



Distal Intestinal Obstruction Syndrome

What is Distal Intestinal Obstruction Syndrome?

Distal Intestinal Obstruction Syndrome (DIOS) is a complication of cystic fibrosis (CF). It occurs when the bowel becomes partially or completely blocked. It usually occurs where the small bowel joins the large bowel.

What are the symptoms of DIOS?

The symptoms of DIOS are highly variable. The diagnosis can be divided into suspected or confirmed DIOS. In suspected DIOS, symptoms are similar to constipation or bacterial overgrowth. These symptoms include crampy abdominal pain, distension (bloating), hard stools and reduced frequency of bowel motions. Loss of appetite, nausea and / or vomiting can also occur. In confirmed DIOS there is usually complete blockage of the bowel. This causes severe abdominal pain and distention and vomiting. A hard mass can often be felt on the right side of the abdomen.

When might DIOS occur?

People with CF who were born with a meconium ileus, have had bowel surgery or previous episodes of DIOS are at an increased risk.

DIOS often occurs with a change of routine that slows bowel function or reduces fluid content in the bowel. Examples include change in diet, illness, chest exacerbation and increased physical activity. Change of social situation (e.g. starting school) or moving to a warmer climate can also contribute. These changes are usually associated with a decreased fluid intake and / or inadequate amounts of enzyme supplementation. As a result, the contents of the bowel become thicker and stickier. This can result in blockage of the bowel.

How is DIOS diagnosed?

Diagnosis is confirmed with an abdominal x-ray. In suspected DIOS, the x-ray will show large amounts of impacted stool at the end of the small bowel and beginning of the large bowel. In confirmed DIOS, there will be enlarged loops of fluid in the small bowel.



How is DIOS treated?

Treatment of DIOS requires laxatives. Mild cases of DIOS are treated with PEG 3350 (*Movicol* or *Osmolax*). In more severe cases, *Golytely* (PEG 3350 lavage solution) or *Gastrograffin* is used. They can be given via a nasogastric tube or gastrostomy. These laxatives work by drawing fluid into the bowel. This will help remove impacted stool. Extra fluid will be required by increasing drinks or via an intravenous drip. In the most severe cases, *Gastrograffin* can be given as an enema. Recurrent abdominal symptoms require further investigation. A gastroenterologist and/or a surgeon review may be requested.

DIOS can often reoccur. It is important to recognise symptoms early to prevent onset and complications.

How can I reduce the risk of DIOS?

- Ensure adequate enzymes are taken for all foods and fluids. Avoid excessive doses of enzymes.
- Ensure adequate fluid (e.g. milk, water, salt replacement drink) and salt intake. This is especially important when playing sport, in hot climates, and during illness.

- Include high fibre foods in addition to a high calorie, high salt diet. Fruit, vegetables and wholegrain cereals (e.g. grainy breads, wholemeal pasta, brown rice) are good sources of fibre.
- Take regular stool softening medication as prescribed by your doctor.

Things I can do to reduce my risk of DIOS:

1. _____

2. _____

3. _____

For further information contact your Dietitian or Nutritionist:

This information was produced with assistance from the Royal Children's Hospital Respiratory Department and Gastroenterology Department.

Reference:
1. Dietitians Association of Australia Cystic Fibrosis Special Interest Group. 2006. Australasian Clinical Practice Guidelines for Nutrition in Cystic Fibrosis.