

The Patient with Morbid Obesity

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REFERENCES

- World Health Organization: *Fact Sheet No. 311*. Geneva, Switzerland: World Health Organization; May 2012.
- Barlow SE, Expert Committee: Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. *Pediatrics* 120 (Suppl): S164, 2007. [PMID: 18055651]
- Park HS, Song YM, Cho SI: Obesity has a greater impact on cardiovascular mortality in younger men than in older men among non-smoking Koreans. *Int J Epidemiol* 35: 181, 2006. [PMID: 16269549]
- McGill HC Jr, McMahan CA, Herderick EE, et al: Obesity accelerates the progression of coronary atherosclerosis in young men. *Circulation* 105: 2712, 2002. [PMID: 12057983]
- Engoren C, Patel A, Fang J, et al: Symptoms of men and women presenting with acute coronary syndromes. *Am J Cardiol* 98: 1177, 2006. [PMID: 17056322]
- Franklin K, Goldberg RJ, Spencer F, et al: Implications of diabetes in patients with acute coronary syndromes. The global registry of acute coronary events. *Arch Intern Med* 164: 1457, 2004. [PMID: 15249356]
- Kenchaiah S, Evans JC, Levy D, et al: Obesity and the risk of heart failure. *N Engl J Med* 347: 305, 2002. [PMID: 12151467]
- Mehra MR, Uber PA, Park MH, et al: Obesity and suppressed B-type natriuretic peptide levels in heart failure. *J Am Coll Cardiol* 43: 1590, 2004. [PMID: 15120816]
- Taub PR, Saldate P, Maisel A: Biomarkers of heart failure. *Congest Heart Fail* 16(1 Suppl): 519, 2010. [PMID: 20653707]
- Alpert MA: Obesity cardiomyopathy: pathophysiology and evolution of the clinical syndrome. *Am J Med Sci* 321: 225, 2001. [PMID: 11307864]
- Stein PD, Beemath A, Olsen RE: Obesity as a risk factor in venous thromboembolism. *Am J Med* 118: 978, 2005. [PMID: 16164883]
- Eichinger S, Hron G, Bialonczyk C, et al: Overweight, obesity, and the risk of recurrent venous thromboembolism. *Arch Intern Med* 168: 1678, 2008. [PMID: 18695082]
- Hossain P, Kaur B, El Nahas M: Obesity and diabetes in the developing world: a growing challenge. *N Engl J Med* 356: 209, 2007. [PMID: 17229946]
- Bonadonna RC, Groop L, Kraemer N, et al: Obesity and insulin resistance in humans: a dose-response study. *Metabolism* 39: 452, 1990. [PMID: 2186255]
- Lazarus R, Sparrow D, Weiss ST: Effects of obesity and fat distribution on ventilatory function: the normative aging study. *Chest* 111: 891, 1997. [PMID: 9106566]
- Chinn DJ, Cotes JE, Reed JW: Longitudinal effects of change in body mass on measurements of ventilatory capacity. *Thorax* 51: 699, 1996. [PMID: 8882076]
- Inselsma LS, Milanese A, Deurloo A: Effect of obesity on pulmonary function in children. *Pediatr Pulmonol* 16: 130, 1993. [PMID: 8367219]
- Rubinstein I, Zamel N, DuBarry L, et al: Airflow limitation in morbidly obese, nonsmoking men. *Ann Intern Med* 112: 828, 1990. [PMID: 2378649]
- Resta O, Barbaro MP, Legari G, et al: Sleep-related breathing disorders, loud snoring and excessive daytime sleepiness in obese subjects. *Int J Obes Relat Metab Disord* 25: 669, 2001. [PMID: 11360149]
- Sériès F: Upper airway muscles awake and asleep. *Sleep Med Rev* 6: 229, 2002. [PMID: 12531123]
- Bickelmann AG, Burwell CS, Robin ED, et al: Extreme obesity associated with alveolar hypoventilation; a Pickwickian syndrome. *Am J Med* 21: 811, 1956. [PMID: 13362309]
- Kessler R, Chaouat A, Schinkewitch P, et al: The obesity-hypoventilation syndrome revisited: a prospective study of 34 consecutive cases. *Chest* 120: 369, 2001. [PMID: 11502631]
