TABLE 2. Weighted linear regression analysis similar to that of Fahey et al.* in their table 4 indicating a strong relation between diagnostic test accuracy and disease prevalence

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>Partial regression coefficient</th>
<th>95% confidence interval</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>Disease prevalence</td>
<td>0.23</td>
<td>-0.01 to 0.48</td>
<td>0.0592</td>
</tr>
<tr>
<td></td>
<td>Clinical use†</td>
<td>-0.12</td>
<td>-0.23 to -0.01</td>
<td>0.0275</td>
</tr>
<tr>
<td></td>
<td>Publication year</td>
<td>-0.02</td>
<td>-0.04 to -0.01</td>
<td>0.0090</td>
</tr>
<tr>
<td>Specificity</td>
<td>Disease prevalence</td>
<td>-0.50</td>
<td>-0.67 to -0.32</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td></td>
<td>Clinical use†</td>
<td>0.15</td>
<td>0.07 to 0.22</td>
<td>0.0003</td>
</tr>
<tr>
<td></td>
<td>Publication year</td>
<td>0.003</td>
<td>-0.01 to 0.02</td>
<td>0.6837</td>
</tr>
<tr>
<td>Log odds ratio</td>
<td>Disease prevalence</td>
<td>-1.21</td>
<td>-2.22 to -0.20</td>
<td>0.0202</td>
</tr>
<tr>
<td></td>
<td>Clinical use†</td>
<td>0.27</td>
<td>-0.16 to 0.71</td>
<td>0.2147</td>
</tr>
<tr>
<td></td>
<td>Publication year</td>
<td>-0.02</td>
<td>-0.10 to 0.05</td>
<td>0.5499</td>
</tr>
</tbody>
</table>

* Am J Epidemiol 1995;141:680-9 (1)
† Clinical use coding 0 = screening, 1 = follow-up


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THE AUTHORS REPLY

We thank Dr. Boyko (1) for the useful suggestion in his letter to the editor regarding our meta-analysis of Papanicolaou (Pap) test accuracy (2). In our meta-analysis, Pap test accuracy was determined by comparison with histology, which we stated may not be a perfect reference test (2). Boyko (1) noted that, when the reference test is itself imperfect, diagnostic test accuracy is associated with disease prevalence (3) and suggested that disease prevalence should be included in models examining the variation in Pap test accuracy. We agree and report the weighted regression analysis predicting Pap test accuracy measured by the log odds ratio, with histologically determined disease prevalence and all of the study characteristics used in our original analysis (2) included as predictors (table 1). Note that independence of assessments and histologic threshold were added to the model reported by Boyko (1). After including disease prevalence, the regression coefficients for the other study characteristics were very similar to those reported in table 4 of our original paper (2). The association between disease prevalence and the log odds ratio after adjusting for all other study characteristics (table 1) was similar to that reported by Boyko (1) and supports a consideration of disease prevalence in the assessment of diagnostic test accuracy.

The inclusion of disease prevalence in meta-analytic models predicting diagnostic accuracy will give readers an indication of whether imperfections in the reference standard are important and may improve estimates of other predictors.

REFERENCES


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