

Chapter 32

REFERENCES

1. Hess D. An overview of noninvasive monitoring in respiratory care: present, past, and future. *Respir Care*. 1990;35:482-499.
2. Lucangelo U, Blanch L. Dead space. *Intensive Care Med*. 2004;30:576-579.
3. Drummond GB, Fletcher R. Editorial II. Dead-space: invasive or not? *Br J Anaesth*. 2006;96:4-7.
4. Tang Y, Turner MJ, Baker AB. A new equal area method to calculate and represent physiologic, anatomical, and alveolar dead spaces. *Anesthesiology*. 2006;104:696-700.
5. Nuckton TJ, Alonso JA, Kallet RH, et al. Pulmonary dead-space fraction as a risk factor for death in the acute respiratory distress syndrome. *N Engl J Med*. 2002;346:1281-1286.
6. Kallet RH, Alonso JA, Pittet JF, Matthay MA. Prognostic value of the pulmonary dead-space fraction during the first 6 days of acute respiratory distress syndrome. *Respir Care*. 2004;49:1008-1014.
7. Siddiki H, Kojicic M, Li G, et al. Bedside quantification of dead-space fraction using routine clinical data in patients with acute lung injury: secondary analysis of two prospective trials. *Crit Care*. 2010;14(4):R141.
8. Hubble CL, Gentile MA, Tripp DS, et al. Dead-space to tidal volume ratio predicts successful extubation in infants and children. *Crit Care Med*. 2000;28:2034-2040.
9. Raurich JM, Vilar M, Colomar A, et al. Prognostic value of the pulmonary dead-space fraction during the early and intermediate phases of acute respiratory distress syndrome. *Respir Care*. 2010;55:282-287.
10. Lucangelo U, Bernabè F, Vatua S, et al. Prognostic value of different dead space indices in mechanically ventilated patients with acute lung injury and ARDS. *Chest*. 2008;133:62-71.
11. Fencel V, Jabor A, Kazda A, Figge J. Diagnosis of metabolic acid-base disturbances in critically ill patients. *Am J Respir Crit Care Med*. 2000;162:2246-2251.
12. Ali MS, Harmer M, Vaughan RS, et al. Changes in cerebral oxygenation during cold (28 degrees C) and warm (34 degrees C) cardiopulmonary bypass using different blood gas strategies (alpha-stat and pH-stat) in patients undergoing coronary artery bypass graft surgery. *Acta Anaesthesiol Scand*. 2004;48:837-844.
13. Acsell JR. pH-stat ventilation management: a simple method of achieving this regimen. *J Extra Corpor Technol*. 2003;35:287-289.
14. Kiziltan HT, Baltali M, Bilen A, et al. Comparison of alpha-stat and pH-stat cardiopulmonary bypass in relation to jugular venous oxygen saturation and cerebral glucose-oxygen utilization. *Anesth Analg*. 2003;96:644-650.
15. Laussen PC. Optimal blood gas management during deep hypothermic paediatric cardiac surgery: alpha-stat is easy, but pH-stat may be preferable. *Paediatr Anaesth*. 2002;12:199-204.
16. Kofstad J. Blood gases and hypothermia: some theoretical and practical considerations. *Scand J Clin Lab Invest Suppl*. 1996;224:21-26.
17. Ye J, Li Z, Yang Y, et al. Use of a pH-stat strategy during retrograde cerebral perfusion improves cerebral perfusion and tissue oxygenation. *Ann Thorac Surg*. 2004;77:1664-1670.
18. Rivers E, Nguyen B, Havstad S, et al. Early goal-directed therapy in the treatment of severe sepsis and septic shock. *N Engl J Med*. 2001;345:1368-1377.
19. Giuliano KK, Liu LM. Knowledge of pulse oximetry among critical care nurses. *Dimens Crit Care Nurs*. 2006;25:44-49.
20. Stoneham MD, Saville GM, Wilson IH. Knowledge about pulse oximetry among medical and nursing staff. *Lancet*. 1994;344:1339-1342.
21. Fouzas S, Politis P, Skylogianni E, et al. Knowledge on pulse oximetry among pediatric health care professionals: a multi-center survey. *Pediatrics*. 2010;126:e657-e662.
