

ABNORMAL FLORA IN IRRITATED BOWEL

- Gut flora identified with DNA technique.
- Future diagnoses will be easier.

People with irritable bowel syndrome (IBS) have a very abnormal gut flora.

Researchers from the Laboratory of Microbiology demonstrated this using bacteria DNA from the faeces of patients, providing more insight into the cause of this common ailment.

Their findings are published this month in the *Gastroenterology* journal.

In the intestines of IBS patients, the ratios between bacteria groups are different to those in healthy people. For instance, the researchers found relatively large numbers of *Firmicutes* and a big drop in the number of *Bacteroidetes*. 'These changes are related to the disease and the acuteness of the symptoms,' explains PhD student Sebastian Tims. So there isn't one chief culprit; it is more like a fingerprint. Tims: 'There are subtle differences, spread across several bacteria groups and these are clearly related to the disease.'

CHIP

During the experiment, Tims and his supervisor Marjana Rajlic-Stojanovic examined the gut floras of 62 people with irritable bowel syndrome and 46 healthy control subjects. They took samples of faeces and cultivated the bacteria DNA in them. Subsequently, they placed these on a chip which

identifies known intestinal bacteria DNA. The patients also kept a symptoms diary which the researchers used to compare the acuteness of the disease with the specific symptoms. With these results, an objective test for the disease seems to be in sight. Diagnoses are currently made using the 'Rome II criteria', where symptoms have to persist for at least six months. The study enables more pieces of the puzzle to fall into place. 'This doesn't mean that we can explain everything,' says Professor Willem de Vos of Microbiology. 'But we feel that we are heading in the right direction.' For example, the researchers suspect that some of these changes can explain the symptoms. Intestinal pain could be caused by proteins released by the overabundant Firmicutes. A bloated feeling and flatulence result when there are less methane-producing bacteria to break down hydrogen gas.

SINGLE FRAME

De Vos is also pleased that this extensive study confirms the results from smaller experiments. The next step, he says, is to follow the progress of the disease. In a major trial carried out together with Ellen Kampman, professor of Nutrition and Cancer, and with the Gelderse Vallei Hospital, the group is monitoring about 100 patients for changes in the long term. De Vos: 'We are still only looking at a single frame and we are interested in the film.' **RR**

