Obstructive sleep apnea (OSA) is recognized as an increasingly prevalent public health concern. It is estimated that up to 9% of women and up to 24% of men in the United States have some degree of OSA. Amongst older adults (age > 60) the prevalence is even higher, ranging from 37.5% to 62%. (1) Hoch et al. studied healthy 60, 70, and 80 year olds and showed a stepwise increase in the prevalence of OSA: 2.9% of sixty year olds, 33.3% of seventy year olds and 39.5% of eighty year olds had an apnea-hypopnea index (AHI) of >5, indicating some degree of OSA.(2) Amongst the general population and the geriatric population, obesity is well recognized as a risk factor for OSA and it is estimated that sixty to ninety percent of patients with OSA are obese. Recent data from the Centers for Disease Control indicates that in 2007 the epidemic of obesity in the United States continues to swell. Only one state had a prevalence of obesity (BMI > 30) less than 20%. (3) Therefore, as the epidemic of obesity grows and the population ages, the incidence of OSA is certain to continue to increase. In addition, there is also increasing evidence and increasing recognition of the association between OSA and cardiovascular disease.(4) OSA with its implications for airway management and the potential for cardiovascular compromise can affect patients throughout the perioperative period. A recent study by Chung et al. concluded that 66% of patients with unexpected difficult intubations who consented to undergo post-operative sleep study were diagnosed with OSA.(5) Closed-Claim studies regarding airway compromise reveal a significant incidence of adverse airway events occur in patients with obesity and OSA.(6) Even in the absence of co-morbidities such as obesity, older adults may be subject to anatomic and physiologic changes that predispose them to OSA. Changes in bony structure, changes in the distribution of fat deposits in the pharyngeal wall and decreased activity of the pharyngeal dilator muscles all may contribute to the higher incidence of OSA in older adults.(7)

An expert consensus document published by the American Heart Association/American College of Cardiology recognizes the important association of OSA with cardiovascular disease including hypertension, heart failure, coronary disease, stroke and arrhythmias. Sorajja et al looked at 200 patients within three years of polysomnogram (PSG) and found that patients with OSA had a higher mean coronary artery calcification score on CT scan compared to patients without OSA.(8) Concluding that patients with OSA have a higher incidence of subclinical coronary artery disease. Kuniyoshi et al. looked at 92 patients admitted with MI. They documented time of MI and these patients underwent subsequent PSG. They concluded that in patients with OSA there was a higher incidence of MI between 12am and 6am as opposed to the normal diurnal pattern. (9)
Wisconsin-Sleep Cohort Study looked at 1189 Wisconsin state workers and found a linear relationship between blood pressure and the severity of OSA at four year follow up. (10) Yaggi et al looked at 1022 patients referred to their sleep lab. 68% of these referrals had OSA. At 3.5 year follow up they found a significantly increased risk of stroke independent of other risk factors. (11) As part of the Sleep Health Study, Mehra et al looked at 228 patients with OSA vs. 338 without. They found a significantly increased incidence of arrhythmia in patients with OSA vs. without. (12) In addition to risks at induction and perioperative risks of cardiovascular events, numerous case reports in the literature link postoperative narcotic induced respiratory depression and cardiopulmonary arrest with pre-existing OSA. (13)

Recognizing the risks of OSA in the surgical patient, the American Society of Anesthesiologists published practice guidelines for the perioperative management of patients with OSA. (14) The guidelines provide a framework for managing patients with OSA throughout the perioperative period. Understanding that the majority of patients with OSA have no formal diagnosis, the foremost obligation is to identify patients with suspected OSA. Chung et al. screened 2,467 preoperative patients without previously diagnosed OSA using three screening tools, the Berlin Questionnaire, the STOP questionnaire (Snore, Tiredness, Observed apnea, high blood Pressure) and the American Society of Anesthesiologists checklist. They found there was no significant difference in the three screening tools and that all three demonstrated a “moderately high level of sensitivity for OSA screening. (15) Therefore, in the absence of a formal polysomnogram (PSG), a presumptive diagnosis can be made using a variety of simple screening tools. Intra-operatively, peripheral nerve block or regional anesthesia is preferred over general anesthesia in patients with OSA, thus avoiding the potential for difficult airway and minimizing narcotics with the inherent risk of postoperative respiratory depression. If general anesthesia is unavoidable, preparations should be in place for management of the difficult airway. Patients undergoing monitored anesthesia care (MAC) should not only be monitored with pulse oximetry, but also should have monitoring of ventilation with modalities such as capnography as the use of sedatives and opioids may predispose patients with OSA to airway obstruction. Patients with OSA should be extubated fully awake, in the semi-recumbent position with neuro-muscular blockade fully reversed. Postoperatively, non-opioid analgesics techniques should be employed such as administration of NSAIDs, infiltration of local anesthetics, and placement of peripheral nerve blocks. Due to the risk of narcotic and sedative induced postoperative respiratory depression, candidacy for day surgery discharge home should be evaluated on a case by case basis taking into account the severity of OSA, co-morbidities, the invasiveness of the surgical procedure and the need for additional narcotic analgesia. Patients deemed poor candidates for discharge home should be monitored in the hospital with pulse-oximetry until they are no longer at risk. Because anesthesiologists serve as the final gatekeeper prior to patients undergoing surgical procedures, it is imperative to recognize the signs and symptoms of OSA, to acknowledge the association with cardiovascular disease, to probe patient’s health histories and to educate ourselves on how best to manage these patients in the perioperative period.