22. Hampson NB. Pulse oximetry in severe carbon monoxide poisoning. *Chest*. 1998; 114:1036-1041.
23. Barker SJ, Tremper KK, Hyatt J. Effects of methemoglobinemia on pulse oximetry and mixed venous oximetry. *Anesthesiology*. 1989;70:112-117.
24. Rajadurai VS, Walker AM, Yu VY, et al. Effect of fetal haemoglobin on the accuracy of pulse oximetry in preterm infants. *J Paediatr Child Health*. 1992;28:43-46.
25. Kress JP, Pohlman AS, Hall JB. Determinants of hemoglobin saturation in patients with acute sickle chest syndrome. A comparison of arterial blood gases and pulse oximetry. *Chest*. 1999;115:1316-1320.
26. Scheller MS, Unger RJ, Kelner MJ. Effects of intravenously administered dyes on pulse oximeter readings. *Anesthesiology*. 1986;65:550-552.
27. Cote CJ, Goldstein EA, Fuchsman WH, et al. The effect of nail polish on pulse oximetry. *Anesth Analg*. 1989;67:683-686.

28. Yamamoto LG, Yamamoto JA, Yamamoto JB, Yamamoto BE, Yamamoto PP. Nail polish does not significantly affect pulse oximetry measurements in mildly hypoxic subjects. *Respir Care*. 2008;53:1470-1474.
29. Veyckemans F, Baele P, Guillaume JE, et al. Hyperbilirubinemia does not interfere with hemoglobin saturation measured by pulse oximetry. *Anesthesiology*. 1989;70:118-122.
30. Bickler PE, Feiner JR, Severinghaus JW. Effects of skin pigmentation on pulse oximeter accuracy at low saturation. *Anesthesiology*. 2005;102:715-719.
31. Zeballos RJ, Wiesman IM. Reliability of noninvasive oximetry in black subjects during exercise and hypoxia. *Am Rev Respir Dis*. 1991;144:1240-1244.
32. Jubran A, Tobin MJ. Reliability of pulse oximetry in titrating supplemental oxygen therapy in ventilator-dependent patients. *Chest*. 1990;97:1420-1425.
33. Severinghaus JW, Koh SO. Effect of anemia on pulse oximeter accuracy at low saturation. *J Clin Monit*. 1990;6:85-88.
34. Freund PR, Overand PT, Cooper J, et al. A prospective study of intraoperative pulse oximetry failure. *J Clin Monit*. 1991;7:253-258.
35. Plummer JL, Ilesley AH, Fronsco RRL, et al. Identification of movement artefact by the Nellcor N-200 and N-3000 pulse oximeters. *J Clin Monit*. 1997;13:109-113.
36. Gehring H, Nornberger C, Matz H, et al. The effects of motion artifact and low perfusion on the performance of a new generation of pulse oximeters in volunteers undergoing hypoxemia. *Respir Care*. 2002;47:48-60.
37. Goldman JM, Petterson MT, Kopotic RJ, et al. Masimo signal extraction pulse oximetry. *J Clin Monit*. 2000;16:475-483.
38. Barker SJ. "Motion-resistant" pulse oximetry: a comparison of new and old models. *Anesth Analg*. 2002;95:967-972.
39. Durbin CG, Rostow SK. More reliable oximetry reduces the frequency of arterial blood gas analyses and hastens oxygen weaning after cardiac surgery: a prospective, randomized trial of the clinical impact of a new technology. *Crit Care Med*. 2002;30:1734-1740.
40. Robertson FA, Hoffman GM. Clinical evaluation of the effects of signal integrity and saturation on data availability and accuracy of Masimo SE and Nellcor N-395 oximeters in children. *Anesth Analg*. 2004;98:617-622.
41. Giuliano KK, Higgins TL. New-generation pulse oximetry in the care of critically ill patients. *Am J Crit Care*. 2005;14:26-37.
42. Richards NM, Giuliano KK, Jones PG. A prospective comparison of 3 new-generation pulse oximetry devices during ambulation after open heart surgery. *Respir Care*. 2006;51:29-35.
43. Barker SJ, Badal JJ. The measurement of dyshemoglobins and total hemoglobin by pulse oximetry. *Curr Opin Anaesthesiol*. 2008;21:805-810.
