



# Royal College of Physicians

## Professor John Atherton's Biography

John Atherton's medical education was at Cambridge then Oxford University. After post-graduate training in medicine and gastroenterology, he trained in gastroenterology research with Professors Chris Hawkey and Robin Spiller in the UK, and in infectious disease research with Professors Martin Blaser and Timothy Cover in Vanderbilt University, USA. He settled in the University of Nottingham in 1995 and became a full Professor in 2001. In this role John continues to practice clinical gastroenterology as an NHS Consultant, through patient clinics and endoscopy lists, specialising in upper GI diseases. He teaches medical students and specialised masters students. His main research interests are in the virulence of the stomach bacterium *Helicobacter pylori*, in the pathogenesis of peptic ulceration and gastric adenocarcinoma, and in the role of *H. pylori* in modulating other diseases. He supervises both laboratory and clinical research and particularly enjoys supervising PhD students. He has held both MRC Clinician Scientist and Senior Fellowships and was awarded the Sir Francis Avery Jones Research Medal by the British Society of Gastroenterology.

John was founding Director of the National Institute for Health Research Biomedical Research Unit in the Nottingham Digestive Diseases Centre. From 2009 to 2013 he was Head of the School of Clinical Sciences in the University of Nottingham then from 2013 to 2015 Dean of the School of Medicine. Since 2015 he has been Pro-Vice-Chancellor and Dean of the Faculty of Medicine and Health Sciences.

Outside Nottingham, John is the Secretary-General of United European Gastroenterology, the body representing gastroenterologists and others interested in digestive diseases in Europe, and also serves on the UK Medical Schools Council Executive as Treasurer.

## Presentation Blurb

### Fifty years of peptic ulcer revolution

#### Section 2: *Helicobacter pylori*

In 1983 Robin Warren and Barry Marshall wrote letters to the Lancet describing spiral bacteria on the gastric mucosal surface – bacteria we now know as *Helicobacter pylori*. They speculated that these were a major cause of peptic ulceration and gastric carcinoma and they and others pioneered tests for these bacteria, and effective treatments. This has revolutionised modern gastroenterology. We now treat ulcers using acid suppressants and antibiotics. This not only heals ulcers but prevents their recurrence: it cures the disease. *Helicobacter pylori* is also the cause of more than 80% of cases of gastric adenocarcinoma – the third biggest cancer killer in the world. If we could solve the worldwide public health problem of *H. pylori* infection, we could prevent this disease too.

On the other hand, *H. pylori* has infected humans throughout our evolution; it has co-evolved with us and our physiology and immunology have co-evolved with it. Now, for the first time in our evolutionary history many humans have *H. pylori*-free stomachs. This leads to problems. For example, on average, *H. pylori* suppresses gastric acid production and humans who do not have it may produce more acid. If they happen to have gastro-oesophageal reflux, the refluxate is more acidic and this likely explains the strong negative association between *H. pylori* and complications of acid reflux, including Barrett's oesophagus and oesophageal adenocarcinoma (odds ratio 0.4).



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More controversially, absence of the regulatory immune response associated with *H. pylori* may be contributing to the negative association between *H. pylori* and childhood asthma. To be clear, *H. pylori* causes two scourges of modern society – peptic ulceration and gastric cancer – and we should eradicate it where we find it. However, absence of *H. pylori* may not be without its consequences.

### References / Reading

Warren JR, Marshall B. Unidentified curved bacilli on gastric epithelium in active chronic gastritis. *Lancet* 1983;i:1273-5

Linz B, Balloux F, Moodley Y et al. An African origin for the intimate association between humans and *Helicobacter pylori*. *Nature* 2007;445:915-918

Atherton JC, Blaser MJ. Co-adaption of *Helicobacter pylori* and humans: ancient history and modern implications. *J Clin Invest* 2009;119:2475-97