

Understanding Slow Transit Constipation

Chronic constipation is a major problem in the general community, but is not commonly discussed and its prevalence is underestimated. Common constipation is when a child has hard faeces (stool) or does not go regularly. There is a lot of difference in the firmness and frequency of stool in normal children. Constipation is quite a common problem in children, but with improvement in bowel habits and appropriate use of medications, it can usually be controlled.

However, there is a subgroup of children that present with slow transit constipation (STC), that have a functional abnormality because of disordered nerves and muscles of the colon itself. Many children with STC have been found by biopsy to have abnormalities of the neurotransmitters (messenger molecules in the nerves) in the muscular layers of the bowel wall. In particular, they have a deficiency of Substance P, a peptide thought to be involved in the activation of bowel contraction. In these children, movement of stool within the colon is markedly delayed. In kids with STC the stool often remains stored in the right or middle portion of the colon and does not progress adequately to the rectosigmoid colon, causing a build up and discomfort. It is the rectosigmoid colon that is responsible for the propulsion and transfer of stool (poo) out of the body. (See diagram below)

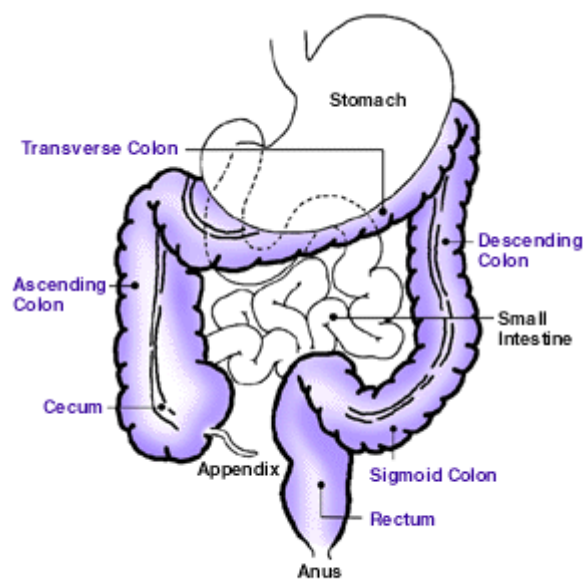


Diagram of the Colon and Rectum

The symptoms of STC include long delays in the passage of stool, accompanied by lack of urgency to move the bowels. It has been determined that the normal frequency of stool passage is three or more bowel movements per week, however in children with STC often they do not pass a stool for 7-10 days at a time; at times longer. Physically, many children with STC do not appear unwell. Sometimes this can lead to inaccurate perception that their health problems are not significant. These children and their families can face considerable difficulties, with distressing symptoms and never-ending treatments.

Many children who have been diagnosed with STC (and some other children with difficult to manage constipation and soiling) continue to have symptoms even with the best treatment available at present. They may have nausea, abdominal pain, poor appetite and soiling. They often have had symptoms for some time and many frustrations associated with their poor response to treatments. They may have had unpleasant treatment regimes. The management may have involved uncomfortable and potentially frightening procedures, including repeated enemas. Treatments will often have included large doses of laxatives orally or by naso-gastric tube and many children will have had multiple hospital admissions for these treatments.

Despite the best efforts of health care providers and families, these children may feel different, depressed, angry and sometimes isolated and rejected. Their self esteem is often low. Some children have abdominal surgery, which can improve their physical symptoms but may exacerbate their feelings of difference. Children and young people need time to adjust to stomas or appliances and often feel self-conscious about their surgical incisions or scars. The incidence of behavioural and emotional problems in studies of children with constipation/soiling is high.

The importance of full assessment of STC in children

It is important to have the doctor or continence nurse take a detailed history of your child's bowel activity. This information can be gathered from you, the parent/carer and, where possible, the child, noting relevant dietary, family and social factors. Clinical examination by the doctor will assess your child's general health and check for poor growth and neurological problems. Palpation of the abdomen may reveal distension or faecal loading in the colon. Rectal examination can be distressing for the child and is usually unnecessary.

There is no need for a routine abdominal X-ray to diagnose constipation. A potentially more helpful test is a transit study. This can be done with radio opaque markers and standard X-ray or in nuclear medicine with a radio labelled drink. The test measures movement of faeces through the bowel. It can distinguish general colonic slowness (Slow Transit Constipation) from functional faecal retention in the rectum only.

Nuclear Transit Study

In a nuclear transit test, the child swallows a small drink (milk or fruit juice) with a flavourless marker (Technetium Colloid or Gallium). Following ingestion, the substance dissolves and is harmlessly released into the small and large intestines. A series of pictures are taken over 0-3 days after ingestion. It is important to avoid laxatives for approximately one week prior to and during this study as stimulant use can alter the results of the study by speeding the movement of the marker through the colon.

The standard protocol for Transit Study is to test only in children old enough to co-operate (over 1-2 years) and after failure of at least 6 months of medical therapy. The drink with flavourless tracer is given at 9.00 am in a small drink after overnight fasting. Radio-active images are collected between 0 and 2 hours (to monitor gastric emptying), at 6 hours (to monitor the small bowel) and at 24, 30 and 48 hours (to investigate colonic mobility). Normal diet and activity resumes after gastric emptying pictures are complete. Whilst this test is very time consuming, usually taking several days, the benefits to your medical team in determining a diagnosis and treatment is very valuable. Parents should not be concerned by the 'radio-activity', as the total radiation dose is only about the same as two ordinary X-ray pictures. The tracer is no longer radio-active after 4-5 days, so it does not matter if no stool is passed during the test. Following the Transit Study, many families are offered a further test, to assist in understanding the cause of the slow transit, called a laparoscopic biopsy.

Laparoscopic Biopsy in STC diagnosis

Laparoscopic biopsy involves a small surgical incision in three places on the abdomen and collection of samples of the bowel wall to look at the muscles and nerve supply and the messenger molecules. The child is required to stay in hospital overnight. In Victoria, the laparoscopic biopsies are offered only if the transit study suggests a hold-up in the colon.

Once the biopsy specimens are collected from the colon, they are currently processed for immunofluorescence histochemistry (cell staining) in a special laboratory at the Royal Children's Hospital Pathology Department and the Murdoch Childrens Research Institute (MCRI) to assist the medical team in identifying any further abnormality in your child's colon.

To have biopsies, the hospital will arrange for your child to be admitted and probably stay a day or so until your child is mobile enough to go home. You are allowed to stay with your child during induction of anaesthesia, so that they are not frightened by the strange surroundings. The procedure itself takes very little time (approximately 45 minutes) and when the procedure is finished the theatre staff will move your child into the recovery area until your child wakes up fully. Usually the doctor will speak with you in the Parent's Waiting Area just before your child is moved into the recovery area and reassure you that all has gone well. Once your child is settled in the post-op area, parents/carers are called into the recovery area to stay with their child until they wake from anaesthetic. This way the child sees your familiar face, lessening any distress. Your child will remain in the recovery room for approximately 30-40 minutes, before they are moved up to a ward where they will remain until they go home.

All medical information published in the Parent Fact Sheet Series is overseen by the Paediatric Continence Advisory Council. For more information please go to pcaa.org.au