44. Feiner JR, Bickler PE. Improved accuracy of methemoglobin detection by pulse CO-oximetry during hypoxia. *Anesth Analg*. 2010;111(5):1160-1167.
45. Feiner JR, Bickler PE, Mannheimer PD. Accuracy of methemoglobin detection by pulse CO-oximetry during hypoxia. *Anesth Analg*. 2010;111(1):143-148.
46. Barker SJ, Curry J, Redford D, Morgan S. Measurement of carboxyhemoglobin and methemoglobin by pulse oximetry: a human volunteer study. *Anesthesiology*. 2006;105:892-897.
47. Pedersen T, Møller AM, Pedersen BD. Pulse oximetry for perioperative monitoring: systematic review of randomized, controlled trials. *Anesth Analg*. 2003;96:426-431.
48. Moller JT, Pedersen T, Rasmussen LS, et al. Randomized evaluation of pulse oximetry in 20,802 patients. I. Design, demography, pulse oximetry failure rate, and overall complication rate. *Anesthesiology*. 1993;78:436-444.
49. Moller JT, Johannessen NW, Espersen K, et al. Randomized evaluation of pulse oximetry in 20,802 patients. II. Perioperative events and postoperative complications. *Anesthesiology*. 1993;78:445-453.
50. Hartert TV, Wheeler AP, Sheller JR. Use of pulse oximetry to recognize severity of airflow obstruction in obstructive airway disease: correlation with pulsus paradoxus. *Chest*. 1999;115:475-481.
51. Cannesson M, Besnard C, Durand PG, et al. Relation between respiratory variations in pulse oximetry plethysmographic waveform amplitude and arterial pulse pressure in ventilated patients. *Crit Care*. 2005;9:R562-R568.
52. Maas AI, Citerio G. Noninvasive monitoring of cerebral oxygenation in traumatic brain injury: a mix of doubts and hope. *Intensive Care Med*. 2010;36:1283-1285.
53. Leal-Noval SR, Cayuela A, Arellano-Orden V, et al. Invasive and noninvasive assessment of cerebral oxygenation in patients with severe traumatic brain injury. *Intensive Care Med*. 2010;36:1309-1317.
54. Martini RP, Deem S, Yanez ND, et al. Management guided by brain tissue oxygen monitoring and outcome following severe traumatic brain injury. *J Neurosurg*. 2009;111:644-649.
55. Hess DR, Capnometry IN, Tobin MJ. *Principles and Practice of Intensive Care Monitoring*. New York, NY: McGraw-Hill; 1998.
56. Colman Y, Krauss B. Microstream capnography technology: a new approach to an old problem. *J Clin Monit*. 1999;15:403-409.
57. Hoffbrand BI. The expiratory capnogram: a measure of ventilation-perfusion inequalities. *Thorax*. 1966;21:518-523.
58. Yaron M, Padyk P, Hutsinpilller M, et al. Utility of expiratory capnogram in the assessment of bronchospasm. *Ann Emerg Med*. 1996;28:403-407.
59. You B, Peslin R, Duviolier C, et al. Expiratory capnography in asthma: evaluation of various shape indices. *Eur Respir J*. 1994;7:318-323.
60. Yamanaka MK, Sue DY. Comparison of arterial-end-tidal PCO₂ difference and dead space/tidal volume ratio in respiratory failure. *Chest*. 1987;92:832-835.
61. Jones NL, McHardy GJR, Naimark A, et al. Physiological dead space and alveolar-arterial gas pressure differences during exercise. *Clin Sci*. 1966;31:19-29.
62. Nunn JF, Hill DW. Respiratory dead space and arterial to end-tidal CO₂ tension difference in anesthetized man. *J Appl Physiol*. 1960;15:383-389.
63. Severinghaus JW, Stupfel MA, Bradley AF. Alveolar dead space and arterial to end-tidal carbon dioxide differences during hypothermia in dog and man. *J Appl Physiol*. 1957;10:349-355.
64. Fletcher R, Jonson B, Cumming G, et al. The concept of dead-space with special reference to the single breath test for carbon dioxide. *Br J Anaesth*. 1981;53:77-88.
