

News and Events

[Show more news](#)



Cause of common chronic diarrhoea revealed in new research

Study results suggest a hormone deficiency causes bile acid diarrhoea - *News Release*

Date 02 Nov 2009

Category News

Last Updated 02 Nov 2009

[email to a friend](#)

Imperial College London News Release

For Immediate Release

Monday 2 November 2009

A common type of chronic diarrhoea may be caused by a hormone deficiency, according to new

research published in the November issue of *Clinical Gastroenterology and Hepatology*. The authors of the paper, from Imperial College London, with collaborators from King's College London and the University of Edinburgh, say their results could help more doctors recognise this type of diarrhoeal illness, and may lead to the development of more effective tests and treatments to help improve the lives of many people suffering with chronic diarrhoea.

Chronic idiopathic bile acid diarrhoea affects an estimated one in 100 people in the UK and it can cause people to have up to ten watery bowel movements a day, often for months at a time. This type of diarrhoea occurs when an overload of bile acid reaches the colon and causes excess water to be secreted into the bowel.

Today's study suggests that bile acid diarrhoea is caused by the body producing too much bile acid, because of a deficiency in a hormone called FGF19, which normally switches off bile acid production. The authors of the study say that new hormone-based treatments could be developed in the future to treat the condition and doctors could potentially test people's hormone levels to diagnose it.

[Dr Julian Walters](#), lead author of the study from the Division of Medicine at Imperial College London, said: "Bile acid diarrhoea is a common condition, likely to affect more people than Crohn's disease or ulcerative colitis, yet until now we did not understand exactly what causes it. People with bile acid diarrhoea need to use the toilet urgently many times during the day and night. This can have a big impact on their lives, at home, at work and while they are travelling, as they always need to be near a toilet.

"If they are diagnosed, we have treatments that can remove bile acid from the colon, alleviate the symptoms and improve their quality of life. However, the current test used to diagnose the condition is

See also:

→ [Clinical Gastroenterology and Hepatology](#)

Imperial College is not responsible for the content of external internet sites

→ [Division of Medicine](#)

→ [Faculty of Medicine](#)

Related news stories:

→ [Common bowel problem linked to chilli pepper pain receptor](#)

→ [Urine samples could be used to predict responses to drugs, say researchers](#)

→ [Bug guts map brings scientists closer to understanding different bugs' role in the body](#)

not available in many countries and requires patients to attend the hospital twice. This means many people are not diagnosed. Our new findings mean that in the future doctors may be able to diagnose the condition by doing a quick and simple blood test," added Dr Walters.

Bile acid is produced by enzymes in the liver, to help the body digest fats. Its production is controlled by a hormone called Fibroblast Growth Factor 19 (FGF19). Over 90% of the bile acid is absorbed from the intestine back into the blood and is then reused. In healthy people, when bile acid is absorbed by the intestine, the body makes more FGF19 to stop new bile acid from being produced.

However, results of today's study suggest that people with bile acid diarrhoea make less FGF19, so the hormone 'switch' fails to stop the liver from producing more bile acid than the body needs. Because of this, more is produced than the intestine can absorb. This then irritates the colon and the resulting watery secretion causes diarrhoea.

The researchers say that testing the amount of FGF19 in people's blood could lead to a fast, easy and cheap way of diagnosing bile acid diarrhoea. They also hope today's findings will help scientists develop new treatments to increase the production of FGF19 and reduce the amount of bile acid being made in patients.

The researchers tested the amount of bile acid being produced in the livers of 17 patients diagnosed with bile acid diarrhoea and 19 healthy controls. They did this by measuring the amount of a molecule called C4 in the blood, which indicates how much bile acid is being made. The results showed that the people with bile acid diarrhoea were producing an average of nearly three times more bile acid than the controls, with 51 nanograms of C4 per millilitre of blood in the patient group, compared to 18 nanograms per millilitre in the control group.

The researchers then measured the amount of FGF19 in the patients and controls. The results showed that the people with bile acid diarrhoea were producing around half the level of the hormone than the controls, with 120 picograms of FGF19 per millilitre of blood levels in the patient group,



Bile acid diarrhoea can have a big impact on people's lives, as they always need to be near a toilet.

compared to 231 picograms per millilitre in the control group.

These results suggest that there is a significant link between bile acid production and decreased levels of FGF19 in people with bile acid diarrhoea. The researchers say that, following this small study, further research is needed to see if these findings can be replicated.

-Ends-

For further information please contact:

Lucy Goodchild

Press Officer

Imperial College London

E-mail: lucy.goodchild@imperial.ac.uk

Telephone: +44 (0)20 7594 6702 or ext. 46702

Out of hours duty press officer: +44 (0)7803 886 248

Notes to Editors:

1. "A New Mechanism for Bile Acid Diarrhea: Defective Feedback Inhibition of Bile Acid Biosynthesis"

Clinical Gastroenterology and Hepatology, 1 November 2009.

Corresponding author: Dr Julian Walters, Imperial College London (For a full list of authors, please see paper)

2. King's College London

King's College London is one of the top 25 universities in the world (Times Higher Education 2009) and the fourth oldest in England. A research-led university based in the heart of London, King's has more than 21,000 students from nearly 140 countries, and more than 5,700 employees. King's is in the second phase of a £1 billion redevelopment programme which is transforming its estate.

3. The University of Edinburgh is listed in the top 20 universities in the world according to The Times Higher Education - QS Rankings 2009. In the last research and assessment exercise, around 70 per cent of research from the College of Medicine and Veterinary Medicine was rated as "internationally excellent" or "world leading". The College was rated top in the UK for research in hospital-based

clinical subjects. The University has more than 25,000 students from more than 130 countries and has been providing outstanding educational opportunities to students from around the world for over 400 years.

4. About Imperial College London

Consistently rated amongst the world's best universities, Imperial College London is a science-based institution with a reputation for excellence in teaching and research that attracts 13,000 students and 6,000 staff of the highest international quality.

Innovative research at the College explores the interface between science, medicine, engineering and business, delivering practical solutions that improve quality of life and the environment - underpinned by a dynamic enterprise culture.

Since its foundation in 1907, Imperial's contributions to society have included the discovery of penicillin, the development of holography and the foundations of fibre optics. This commitment to the application of research for the benefit of all continues today, with current focuses including interdisciplinary collaborations to improve health in the UK and globally, tackle climate change and develop clean and sustainable sources of energy.

Website: www.imperial.ac.uk



Print



Email to a Friend



Report incorrect content



→ Login

Main campus address:

Imperial College London, South Kensington Campus, London SW7 2AZ, tel: +44 (0)20 7589 5111

[Campus maps and information](#) | [About this site](#) | [Website Redesign Project](#) | [This site uses cookies](#)

© Copyright 2015 Imperial College London