TWO AUTHORS REPLY

We thank Dr. Kabir (1) for his interest in our report on the differential association of anthropometric factors with histologic types of lung cancer in the Iowa Women's Health Study cohort (2). We agree that the results from this cohort of older women may not apply to other population groups that include men and younger women. Hopefully, other researchers with the relevant data will be motivated to investigate whether the differential associations of body mass index and waist circumference with lung cancer subtypes seen in our study are observed in other groups.

Dr. Kabir's hypothesis that unmeasured environmental tobacco smoke may explain our results is intriguing but seems somewhat unlikely. Environmental tobacco smoke is certainly an established risk factor for cancer. However, in order for environmental tobacco smoke to act as a confounder to the anthropometric-histologic subtype association, it would have to be associated with both lung cancer (which it is) and waist circumference. We are unaware of any data that suggest that environmental tobacco smoke alone is sufficient to influence fat distribution patterns. If other groups have data on both environmental tobacco smoke and anthropometric factors, including waist circumference, this would be a most intriguing question to address.

In our analyses, we found that increasing quintiles of waist circumference were associated with decreased risk of squamous and small cell lung cancer. However, there was no association seen with waist circumference levels and adenocarcinoma of the lung. As we stated in our article, this was in direct opposition to our a priori hypothesis that adenocarcinoma was the histologic subtype most likely to be influenced by non-tobacco-related causes and would be the type most strongly associated with various anthropometric factors. Further, our results do not support the hypothesis that the current obesity epidemic can explain any portion of the increasing rates of adenocarcinoma being seen today (3, 4). Therefore, in response to Dr. Kabir's "wondering" as to whether our original hypothesis is "always true," our data clearly show that indeed it is not.

References

1. Kabir Z. Re: "Differential association of body mass index and fat distribution with three major histologic types of lung cancer: evidence from a cohort of older women." (Letter). Am J Epidemiol 2003;158:288.
2. Olson JE, Yang P, Schmitz K, et al. Differential association of body mass index and fat distribution with three major histologic types of lung cancer: evidence from a cohort of older women. Am J Epidemiol 2002;156:606–15.
3. Levi F, Franceschi S, La Vecchia C, et al. Lung carcinoma trends by histologic type in Vaud and Neuchatel, Switzerland, 1974–1994. Cancer 1997;79:906–14.
4. Travis WD, Lubin J, Ries L, et al. United States lung carcinoma incidence trends: declining for most histologic types among males, increasing among females. Cancer 1996;77:2464–70.

J. E. Olson and T. A. Sellers

Health Sciences Research, Mayo Foundation, Rochester, MN 55905

RE: "STATISTICAL ANALYSIS OF CORRELATED DATA USING GENERALIZED ESTIMATING EQUATIONS: AN ORIENTATION"

In the paper by Hanley et al. (1) recently published in the *Journal*, the (unnumbered) equation at the bottom of the second column of page 367 is in error. It should read as follows:

$$\bar{y}_{1:w:w} = \frac{1}{1+2w}y_{\text{singleton}} + \frac{w}{1+2w}y_{sib1} + \frac{w}{1+2w}y_{sib2}$$

In addition, in the first column of page 369, the sentence on line 4 should begin with "It is a weighted average" instead of "It is a weighed average."

Reference

1. Hanley JA, Negassa A, deB Edwardes MD, et al. Statistical analysis of correlated data using generalized estimating equations: an orientation. Am J Epidemiol 2003;157:364–75.

James H. Godbold

Department of Community and Preventive Medicine, Mount Sinai School of Medicine, New York, NY 10029

• • • • • • • • • • • •

Hanley et al. (1) recently provided an excellent explanation of the generalized estimating equations approach to a wider audience. There is no doubt that their article will make this approach even more popular in epidemiologic research. However, the comment on page 374 about the availability of alternative logistic regression in common statistical software is not strictly true. For example, SAS version 8.0 PROC GENMOD can easily be used to fit this model. A clear demonstration can be found on page 1455 of the SAS manual (2).

References

1. Hanley JA, Negassa A, deB Edwardes MD, et al. Statistical analysis of correlated data using generalized estimating equations: an orientation. Am J Epidemiol 2003;157:364–75.
2. SAS Institute, Inc. SAS/STAT user's guide, version 8. Cary, NC: SAS Institute Inc, 1999.

Guangyong Zou

Robarts Clinical Trials, Robarts Research Institute, London, Ontario N6A 5K8, Canada

THE FIRST AUTHOR REPLIES

We thank Dr. Godbold (1) for noticing the typographic errors in the definition of the weighted average on page 367

Downloaded from http://aje.oxfordjournals.org/ at University of North Texas on January 5, 2017