Helicobacter pylori infection is present in almost all patients with duodenal ulcers and 80-90% of patients with gastric ulcers, whereas the prevalence of infection among young adults without a history of ulcer is fairly low in Western countries. To investigate the importance of transmission from parent to child we assessed the relation between a parent's history of gastric or duodenal ulcer and infection with H pylori in his or her offspring in a large population of preschool children.

Subjects, methods, and results
A cross sectional study was carried out among 1201 preschool children living in Ulm, a city of about 100 000 inhabitants located in southern Germany. The children had a medical examination before starting school in 1996. Details of the study design are reported elsewhere. In brief, a urea breath test using carbon-13 was conducted to determine whether the children had an active infection of H pylori. One to two weeks before their child's examination a standardised questionnaire was sent to the parents to ascertain whether they had had a gastric or duodenal ulcer diagnosed by a doctor. The questionnaire also included detailed information on other potential risk factors for H pylori infection, such as housing conditions, family demographics, and socioeconomic factors. The prevalence of H pylori infection in the children of parents with a history of gastric or duodenal ulcer was compared with that in children whose parents had no such history. Multiple logistic regression was used to adjust for known or suspected risk factors that might confound the results.

Overall, 945 of the 1201 children participated in the study (response rate 79%). To minimise false negative results from the urea breath test, 82 children were excluded because they had received antibiotic treatment within the preceding 4 weeks. A history of gastric or duodenal ulcer was reported in 22 mothers and 28 fathers (table). Overall, 118 (14%) of the 863 children were infected with H pylori. Among children whose mothers had a history of gastric or duodenal ulcer the prevalence of infection was more than double that in children whose mothers are not infected. The difference between the prevalence of infection in children whose mothers have a history of ulcer and H pylori infection in their or her offspring in a large population of preschool children is likely to be even larger than the difference shown by the mothers with a history of ulcer in this study.

In theory, the relation between a parent's history of ulcer and H pylori infection in his or her offspring may be explained by several mechanisms, including common environmental or genetic factors that influence susceptibility to infection. However, these factors imply that a history of ulcer in the mother or father will be similarly associated with infection in a child. As mothers typically have closer contact with their children, a more plausible explanation for the observed patterns would be transmission between mother and infant. Our results would also be consistent with the hypotheses that the transmission may be influenced by the presence of ulcer or that H pylori strains causing peptic ulcer may be more infective than other strains.

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