65. Fletcher R, Jonson B. Dead-space and the single breath test for carbon dioxide during anaesthesia and artificial ventilation. *Br J Anaesth*. 1984;56:109-119.
66. Tulou PP, Walsh PW. Measurement of alveolar carbon dioxide tension at maximal expiration as an estimate of arterial carbon

- dioxide tension in patients with airway obstruction. *Am Rev Respir Dis.* 1970;102:921-926.
67. Birmingham PK, Cheney FW, Ward RJ. Esophageal intubation: a review of detection of techniques. *Anesth Analg.* 1986;65:886-891.
 68. Guggenberger H, Lenz G, Federle R. Early detection of inadvertent oesophageal intubation: pulse oximetry vs. capnography. *Acta Anaesthesiol Scand.* 1989;33:112-115.
 69. Holland R, Webb RK, Runciman WB. The Australian Incident Monitoring Study. Oesophageal intubation: an analysis of 2000 incident reports. *Anaesth Intensive Care.* 1993;21:608-610.
 70. Linko K, Paloheimo M, Tammisto T. Capnography for detection of accidental oesophageal intubation. *Acta Anaesthesiol Scand.* 1983;27:199-202.
 71. Murray IP, Modell JH. Early detection of endotracheal tube accidents by monitoring carbon dioxide concentration in respiratory care. *Anesthesiology.* 1983;59:344-346.
 72. Szekely SM, Webb RK, Williamson JA, et al. Problems related to the endotracheal tube: an analysis of 2000 incident reports. *Anaesth Intens Care.* 1993;21:611-616.
 73. Vaghadia H, Jenkins LC, Ford RW. Comparison of end-tidal carbon dioxide, oxygen saturation and clinical signs for the detection of oesophageal intubation. *Can J Anaesth.* 1989;36:560-564.
 74. Burns SM, Carpenter R, Truweit JD. Report on the development of a procedure to prevent placement of feeding tubes into the lungs using end-tidal CO₂ measurements. *Crit Care Med.* 2001;29:936-939.
 75. Araujo-Preza CE, Melhado ME, Gutierrez FJ, et al. Use of capnometry to verify feeding tube placement. *Crit Care Med.* 2002;30:2255-2259.
 76. Garnett AR, Ornato JP, Gonzalez ER, et al. End-tidal carbon dioxide monitoring during cardiopulmonary resuscitation. *JAMA.* 1987;257:512-515.
 77. Falk JL, Rackow EC, Weil MH. End-tidal carbon dioxide concentration during cardiopulmonary resuscitation. *N Engl J Med.* 1988;318:607-611.
 78. Sanders AB, Kern KB, Otto CW, et al. End-tidal carbon dioxide monitoring during cardiopulmonary resuscitation. A prognostic indicator for survival. *JAMA.* 1989;262:1347-1351.
 79. Levine RL, Wayne MA, Miller CC. End-tidal carbon dioxide and outcome of out-of-hospital cardiac arrest. *N Engl J Med.* 1997; 337:301-306.
 80. Hatle L, Rokeseth R. The arterial to end-expiratory carbon dioxide tension gradient in acute pulmonary embolism and other cardiopulmonary diseases. *Chest.* 1974;66:352-357.
 81. Nutter DO, Massumi RA. The arterial-alveolar carbon dioxide tension gradient in diagnosis of pulmonary embolus. *Dis Chest.* 1966;50:380-387.
 82. Chopin C, Fesard P, Mangalaboyi J, et al. Use of capnography in diagnosis of pulmonary embolism during acute respiratory failure of chronic obstructive pulmonary disease. *Crit Care Med.* 1990;18:353-357.
 83. Eriksson L, Wollmer P, Olsson C, et al. Diagnosis of pulmonary embolism based upon alveolar dead space analysis. *Chest.* 1989;96:357-362.
 84. Verschuren F, Liistro G, Coffeng R, et al. Volumetric capnography as a screening test for pulmonary embolism in the emergency department. *Chest.* 2004;125:841-850.
 85. Riou Y, Leclerc F, Neve V, et al. Reproducibility of the respiratory dead space measurements in mechanically ventilated children using the CO₂SMO monitor. *Intensive Care Med.* 2004;30:1461-1467.
