Correspondence

Erratum: Correction of Conflict of Interest Statement

From the Editor:

In an editorial by Claudia I. Henschke published in the November 15, 2003, issue of the *AJRCCM* (1), it was stated that Dr. Henschke had no declared conflict of interest. The Editor contacted Dr. Henschke in May 2008 concerning corrections issued in April 2008 by two other journals (2, 3) regarding the conflict of interest disclosures made by her in articles and letters to the editor concerning the International Early Lung Cancer Action Project (I-ELCAP). These corrections pertained to patents and royalties, as well as funding from the Foundation for Lung Cancer: Early Detection, Prevention and Treatment. I-ELCAP was also referenced in the *AJRCCM* editorial.

Dr. Henschke provided the Editor with the following corrected conflict of interest statement for her editorial, and also commented to the Editor that the funding of her and her colleagues' work referred to in the reference section of the editorial did not include any funding from the Foundation for Lung Cancer: Early Detection, Prevention and Treatment:

Conflict of Interest Statement: C.I.H. has reported being a coinventor of three (3) pending patent applications filed by the Cornell Research Foundation, Inc. (CRF), a subsidiary of Cornell University, from 2000 to 2003. These applications pertain to three-dimensional image rendering and analysis and/or small pulmonary nodule computer-aided diagnosis from computed tomography scans. The CRF licensed certain of these technologies to General Electric starting in 2001 and has received royalties, of which a portion has been distributed to C.I.H.

EDWARD ABRAHAM
Editor

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Whole-Body “Negative-Pressure” Ventilation: Is It Really Different?

To the Editor:

The article by Dr. Grasso and colleagues (1) in a rabbit model of acute lung injury claims to show superiority of whole-body “negative-pressure” ventilation (NPV) over conventional positive-pressure ventilation (PPV). They report that NPV resulted in better oxygenation, greater lung volume at FRC, less atelectasis on computed tomography (CT), and less ventilator-induced lung injury on histology. In respiratory mechanics, the term “negative pressure” denotes that the pressure at some location is slightly less positive than ambient atmospheric pressure, not that the pressure is less than zero (i.e., less than absolute vacuum). The idea that whole-body external “negative pressure” can have a different effect on the respiratory system than internal positive pressure has been a point of confusion for at least a century (2).

Conventional respiratory mechanics holds that volume change during passive mechanical ventilation depends on the transrespiratory pressure, P_{rs} (positive pressure at the airway opening minus slightly lower positive pressure at the body surface), and

the effects of the pressure difference are the same whether pressure is increased at the airway in PPV or reduced at the body surface in whole-body NPV (2). From this perspective, the dramatic results of Grasso and coworkers are surprising and require critical examination. The authors hypothesize that NPV “applies pressure over the whole lung surface,” and that “negative pressure must take effect through the chest wall before impacting on the pleural space.” These statements are equally true of ambient pressure.

Before discarding conventional respiratory mechanics, it is important to be sure that there are no differences between NPV and PPV with regard to ventilation parameters known to affect measured outcome variables: atelectasis, oxygenation, and lung injury. Several studies in acute lung injury have shown that these outcome variables improve with higher end-expiratory P_{rs} , usually brought about by higher positive end-expiratory pressure (PEEP) (3–6). A fair comparison of the different modes requires that P_{rs} and its waveform are matched throughout the duration of NPV and PPV. As the authors correctly point out, pleural and transpulmonary pressure measurements are subject to artifact, but if the respiratory muscles are relaxed, the essential information can be obtained from P_{rs} . Measurements of P_{rs} and its components (airway pressure and body surface pressure) were not reported in this study. Video-CT scans in the online supplement suggest that P_{rs} was substantially greater on NPV than PPV; this would explain the findings without requiring us to relinquish conventional respiratory mechanics.

Conflict of Interest Statement: Neither author has a financial relationship with a commercial entity that has an interest in the subject of this manuscript.

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From the Authors:

We thank Drs. Loring and Banzett for their insightful comments. The crux of their commentary is the equivalence of transrespir-