The results presented by Leung et al show the greatest discordance between the reference values of Ip et al$^3$ and Knudson et al$^4$, which is not surprising given the populations from which they were derived. These results reinforce the need for the development and use of reference equations that are reflective of the population being evaluated throughout the world. These equations could even be applied to specific populations in the United States. Doing so will enable clinicians here and abroad to more accurately identify and quantify pulmonary dysfunction, which may in turn result in the earlier detection and treatment of lung disease, and the conservation of valuable resources. We look forward to further research and subsequent guidance regarding these important questions.

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Miller-Fisher Variant of Guillain-Barré Syndrome

To the Editor:

I read with interest the recent article in CHEST (October 2008) by Pujar and Spinello.$^1$ The authors concluded that glove and stocking paresthesias are key points in the Miller-Fisher variant of Guillain-Barré syndrome. I disagree. Apart from the clinical triad (ataxia, areflexia, and ophthalmoplegia), the common

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We commend Leung and colleagues on their interest and contribution to the research on this subject. As mentioned in our article (November 2008),$^1$ the American Thoracic Society/European Respiratory Society published guidelines$^2$ in 2005 recommending the use of the reference values from the National Health and Nutrition Examination Study III population data set in the United States for patients 8 to 80 years of age. Currently, no guidance exists regarding the optimal reference equations for use outside the United States. The American Thoracic Society/ European Respiratory Society guidelines$^2$ only recommend that pulmonary function testing laboratories should use a reference equation derived from a population similar to the individual subject using the same kind of instrument and testing procedure.

The authors declare that the material here submitted is original and is not currently under consideration nor has been accepted for publication elsewhere. All authors have read the manuscript and approved its submission. The authors have reported to the ACCP that no significant conflicts of interest exist with any companies/organizations whose products or services may be discussed in this article.

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(11.9%), respectively, would be reclassified to normal from obstructive if the three sets of equations alluded were switched to those of Ip et al.$^6$

It would therefore appear that such discordance could be widespread with changes in reference equations in different populations. Further research is indicated to address this outstanding question in lung function test interpretation so as to minimize the potential impact on patient care.
Impact of Pulmonary Tuberculosis on Menstrual Pattern and Fertility

To the Editor:

The association of pulmonary tuberculosis (TB) and female reproductive health problems is not well addressed.1–3 This prospective case-control study4 was done at Assiut University and Women’s Health University Hospitals to estimate the effect of pulmonary TB on menstrual patterns and fertility of women of child-bearing age. It was composed of 429 women with pulmonary TB on menstrual patterns and fertility of women of child-bearing age (study group) and 100 age-matched healthy women (control group). A detailed medical history was obtained, and a clinical examination, routine investigations of pulmonary TB, and transvaginal ultrasonography (TVS) were performed for all cases. Hysterosalpingography, combined laparoscopy and hysteroscopy, were done for infertile women when indicated. Menstrual abnormalities were reported in 66% of women in the study group. Secondary amenorrhea (112 cases, 26.5%; p < 0.001) and hypomenorrhea (86 cases, 20%; p < 0.001) were significantly higher in the study group compared with subjects in the control group (Table 1). Patients with more extensive chest-radiologic shadows and prolonged course of pulmonary TB were more susceptible. TVS revealed functional ovarian cysts in 85 women in the study group (19.8%). After completing antituberculous treatment, 76% of the study group had resumed normal menstrual cycles. Among 68 women who sought fertility within 1 year after completion of the treatment, TB peritubal and fine intrauterine adhesions were confirmed by hysterosalpingography in 2 women and 1 infertile woman, respectively (0.7% of study group), whereas persistence of the simple ovarian cysts was observed in 2 women.

This study highlights the importance of proper cooperation between chest specialists and gynecologists for women with TB. Menstrual abnormalities without pathologic affection of the female genital tract represent the salient abnormality associated with pulmonary TB. Routine TVS for those women is recommended. Pretreatment counseling should provide a hint about these temporary reversible changes. Pulmonary TB carries an insignificant risk of female fertility. Persistence of menstrual dysfunction or the presence of infertility after completion of treatment should attract attention about the possibility of genital tract involvement.

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Table 1—Menstrual Patterns in Study and Control Groups

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Study Group (429 Women)</th>
<th>Control Group (100 Women)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal pattern</td>
<td>143 (33%)</td>
<td>72 (72%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Secondary amenorrhea</td>
<td>112 (26.5%)</td>
<td>2 (2%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Hypomenorrhea</td>
<td>86 (20%)</td>
<td>3 (3%)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Intermenstrual spotting</td>
<td>27 (6.5%)</td>
<td>6 (6%)</td>
<td>0.345</td>
</tr>
<tr>
<td>Menorrhagia</td>
<td>7 (1.5%)</td>
<td>2 (2%)</td>
<td>0.542</td>
</tr>
<tr>
<td>Dysmenorrhea</td>
<td>54 (12.5%)</td>
<td>15 (15%)</td>
<td>0.873</td>
</tr>
</tbody>
</table>

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