

## COMMENTS AND RESPONSES

### Comment on: Rayner et al. Stomach Bugs and Diabetes: An Astounding Observation or Just Confounding? Diabetes Care 2012;35:463–464

**W**e read the commentary by Rayner, Talley, and Horowitz (1) with much interest, since it raised the possibility of confounding by sociodemographic factors in our findings. We would like to clarify that our study on elderly Latinos (2) controlled for potential confounding of the relationship between chronic infections and diabetes by sociodemographic factors. We controlled for age, sex, and education level, which is an important maker of socioeconomic status in elderly whose income may not necessarily reflect wealth post-retirement. Rayner, Talley, and Horowitz point to the Physicians' Health Study as an example of socioeconomically homogenous sample of population; our study followed a group of individuals homogenous in terms of their ethnicity, age range, education level, and area of residence. Thus, we strongly disagree that our findings may have been due to

potential confounding by socioeconomic factors. As our study was an observational study, we accept the possibility of residual confounding by potentially unknown confounders. We included age, sex, education, vascular disease, BMI, smoking, blood pressure, and cholesterol levels as covariates. If other unknown confounders explain the strong and significant relationship we observed (hazard ratio 2.69 [95% CI 1.10–6.60]), it would have to be a particularly large yet unknown confounder for the results we observed. It is possible that there are other unknown gut infections that travel with *Helicobacter pylori* (*H. pylori*) that could affect one's risk of diabetes. Literature points to a potential relationship between gut flora and insulin resistance and diabetes through altered energy harvesting and lipid metabolism (3). It is also possible that individuals who are seronegative for *H. pylori* have a different genetic makeup than those without the infection. Twin studies have shown that monozygotic twins are more likely to have concordant *H. pylori* infection status than dizygotic twins, demonstrating that certain genetic factors predispose one to *H. pylori* infection (4). It would be of value to investigate how these genetic factors are related to risk of noncommunicable diseases such as diabetes. Given that we have yet to understand the mechanism of the strong association we found, we also believe it is yet premature to recommend a wholesale treatment regimen for individuals with serological evidence of *H. pylori* infection for prevention of diabetes. Nevertheless, our study warrants the need for further studies on the potential

benefit of antimicrobial treatment in preventing diabetes.

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#### References

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