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[Society for General Microbiology](#)

## Stomach ulcer bug causes bad breath

Bacteria that cause stomach ulcers and cancer could also be giving us bad breath, according to research published in the December issue of the *Journal of Medical Microbiology*. For the first time, scientists have found *Helicobacter pylori* living in the mouths of people who are not showing signs of stomach disease.

The mouth is home to over 600 different species of bacteria, some of which can cause disease. *Helicobacter pylori* has recently been shown to cause stomach ulcers and is also responsible for a large proportion of gastric cancers. Scientists estimate that between 20 and 80 % of people in the developed world and over 90 % of people in the developing world carry the bacterium.

"Recently, scientists discovered that *H. pylori* can live in the mouth," said Dr Nao Suzuki from Fukuoka Dental College in Fukuoka, Japan. "We wanted to determine whether the bacteria can cause bad breath, so we tested patients complaining of halitosis for the presence of *H. pylori*."

The researchers found the bacteria in the mouths of 21 out of 326 Japanese people with halitosis (6.4%). In these people, the concentration of a bad breath gas and the level of oral disease was significantly higher. In patients with periodontal (gum) disease, 16 of 102 people (15.7%) had *H. pylori* in their mouths.

"Halitosis is a common problem in humans, and bad breath is largely caused by periodontitis, tongue debris, poor oral hygiene and badly fitted fillings," said Dr. Suzuki. "Bacteria produce volatile compounds that smell unpleasant, including hydrogen sulphide, methyl mercaptan and dimethyl sulphide. Doctors often measure the levels of these compounds to diagnose the problem. Gastrointestinal diseases are also generally believed to cause halitosis."

Patients who were carrying *H. pylori* had more blood in their saliva and were also carrying *Prevotella intermedia*, which is one of the major periodontal bacteria.

"Although the presence of *H. pylori* in the mouth does not directly cause bad breath, it is associated with periodontal disease, which does cause bad breath," said Dr. Suzuki. "We now



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need to look into the relationship between *H. pylori* in the mouth and in the stomach. We hope to discover the role of the mouth in transmitting *H. pylori* stomach infections in the near future."

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