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Message from the President

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New Affiliation with IARS and New Section on "Respiration and Sleep" in Anesthesia & Analgesia Journal

Summer weather has been very nice and I do hope that everyone had time to enjoy the outdoors. The Society of Anesthesia and Sleep Medicine (SASM) has two great news items to announce: 1) a new affiliation with the International Anesthesia Research Society (IARS) and 2) the creation of an obstructive sleep apnea registry.

In early July this year, the IARS and the SASM signed an affiliation agreement between the two organizations. Both organizations have a mutual goal to increase the amount of published literature about respiration and sleep medicine. As part of the affiliation agreement, *Anesthesia & Analgesia (A&A)* will be designated as the official journal of the SASM. David Hillman, MD, has been appointed as the Respiration and Sleep Editor for the journal.

Dr. David Hillman is the Immediate Past President of the SASM. He is head of the Department of Pulmonary Physiology and Sleep Medicine at the Sir Charles Gairdner Hospital in Perth, Western Australia and Director of the West Australian Sleep Disorders Research Institute. He is a Clinical Professor at the University of Western Australia, Immediate Past President of the Australasian Sleep Association and founding chair of Australia's Sleep Health Foundation.

Dr. Hillman's experience as an anesthesiologist, sleep physician and respiratory physiologist provides a suitably broad based background for the position of "respiration and sleep" section. Added to this, he is a committed and active researcher with an extensive track record of publications in respiration and sleep and is an experienced reviewer. He has been on the editorial board of *Sleep* for over 11 years, the last two as a Deputy Editor. He has regularly reviewed for highly ranked international anesthesiology, sleep, respiratory and physiological journals.

Airway and breathing behaviour during sleep plays an important role as a

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Editor's File

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Shifting Sands – New Discoveries in Risk Modification in Perioperative Sleep Medicine

Two new studies have ignited debate on perioperative sleep disordered breathing, one on a classic problem of preoperative diagnosis of obstructive sleep apnea (OSA) and the other on a unique mechanism of apnea induction. Both studies have great implications for anesthesia and sleep medicine clinicians.

Mutter et al[1] reported a reduction in postoperative cardiovascular complications with preoperative versus postoperative diagnosis of OSA (odds ratio 0.34 [0.15 to 0.77], p = 0.009). This suggests a beneficial role for preoperative testing of OSA with a reasonable signal for risk modification with preoperative prescription of positive airway pressure treatment. The study, published in Anesthesiology, has a wealth of interesting data, including the relationship between OSA severity and postoperative cardio-respiratory complications. Severe OSA, but not moderate or mild OSA, was associated with a 2-fold increase in both respiratory and cardiovascular complications in a risk adjusted model, when compared with patients without OSA. Mutter's study further justifies the use of fast track preoperative testing and treatment for OSA. Crucially, the study does not provide insights into length of preoperative treatment and effects on study outcome. Despite its other notable weaknesses, the study reflects the future state of research in sleep medicine where large databases may be combined to provide risk adjusted data on specific disease characteristics and treatment effects using advanced statistical modeling. All the statistical mumbo-jumbo aside, the need for these studies is to ensure that we build a greater understanding of mechanisms underlying adverse outcomes, so that we can devise better treatments to prevent or reduce their effect. The mechanisms for OSA itself are not fully understood, with several key comorbid conditions including metabolic syndrome competing with physiologically reproducible mechanisms such as loop gain. Modifiability of risk in the case of metabolic syndrome is through weight loss[2] and this is associated with a reduction in OSA severity, especially following bariatric surgery. Exciting research into loop gain suggests that selective increases in arousal threshold could benefit patients in whom high loop gain state at baseline induces airway instability[3]. Similar mechanistic work is strikingly absent in perioperative sleep medicine.

Yadollahi et al[4] in another recent study showed that intravenous fluid boluses could induce increasing severity of OSA in patients. Using an innovative study design, where each patient was their own control on different nights, investigators showed a significant relationship between fluid loading and sleep disordered breathing especially in elderly patients. This study has several extremely important implications for clinicians. First, the study exposures were strikingly similar to typical perioperative exposures: sleep deprived subjects, older age group, compression stockings, supine position and intravenous fluids. Chung et al[5] recently showed that patients without OSA developed SDB postoperatively, a finding that could partially be explained by these factors. Two separate findings in Yadollahi's study were equally interesting. First, there was a significant increase in neck circumference overnight in patients exposed to the intravenous fluids. This has potentially serious implications for patients with pre-existing airway collapsibility and may confer greater risk for postoperative airway occlusion and failure. Unfortunately, the study did not directly evaluate upper airway collapsibility. Secondly, there were no static changes in upper airway anatomy using ultrasound measurement. This may indicate preservation of dilatory airway function in wakefulness but doesn't rule out the possibility of increased collapsibility in sleep. Perhaps most interestingly, previous work on perioperative fluid restriction for preservation of gut function has also shown significant reduction in cardiopulmonary outcomes,[6,7]

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Editor's File continued from previous page

although this is not a generalizable effect.[8]

Clearly some patients with OSA are different from others and we need to improve our precision of prediction of postoperative complications through innovative clinical research. ❖

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predictor of behaviour during anesthesia and a revealer of modifiable risk factors: OSA and difficult airway; sleep hypoventilation and perioperative respiratory insufficiency, opioids and periodic breathing.