- Olson AL, Zwillich C: The obesity hypoventilation syndrome. *Am J Med* 118: 948, 2005. [PMID: 16164877]
- Daniels S: The consequences of childhood overweight and obesity. *Future Child* 16: 47, 2006. [PMID: 16532658]
- Nieman CT, Manacci CF, Super DM, Mancuso C, Fallon WF Jr: Use of the Broselow tape may result in the underresuscitation of children. *Acad Emerg Med* 13: 1011, 2006. [PMID: 17015417]
- Cattermole GN, Leung PY, Mak PS, Graham CA, Rainer TH: Mid-arm circumference can be used to estimate children's weights. *Resuscitation* 81: 1105, 2010. [PMID: 20619953]
- Krieser D, Nguyen K, Kerr D, Jolley D, Clooney M, Kelly A-M: Parental weight estimation of their child's weight is more accurate than other weight estimation methods for determining children's weight in an emergency department? *Emerg Med J* 24: 756, 2007. [PMID: 17954827]
- Crandall CS, Gardner S, Braude DA: Estimation of total body weight in obese patients. *Air Med J* 28: 139, 2009. [PMID: 19414107]
- Pickering TG, Hall JE, Appel LJ, et al: Recommendations for blood pressure measurement in humans and experimental animals. Part 1: blood pressure measurement in humans—a statement for professionals from the subcommittee of Professional and Public Education of the American Heart Association Council on High Blood Pressure Research. *Circulation* 111: 697, 2005. [PMID: 15699287]
- Perloff D, Grim C, Flack J, et al: Human blood pressure determination by sphygmomanometry. *Circulation* 88: 2460, 1993. [PMID: 8222141]
- Hanley MJ, Abernethy DR, Greenblatt DJ: Effect of obesity on the pharmacokinetics of drugs in humans. *Clin Pharmacokinet* 49: 71, 2010. [PMID: 20067334]
- Erstad BL: Improving medication dosing in the obese patient. *Clin Drug Investig* 37: 1, 2017. [PMID: 27599484]
- Erstad BL: Dosing of medications in morbidly obese patients in the intensive care unit setting. *Intensive Care Med* 30: 18, 2004. [PMID: 14625670]
- Pai MP, Paloucek FP: The origin of the "ideal" weight equations. *Ann Pharmacother* 34: 1066, 2000. [PMID: 10981254]
- Bajwa SJS, Sehgal V, Bajwa SK: Clinical and critical care concerns in severely ill obese patient. *Indian J Endocrinol Metab* 16: 740, 2012. [PMID: 23087857]
- Casiti A, Putzu M: Anesthesia in the obese patient: pharmacokinetic considerations. *J Clin Anesth* 17: 134, 2005. [PMID: 15809132]
- Marik PE, Baram M, Vahid B: Does central venous pressure predict fluid responsiveness? A systematic review of the literature and the tale of seven mares. *Chest* 134: 172, 2008. [PMID: 18628220]
- Merrill J, Jonghe B, Golliot F, et al: Complications of femoral and subclavian venous catheterization in critically ill patients: a randomized controlled trial. *JAMA* 286: 700, 2001. [PMID: 11495620]
- Fujiki M, Gura CG, Lemmens HJ, Brock-Utne JG: Is it more difficult to cannulate the right internal jugular vein in morbidly obese patients than in nonobese patients? *Obes Surg* 18: 1157, 2008. [PMID: 18574645]
- Mills CN, Liebmann O, Stone MB, Frazee BW: Ultrasonographically guided insertion of a 15-cm catheter into the deep brachial or basilic vein in patients with difficult intravenous access. *Ann Emerg Med* 50: 68, 2007. [PMID: 17433498]
- Sugarman N, Silman E: Try a "PIPP" catheter for deep peripheral IVs in obese patients. *EPM/Academic Life in Emergency Medicine*, October 2013, p. 18.
- Miller JC: Imaging and obese patients. *Radiology Rounds, Massachusetts General Hospital* 3: 7, 2007.