 86. Kallet RH, Daniel BM, Garcia O, et al. Accuracy of physiologic dead space measurements in patients with acute respiratory distress syndrome using volumetric capnography: comparison with the metabolic monitor method. *Respir Care.* 2005;50:462-467.
 87. Blanch L, Romero PV, Lucangelo U. Volumetric capnography in the mechanically ventilated patient. *Minerva Anesthesiol.* 2006;72:577-585.
 88. Blanch L, Lucangelo U, Lopez-Aguilar J, et al. Volumetric capnography in patients with acute lung injury: effects of positive end-expiratory pressure. *Eur Respir J.* 1999;13:1048-1054.
 89. Tachibana K, Imanaka H, Takeuchi M, et al. Noninvasive cardiac output measurement using partial carbon dioxide rebreathing is less accurate at settings of reduced minute ventilation and when spontaneous breathing is present. *Anesthesiology.* 2003;98:830-837.
 90. Tachibana K, Imanaka H, Miyano H, et al. Effect of ventilatory settings on accuracy of cardiac output measurement using partial CO₂ rebreathing. *Anesthesiology.* 2002;96:96-102.
 91. Yem JS, Tang Y, Turner MJ, et al. Sources of error in noninvasive pulmonary blood flow measurements by partial rebreathing. A computer model study. *Anesthesiology.* 2003;98:881-887.
 92. de Abreu MG, Geiger S, Winkler T, et al. Evaluation of a new device for noninvasive measurement of nonshunted pulmonary capillary blood flow in patients with acute lung injury. *Intensive Care Med.* 2002;28:318-323.
 93. Odenstedt H, Stenqvist O, Lundin S. Clinical evaluation of a partial CO₂ rebreathing technique for cardiac output monitoring in critically ill patients. *Acta Anaesthesiol Scand.* 2002;46:152-159.
 94. Mielck F, Buhre W, Hanekop G, et al. Comparison of continuous cardiac output measurements in patients after cardiac surgery. *J Cardiothoracic Vasc Anesth.* 2003;17:211-216.
 95. Maxwell RA, Gibson JB, Slade JB, et al. Noninvasive cardiac output by partial CO₂ rebreathing after severe chest trauma. *J Trauma.* 2001;51:849-853.
 96. Brandi LS, Bertolini S, Pieri M, et al. Comparison between cardiac output measured by thermodilution technique and calculated by O₂ and modified CO₂ Fick methods using a new metabolic monitor. *Intensive Care Med.* 1997;23:908-915.
 97. Murias GE, Villagra A, Vatua S, et al. Evaluation of a noninvasive method for cardiac output measurement in critical care patients. *Intensive Care Med.* 2002;28:1470-1474.
 98. de Abreu MG, Winkler T, Pahlitzsch T, et al. Performance of the partial CO₂ rebreathing technique under different hemodynamic and ventilation/perfusion matching conditions. *Crit Care Med.* 2003;31:543-551.
 99. Young BP, Low LL. Noninvasive monitoring cardiac output using partial CO₂ rebreathing. *Crit Care Clin.* 2010;26:383-392.
 100. Bowe EA, Boysen PG, Broome JA, et al. Accurate determination of end-tidal carbon dioxide during administration of oxygen by nasal cannulae. *J Clin Monit.* 1989;5:105-110.
 101. McNulty SE, Roy J, Torjman M, et al. Relationship between arterial carbon dioxide and end-tidal carbon dioxide when a nasal sampling port is used. *J Clin Monit.* 1990;6:93-98.
 102. Roy J, McNulty SE, Torjman MC. An improved nasal prong apparatus for end-tidal carbon dioxide monitoring in awake, sedated patients. *J Clin Monit.* 1991;7:249-252.

103. Bongard F, Wu Y, Lee TS, et al. Capnographic monitoring of extubated postoperative patients. *J Invest Surg.* 1994;7:259-264.
104. Barton CW, Wang ES. Correlation of end-tidal CO₂ measurements to arterial PaCO₂ in nonintubated patients. *Ann Emerg Med.* 1994;23:560-563.
