

# Cystic Fibrosis Research News

**Title:**

**GASTRIC EMPTYING AND GASTRO-OESOPHAGEAL REFLUX IN CHILDREN WITH CYSTIC FIBROSIS**

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**What was your research question?**

The aim of this study was to look at the presence and relationship between emptying of the stomach into the bowel (gastric emptying) and return flow from the stomach upwards to the oesophagus (gastro-oesophageal reflux) in children with cystic fibrosis.

**Why is this important?**

Gastro-oesophageal reflux and gastro-oesophageal reflux disease are more frequent in adults and children with cystic fibrosis compared with healthy controls. Gastro-oesophageal reflux disease is defined as reflux of stomach contents in the oesophagus that is the cause of troublesome symptoms and/or complications. These symptoms and complications can be related to the digestive system (belching, pain, heartburn, infection of the oesophagus, vomiting) as well as related to the airways (cough, breathlessness, infections of the lungs). Slow gastric emptying can be responsible for gastro-oesophageal reflux. Normal, rapid as well as slow gastric emptying has been reported in adults and children with cystic fibrosis.

**What did you do?**

Gastro-oesophageal reflux and gastric emptying were measured in 28 children aged 1 to 17 years with cystic fibrosis and symptoms suggestive for gastro-oesophageal reflux disease. Gastro-oesophageal reflux was measured with a monitor for acidity. A little tube was introduced through the nose until the lower part of the oesophagus and measured gastro-oesophageal reflux during 24 hours. Gastric emptying of liquids using a milk drink or gastric

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emptying of solids using a pancake was measured according to the age and preference of the child. The test meals were labelled with a non-radioactive substance (isotope  $^{13}\text{C}$ ) and breath samples were collected at regular intervals during 3 or 4 hours allowing calculation of gastric emptying.

## What did you find?

We found increased acid gastro-oesophageal reflux in 13/28 (46.4 %) and slow gastric emptying in 6/28 (21.4 %) of the children with cystic fibrosis and symptoms suggestive for gastro-oesophageal reflux disease. There was however no relationship between increased acid gastro-oesophageal reflux and slow gastric emptying as there were as many children with slow gastric emptying in the group with increased acid gastro-oesophageal reflux (3/13) as in the group with normal acid gastro-oesophageal reflux (3/15).

## What does this mean and reasons for caution?

Almost half of the children with cystic fibrosis and symptoms suggestive for gastro-oesophageal reflux have increased acid gastro-oesophageal reflux and almost a quarter have slow gastric emptying. However, there is no relation between gastro-oesophageal reflux and gastric emptying meaning that slow gastric emptying is generally not responsible for increased gastro-oesophageal reflux. These findings are of course not valid for all people with cystic fibrosis as this study was performed in a selected group of children with cystic fibrosis and symptoms suggestive for gastro-oesophageal reflux.

## What's next?

It would be interesting to perform this study in more centers, with more participants of all ages as this study was a single center study with a limited number of children with cystic fibrosis.

## Original manuscript citation in PubMed

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