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Genes linked to people's bowel habits

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A new publication in the scientific journal *Gut* sheds light on the role that certain genes have in determining how people differ in their bowel habits. The study results from the collaboration of research groups at Karolinska Institutet and the University Medical Centre Groningen, Groningen, the Netherlands.

How often people move the bowels is important for their well-being, as altered patterns are often observed, for instance, in common gastrointestinal conditions like irritable bowel syndrome (IBS), affecting millions worldwide.

By studying two population-based cohorts from Sweden (PopCol) and the Netherlands (LifeLines-Deep), researchers from the Department of Biosciences and Nutrition at Karolinska Institutet and the University Medical Center Groningen have tested the hypothesis that human genes may contribute to individuals' differences in their evacuation rates (stool frequency).

They used genome-wide association studies (GWAS) to look at the genetic make-up of people who kept daily records of their bowel movements, and identified genes that are associated with increased or decreased stool frequency. Among these, two important classes of genes were most abundant: cytochromes and ion channels. Cytochromes are enzymes that help detoxify our body from substances known as xenobiotics (chemicals found in foods and drugs), while sodium and other ion channels are important conductors of the electric pulses controlling, for instance, heart pumping and bowel contractions.

"This is a good example of the potential for translational medicine that can be gained from the study of the general population; the genetic mechanisms we have started to unearth represent known druggable targets and may be exploited for future therapeutic options in common conditions like IBS," senior co-author Mauro D'Amato comments.

More information: Soesma A Jankipersadsing et al. A GWAS meta-analysis suggests roles for xenobiotic metabolism and ion channel activity in the biology of stool frequency, *Gut* (2016). DOI: 10.1136/gutjnl-2016-312398

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