105. Liu SY, Lee TS, Bongard F. Accuracy of capnography in nonintubated surgical patients. *Chest.* 1992;102:1512-1515.
106. Deitch K, Miner J, Chudnofsky CR, Dominici P, Latta D. Does end tidal CO₂ monitoring during emergency department procedural sedation and analgesia with propofol decrease the incidence of hypoxic events? A randomized, controlled trial. *Ann Emerg Med.* 2010;55:258-264.
107. Green SM, Pershad J. Should capnographic monitoring be standard practice during emergency department procedural sedation and analgesia? Pro and con. *Ann Emerg Med.* 2010;55:265-267.
108. Krauss B, Hess DR. Capnography for procedural sedation and analgesia in the emergency department. *Ann Emerg Med.* 2007;50:172-181.
109. Bernet-Buettiker V, Ugarte MJ, Frey B, et al. Evaluation of a new combined transcutaneous measurement of PCO₂/pulse oximetry oxygen saturation ear sensor in newborn patients. *Pediatrics.* 2005;115:e64-e68.
110. Senn O, Clarenbach CF, Kaplan V, et al. Monitoring carbon dioxide tension and arterial oxygen saturation by a single earlobe sensor in patients with critical illness or sleep apnea. *Chest.* 2005;128:1291-1296.
111. Rodriguez P, Lellouche F, Aboab J, et al. Transcutaneous arterial carbon dioxide pressure monitoring in critically ill adult patients. *Intensive Care Med.* 2006;32:309-312.
112. Lagerkvist AL, Sten G, Redfors S, et al. Repeated blood gas monitoring in healthy children and adolescents by the transcutaneous route. *Pediatr Pulmonol.* 2003;35:274-279.
113. Kocher S, Rohling R, Tschupp A. Performance of a digital PCO₂/SpO₂ ear sensor. *J Clin Monit Comput.* 2004;18:75-79.
114. Lucangelo U, Bernabe F, Blanch L. Respiratory mechanics derived from signals in the ventilator circuit. *Respir Care.* 2005;50:55-65.
115. Fernandez-Perez ER, Hubmayr RD. Interpretation of airway pressure waveforms. *Intensive Care Med.* 2006;32:658-659.
116. Hess DR. Monitoring during mechanical ventilation. In Mosenifar Z, Soo Hoo GW, eds. *Practical Pulmonary and Critical Care Medicine. Respiratory Failure. Lung Biology in Health and Disease.* Vol 213. New York, NY: Taylor & Francis; 2006.
117. Nilsestuen JO, Hargett KD. Using ventilator graphics to identify patient-ventilator asynchrony. *Respir Care.* 2005;50:202-234.
118. Georgopoulos D, Prinianakis G, Kondili E. Bedside waveforms interpretation as a tool to identify patient-ventilator asynchronies. *Intensive Care Med.* 2006; 32:34-47.
119. Anonymous. Ventilation with lower tidal volumes as compared with traditional tidal volumes for acute lung injury and the acute respiratory distress syndrome. *N Engl J Med.* 2000;342:1301-1308.
120. Terragni PP, Rosboch G, Tealdi A, et al. Tidal hyperinflation during low tidal volume ventilation in acute respiratory distress syndrome. *Am J Respir Crit Care Med.* 2007;175:160-166.
121. Hager DN, Krishnan JA, Hayden DL, et al. Tidal volume reduction in patients with acute lung injury when plateau pressures are not high. *Am J Respir Crit Care Med.* 2005;172:1241-1245.
122. Dhand R. Ventilator graphics and respiratory mechanics in the patient with obstructive lung disease. *Respir Care.* 2005;50:246-261.
123. Ranieri VM, Grasso S, Fiore T, et al. Auto-positive end-expiratory pressure and dynamic hyperinflation. *Clin Chest Med.* 1996;17:379-394.
124. Lessard MR, Lofaso F, Brochard L. Expiratory muscle activity increases intrinsic positive end-expiratory pressure independently of dynamic hyperinflation in mechanically ventilated patients. *Am J Respir Crit Care Med.* 1995;15:562-569.
125. Ninane V, Yerault J, de Troyer A. Intrinsic PEEP in patients with chronic obstructive pulmonary disease. Role of expiratory muscles. *Am Rev Respir Dis.* 1993;148:1037-1042.
