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**Funding body:** BBMRI-LPC

**Summary of research:**  
Irritable bowel syndrome, genetics, gastroenteritis

**Application Lay Summary:**

1a: Irritable bowel syndrome (IBS) affects 15% of people with symptoms including abdominal pain, bloating, constipation and diarrhoea. It is a leading cause of work absenteeism, and consumes 0.5% of healthcare budget. Aetiology is uncertain with genetic factors playing a predisposing role, though no major large-scale effort has been undertaken.

The bbmri-lpc approved bellygenes proposal aims to study IBS in relation to genotype in several large European cohorts, with unprecedented and adequate statistical power. The results of this initiative will contribute to the identification of pathophysiological mechanisms, and hence ultimately provide novel therapeutic targets in IBS.

1b: The extent to which IBS affects health-related QoL is similar to ischaemic heart disease, asthma or migraine, and IBS patients would accept a 1% chance of dying from a treatment that makes them symptom free.
In Europe, more than 70 million people are affected by IBS symptoms, translating into costs of 40 billion €/y for clinical management and loss of productivity. Hence, the potential for societal impact of a commensurate action targeting IBS at different levels is extraordinary. The long-term projected outcomes of the bellygenes initiative are thus expected to positively impact the lives of many Europeans.

1c: We adopt a case-control design, where genotypes are studied to identify risk genes. IBS patients and controls will be identified using electronic medical records and ICD codes, and questionnaire-based information on self-reported medical conditions. Genomic DNA variants will be compared for their frequencies in cases and controls in order to identify those associated with increased or decreased IBS risk (genome wide association study – GWAS). ICD-defined prior gastroenteritis will also be studied to include environmental exposure in the assessment of IBS risk. Ad-hoc bioinformatic tools will be used to infer biology from the genetic association data.

1d: We request access to data from individuals with ICD10 diagnoses K58, K58.0, K58.9 (including A01-A09 risk modifiers) and/or non-cancer illness code, self-reported condition irritable bowel syndrome for cases, and unaffected controls. Based on current tally from UKBiobank processed records, we expect this to correspond approximately to 7-8000 ICD10 and 12000 self-reported IBS cases, and we request 10x as many non-IBS controls.