

burden: lung volume reduction surgery and lung transplantation (2). Although both these therapies can have significant benefits to patients, they also have significant complications and costs associated with them that far exceed those that have been reported in patients undergoing endobronchial lung volume reduction therapy (2, 3). We also wholeheartedly agree with Dr. Jain that future research should focus on better predictors of patient outcomes, the minimization of risk, and providing improved outcomes in the most cost-effective fashion. ■

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Gerard J. Criner, M.D.*
Lewis Katz School of Medicine at Temple University
Philadelphia, Pennsylvania

On behalf of all the authors

ORCID ID: 0000-0003-1267-3483 (G.J.C.).

*Corresponding author (e-mail: gerard.crinier@tuhs.temple.edu).

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Sex Hormones and Asthma: Don't Forget Progesterone

To the Editor:

We read with interest the observational findings of Han and colleagues, who reported that raised serum estradiol was associated with a lower likelihood of asthma in obese women and in nonobese men (1). Pointedly, their study did not evaluate the potential effect of progesterone, which is known to aggravate airway IL-5–mediated eosinophilia and

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associated airway hyperresponsiveness to methacholine in the murine model of allergic asthma (2). Moreover, increased endogenous luteal phase progesterone levels in women with asthma are accompanied by a marked increase in airway hyperresponsiveness to adenosine monophosphate, which can be abolished by the combined oral contraceptive pill (3). Interestingly, in women with asthma, exogenous progesterone, but not estradiol, results in downregulation of lymphocyte β -2 receptors and an attenuated 3',5'-cyclic adenosine monophosphate response to isoproterenol (4), whereas in women without asthma, the opposite occurs (5), and in men without asthma, there is no change (6). Hence, we believe that further observational studies should also focus on cyclical changes in sex hormones, including progesterone, in women, as this is more likely to explain sex-specific differences in asthma. ■

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Brian Lipworth, M.D.*
Rory Chan, M.B. Ch.B.
Chris RuiWen Kuo, M.B. Ch.B.
Scottish Centre for Respiratory Research
Dundee, United Kingdom

*Corresponding author (e-mail: b.j.lipworth@dundee.ac.uk).

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Reply to Lipworth et al.

From the Authors:

We thank Dr. Brian Lipworth and colleagues for their interest in our recent cross-sectional study of sex steroid hormones and

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asthma among adult participants in the National Health and Nutrition Examination Survey (1). We showed that elevated serum levels of free testosterone were associated with lower odds of current asthma in women. After stratification by obesity, we found that elevated serum levels of both free testosterone and estradiol were associated with lower odds of current asthma in obese women and that an elevated serum estradiol level was associated with lower odds of current asthma in nonobese men (1).

Similar to estradiol, progesterone levels fluctuate according to the follicular phase of the menstrual cycle. As acknowledged in the DISCUSSION of our study limitations, we had no information on such phases of the menstrual cycle. Moreover, serum progesterone was not measured in the National Health and Nutrition Examination Survey. We agree with Dr. Lipworth and colleagues that a potential role of progesterone should be examined in future longitudinal studies of sex hormones and asthma. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

Yueh-Ying Han, Ph.D.
Erick Forno, M.D.
Juan C. Celedón, M.D., Dr.P.H.*
University of Pittsburgh
Pittsburgh, Pennsylvania

ORCID IDs: 0000-0002-8409-3077 (Y.-Y.H.); 0000-0001-6497-9885 (E.F.); 0000-0002-6139-5320 (J.C.C.).

*Corresponding author (e-mail: juan.celedon@chp.edu).

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Erratum: Reference Equations for the Six-Minute Walk in Healthy Adults



The *Journal* has been alerted to the presence of errors in an article published in the November 1998 issue (1). Figure 1 in the article is a scattergram of the relationship between 6-minute-walk distance and age in 117 healthy adult men; Figure 2 shows the equivalent data for 173 healthy adult women. However, these panels are erroneous: the two figures are identical except for the panel labels; all the points plotted, linear regression lines, and confidence interval lines are the same. The authors have informed us that the data plotted in the Figure 2 (females) panels were inadvertently duplicated in Figure 1 (males).

Neither author has access to their original data or figures at present; they have therefore been unable to provide a corrected version of Figure 1. However, the authors continue to have confidence in the conclusions of the article and the validity of the 6-minute-walk reference equations stated in Table 3; these have been demonstrated to be reliable in numerous studies. ■

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