126. Leatherman JW, Ravenscraft SA. Low measured auto-positive end-expiratory pressure during mechanical ventilation of patients with severe asthma: hidden auto-positive end-expiratory pressure. *Crit Care Med.* 1996;24:541-546.
127. Benditt JO. Esophageal and gastric pressure measurements. *Respir Care.* 2005;50:68-77.
128. Hess DR, Bigatello LM. The chest wall in acute lung injury/acute respiratory distress syndrome. *Curr Opin Crit Care.* 2008;14:94-102.
129. Chieveley-Williams S, Dinner L, et al. Central venous and bladder pressure reflect transdiaphragmatic pressure during pressure support ventilation. *Chest.* 2002;121:533-538.
130. Gattinoni L, Pelosi P, Suter PM, et al. Acute respiratory distress syndrome caused by pulmonary and extrapulmonary disease. Different syndromes? *Am J Respir Crit Care Med.* 1998;158:3-11.
131. Talmor D, Sarge T, Malhotra A, et al. Mechanical ventilation guided by esophageal pressure in acute lung injury. *N Engl J Med.* 2008;359:2095-2104.
132. Talmor DS, Fessler HE. Are esophageal pressure measurements important in clinical decision-making in mechanically ventilated patients? *Respir Care.* 2010;55:162-172; discussion 172-174.
133. Loring SH, O'Donnell CR, Behazin N, et al. Esophageal pressures in acute lung injury: do they represent artifact or useful information about transpulmonary pressure, chest wall mechanics, and lung stress. *J Appl Physiol.* 2010;108:515-522.
134. Lecamwasam HS, Hess D, Brown R, et al. Diaphragmatic paralysis after endovascular stent grafting of a thoracoabdominal aortic aneurysm. *Anesthesiology.* 2005;102:690-692.
135. Kress JP, O'Connor MF, Schmidt GA. Clinical examination reliably detects intrinsic positive end-expiratory pressure in critically ill, mechanically ventilated patients. *Am J Respir Crit Care Med.* 1999;159:290-294.
136. Harris RS. Pressure-volume curves of the respiratory system. *Respir Care.* 2005;50:78-99.
137. Harris RS, Hess DR, Venegas JG. An objective analysis of the pressure-volume curve in the acute respiratory distress syndrome. *Am J Respir Crit Care Med.* 2000; 161:4-32-439.
138. Ranieri VM, Brienza N, Santostasi S, et al. Impairments of lung and chest wall mechanics in patients with acute respiratory distress syndrome. *Am J Respir Crit Care Med.* 1997;156:1082-1091.

139. Mergoni M, Martelli A, Volpi A, et al. Impact of positive end-expiratory pressure on chest wall and lung pressure-volume curve in acute respiratory failure. *Am J Respir Crit Care Med.* 1997;156:846-854.
140. Owens RL, Hess DR, Malhotra A, Venegas JG, Harris RS. Effect of the chest wall on pressure-volume curve analysis of acute respiratory distress syndrome lungs. *Crit Care Med.* 2008;36:2980-2985.
141. Hickling KG. The pressure-volume curve is greatly modified by recruitment. *Am J Respir Crit Care Med.* 1998;158:194-202.
142. Hickling KG. Best compliance during a decremental, but not incremental, positive end-expiratory pressure trial is related to open-lung positive end-expiratory pressure: a mathematical model of acute respiratory distress syndrome lungs. *Am J Respir Crit Care Med.* 2001;163:69-78.
143. Grasso S, Stripoli T, De Michele M, et al. ARDSnet ventilatory protocol and alveolar hyperinflation: role of positive end-expiratory pressure. *Am J Respir Crit Care Med.* 2007;176:761-7677.
144. Bentt LR, Santora TA, Laverle BJ, et al. Accuracy and utility of pulse oximetry in the surgical intensive care unit. *Curr Surg.* 1990;47:267-268.
145. Kestin IG, Miller BR, Lockhart CH. Auditory alarms during anesthesia monitoring. *Anesthesiology.* 1988;69:106-109.
146. Kahn DM, Cook TE, Carlisle CC, et al. Identification and modification of environmental noise in an ICU setting. *Chest.* 1998;114:535-540.