

LETTER

Nitrogen washout/washin, helium dilution, and computed tomography in the assessment of end-expiratory lung volume

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See related research by Chiumello *et al.*, <http://ccforum.com/content/12/6/R150> and correction at <http://ccforum.com/content/13/2/405>

We read thoroughly the article published by Chiumello and colleagues [1] in a past issue of *Critical Care*, along with its corresponding erratum [2], and we believe that the authors have erroneously computed the limits of agreement on several occasions in their article. Indeed, according to the original article by Bland and Altman [3], which was cited by the authors in their Materials and methods section, the limits of agreement should be computed as bias \pm 2 standard deviations.

Chiumello and colleagues [1] claimed that the average difference \pm 1 standard deviation in the values of end-expiratory lung volume (EELV) measured with the Engström Carestation ventilator (GE Healthcare, Little Chalfont, Buckinghamshire, UK) and with the computed tomography scan amounted to 93 ± 143 mL and the limits of agreement to -50 to 236 mL. With 143 mL as the standard deviation of the bias, limits of agreement should hence become this: $[93 - 2 \times 143] - [93 + 2 \times 143]$ mL = -193 to 379 mL. The graphical representation of these limits of agreement in the authors' Figure one [2] is, however, correctly drawn in the interval (green lines) of -193 to 379 mL. So, there is a discrepancy between incorrect computation but a correct graphical representation of the limits of agreement for EELV with both techniques.

Abbreviation

EELV: End-expiratory lung volume.

Competing interests

The authors declare that they have no competing interests.

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References

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