerly known as neuronal intestinal dysplasia (NID), is characterised by the reduced motility (spontaneous movement) within the large intestine, caused by abnormalities of the enteric nerves.

The unusually slow passage of waste through the large intestine leads to chronic problems, such as constipation and uncontrollable soiling. There is no cure.

### Symptoms of slow transit constipation

The most common symptoms include:

- passing bowel motions infrequently
- constipation
- uncontrollable soiling
- abdominal pains
- nausea
- poor appetite.

Less common symptoms include:

- blood in the stools (poo)
- haemorrhoids
- diarrhoea.

### STC can be diagnosed soon after birth

The first bowel motion after birth isn't true faeces, but a dark, gluey substance known as meconium. Most of this substance comprises the mucus that layered and protected the bowel lining while the baby was in utero. A newborn with STC may not pass their meconium until 24 hours or more after being born. The delayed passage of meconium may lead doctors to investigate further.

### STC is a neuromuscular problem

The nerves communicate with muscle fibres by releasing chemical messages called neurotransmitters. These messages are picked up by special receptors in the muscle tissue. If enough receptors are stimulated, the result is muscular contraction.

Some studies have suggested that children with STC have abnormal neurotransmitters in the muscular layer of their intestinal walls. These abnormalities include a deficiency of a peptide known as substance P, which is thought to contribute to peristalsis. Research also indicates that the nerve cells of the bowel may be abnormal in number, position or appearance.

### **Quality of life can be severely affected**

Many children with STC have emotional and behavioural problems, including:

- constant anxiety about losing control of their bowels in public
- fear and embarrassment about their condition
- withdrawal from social situations
- depression and loss of self-esteem, especially if they are teased by other children at school.

### **STC may mimic or coincide with Hirschsprung's disease**

Hirschsprung's disease is characterised by the congenital lack of nerve cells in the rectum, large intestine or both. This means that peristalsis of the rectum or large intestine is absent, so that waste simply stalls and can't be expelled via the anus. The symptoms include severe constipation and obstruction.

This disease is similar in many ways to STC, which can make diagnosis difficult. A further challenge to diagnosis is that STC and Hirschsprung's disease quite often occur together.

### **Diagnosis of slow transit constipation**

STC is often missed as a diagnosis because of the standard tests used for constipation, including:

- **x-ray** – to see if the bowel is distended with excess faeces
- **barium enema** – a special contrasting liquid is flushed into the bowel via the anus, then x-rays are taken

A more specialised diagnosis or confirmation of STC should involve one or more of:

- **comprehensive assessment by a specialist continence adviser** – a child with STC may have a distended abdomen and obvious discomfort.
- **colonic nuclear transit study (NTS)** – the child swallows a radioactive dose. Its passage through the bowels is then tracked over three days.
- **full thickness laparoscopic biopsy** – a small surgical incision is made in three places on the abdomen and samples are taken of the bowel wall to look at the muscles and nerve supply and the messenger molecules. This should not be mistaken for rectal biopsies.

### **Treatment for slow transit constipation**

There is no cure for slow transit constipation. Treatment options may include:

- medication to improve bowel motility
- regular enemas to flush the rectum of faeces
- interferential electrical stimulation therapy (used in what is known as the TIC TOC treatment trial). The treatment is painless and often increases the child's bowel motility, improves their bowel emptying and reduces the need for medication, washouts or surgery.

### **Surgery for slow transit constipation**

For some families, symptoms may be so severe that surgical options may need to be considered. The type of surgery chosen depends on the location and extent of the affected bowel, and the health and age of the child. Options include:

- A colostomy is formed, where the bowel is re-routed through an artificial hole in the abdominal wall, and a colostomy bag is fitted. Sometimes, a temporary colostomy is performed.
- The appendix may be brought to the surface to create a tiny stoma (opening). This can be done using a laparoscope (telescopic surgery). Enemas can be given regularly directly into the stoma or appendix.
- It is not always possible to treat STC with surgery, as too much of the bowel may be affected.

### **Coping strategies with slow transit constipation**

Strategies that may help your child to cope with STC include:

- Don't ever chastise your child for soiling. Remember that their bowels are difficult to control.
- Offer pull-up disposable nappies or other continence aids appropriate to your child's age.
- Allow your child to talk about their feelings.
- Make sure you educate your child about STC, so they realise their bowel control problems are not their fault.
- Devise an 'action plan' in consultation with your child's school, which includes a trusted teacher's cooperation at toilet time, and easy access to toilets and a shower.
- Join a support group such as the Paediatric Continence Association of Australia.
- Contact a specialist STC clinic.
- Professional counselling for the child and family members may be helpful.

### **Where to get help**

- Your doctor
- Gastroenterologist
- Continence clinician
- NID Clinic at Royal Children's Hospital Tel. (03) 9345 6180

### **Things to remember**

- Slow transit constipation is characterised by the reduced motility of the large intestine, caused by abnormalities of the enteric nerves.
- The unusually slow passage of waste through the large intestine leads to chronic problems, such as constipation and uncontrollable soiling.
- Treatment options include electrical stimulation, laxatives and surgery.

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