- Grant P, Newcombe M: Emergency management of the morbidly obese. *Emerg Med Australas* 16: 309, 2004. [PMID: 15283718]
- Ingrande J, Brodsky JB, Lemmens HJM: Regional anesthesia and obesity. *Cur Opin Anesth* 22: 683, 2009. [PMID: 19550304]
- Yakushiji H, Goto T, Shirasaka W, et al: Associations of obesity with tracheal intubation success on first attempt and adverse events in the emergency department: an analysis of the multicenter prospective observational study in Japan. *PLoS One* 13: e0195938, 2018. [PMID: 29672600]
- Cartagena R: Preoperative evaluation of patients with obesity and obstructive sleep apnea. *Anesthesiol Clin North Am* 23: 463, 2005. [PMID: 16005824]
- Dixon BJ, Dixon JB, Carden JR, et al: Preoxygenation is more effective in the 25 degrees head-up position than in the supine position in severely obese patients: a randomized controlled study. *Anesthesiology* 102: 1110, 2005. [PMID: 15915022]
- Gaszynski T: Anesthetic complications of gross obesity. *Curr Opin Anaesthesiol* 17: 271, 2004. [PMID: 17021563]
- Collins JS, Lemmens HJ, Brodsky JB: Obesity and difficult intubation: where is the evidence? *Anesthesiology* 104: 617, 2006. [PMID: 16508416]
- Collins JS, Lemmens HJ, Brodsky JB, et al: Laryngoscopy and morbid obesity: a comparison of the "sniff" and "ramped" positions. *Obes Surg* 14: 1171, 2004. [PMID: 15527629]
- Adams JP, Murphy PG: Obesity in anaesthesia and intensive care. *Br J Anaesth* 85: 91, 2000. [PMID: 10927998]
- Apfelbaum JL, Hagberg CA, Caplan RA, et al: Practice guidelines for management of the difficult airway: an updated report by the American Society of Anesthesiologists Task Force on Management of the Difficult Airway. *Anesthesiology* 118: 251, 2013. [PMID: 23364566]
- Langeron O, Masso E, Huraux C, et al: Prediction of difficult mask ventilation. *Anesthesiology* 92: 1229, 2000. [PMID: 10781266]
- Jabre P, Combes X, Leroux B, et al: Use of gum elastic bougie for prehospital difficult intubation. *Am J Emerg Med* 23: 552, 2005. [PMID: 16032630]
- Leviton RM, Chudnofsky C, Sapre N: Emergency airway management in a morbidly obese, noncooperative, rapidly deteriorating patient. *Am J Emerg Med* 24: 894, 2006. [PMID: 17098124]
- Brunette DD: Resuscitation of the morbidly obese patient. *Am J Emerg Med* 22: 40, 2004. [PMID: 14724877]
- Patel RG: Percutaneous transtracheal jet ventilation: a safe, quick, and temporary way to provide oxygenation and ventilation when conventional methods are unsuccessful. *Chest* 116: 1689, 1999. [PMID: 10593796]
- Rehm CG, Wanek SM, Gagnon EB, et al: Cricothyroidotomy for elective airway management in critically ill trauma patients with technically challenging neck anatomy. *Crit Care* 6: 531, 2002. [PMID: 12493076]
- Walls RM, Murphy MF: *Manual of Emergency Airway Management*. 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2008.
- Sagarin MJ, Barton ED, Chng YM, et al: Airway management by US and Canadian emergency medicine residents: a multicenter analysis of more than 6,000 endotracheal intubation attempts. *Ann Emerg Med* 46: 328, 2005. [PMID: 16187466]
- Brower RG, Ware LB, Berthiaume Y, Matthay MA: Treatment of ARDS. *Chest* 120: 1347, 2001. [PMID: 11591581]
- Ladosky W, Botelho MA, Albuquerque JP Jr: Chest mechanics in morbidly obese non-hypoventilated patients. *Respir Med* 95: 281, 2001. [PMID: 11316110]
- Boulangier BR, Miltzman D, Mitchell K, et al: Body habitus as a predictor of injury patterns after blunt trauma. *J Trauma* 33: 228, 1992. [PMID: 1507286]
- Joseph B, Hadeed S, Haider AA, et al: Obesity and trauma mortality: sizing up the risks in motor vehicle crashes. *Obes Res Clin Pract* 11: 72, 2017. [PMID: 26996285]
- Arbabi S, Wahl WL, Hemmila MR, et al: The cushion effect. *J Trauma* 54: 1090, 2003. [PMID: 12813327]