The neurophysiological common ground (unconsciousness, ventilatory depression, reduced muscle activation) is profound. The problems of advanced lung disease, morbid obesity and neuromuscular disorders are shared between the states. By classifying submitted articles under "Respiration and Sleep," it would help to focus on this important area, improving education and encouraging research.

As a small society, the SASM can greatly increase its presence through our affiliation with the IARS. The goals of SASM align with the mission and vision of IARS in terms of research and education. I am confident that this affiliation will bring many benefits to the SASM, as well as to clinicians and researchers worldwide. With this affiliation, the principal goal for Dr. Hillman will be to increase the number of sleep-related articles published in the *A&A*, and to increase exposure of authors and literature in the field of sleep medicine. The SASM is calling on its members to submit their scientific work on "Respiration and Sleep" to *A&A*, as well as reviews, commentaries and CME materials.

The Obstructive Sleep Apnea Death and Near Miss Registry

The SASM has partnered with the Anesthesia Quality Institute to launch a new Registry: The Obstructive Sleep Apnea Death and Near Miss Registry. The goal of this new registry is to identify perioperative recurring patterns or themes underlying death or adverse events suspected to be related to obstructive sleep apnea with the ultimate aim of risk prevention and improved anesthesia patient safety. The Registry seeks to obtain a large number of case reports to achieve these goals. Any medical provider can submit a case, however patients are not allowed to submit cases.

I would greatly encourage the SASM members to submit case reports to the Obstructive Sleep Apnea Death and Near Miss Registry. Case report instructions and forms are available on the OSA Death and Near Miss Registry website:

http://depts.washington.edu/asacp/projects/obstructive-sleep-apnea-osa-death-near-miss-registry ❖

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Obstructive Sleep Apnea Death and Near Miss Registry: Society of Anesthesia and Sleep Medicine (SASM) and Anesthesia Quality Institute (AQI) Working to Eliminate Preventable Deaths

A number of unexpected deaths in patients with obstructive sleep apnea (OSA) were reported in the late twentieth and the early twenty-first century. In 1997, Ostermeier et al shared 3 cases of postoperative respiratory arrests and deaths in patients with obstructive sleep apnea receiving opioids following surgery.[1] In the 2002 Anesthesia Patient Safety Foundation newsletter, Lofsky summarized 8 cases of unexplained postoperative cardiopulmonary arrest in patients with OSA receiving narcotics.[2] Subsequently, in 2005, Bolden et al published a case series of cardiopulmonary arrests in OSA patients receiving narcotics following surgery.[3] While there have been numerous recent studies documenting adverse outcomes in OSA patients following surgery, there have been very few reports of postoperative deaths in this cohort of patients in recent years.

Since unexpected deaths occurring in OSA patients following surgery were previously documented and dominated the headlines in the anesthesia community, it is possible that these events (unexplained/unexpected deaths) are likely no longer viewed as "novel" or "interesting" by editorial boards. Indeed, in response to previous reports of catastrophic outcomes in patients with OSA receiving postoperative narcotics, the American Academy of Sleep Medicine and American Society of Anesthesiologists published guidelines advocating close monitoring of patients with OSA following surgery.[4,5] Given the paucity of reported, unexplained postoperative deaths appearing in the medical literature over the last decade for OSA patients, the average practitioner might easily surmise that unexpected death in the OSA patient population is no longer a problem. This assumption however, would clearly be in error.

The Society of Anesthesia and Sleep Medicine (SASM) was formed by a group of anesthesiologists, sleep physicians, surgeons and basic scientists with an interest in sleep and anesthesia in 2010. The mission of SASM is to promote discussion, education and research related to issues in sleep and anesthesia.[6]

At an informal gathering of conference attendees following the 2011 SASM annual meeting, discussions abounded detailing ongoing catastrophic events occurring in OSA patients following surgery. Members of SASM approached the SASM leadership and expressed concern that there was little awareness in the general medical community that these unexpected catastrophic events, where patients were found "Dead in Bed" were continuing to occur. As a result, the SASM Board established the "Dead in Bed" Registry Committee and appointed Dr. Norman Bolden as its chair.

Discussions and deliberations by the SASM "Dead in Bed" Committee noted that there were a number of cases where patients did not expire, but were left with a devastating neurologic injury. Additionally, there were cases where patients were found in cardiopulmonary arrest, but were successfully resuscitated. There was much to learn from the postoperative "near misses" occurring in diagnosed and suspected OSA patients as well as the unexpected deaths. Thus, the name of the Registry was subsequently changed to the OSA Death and Near Miss Registry.[7]

SASM partnered with the Anesthesia Quality Institute (AQI) and welcomed the expertise of those responsible for the Anesthesia Closed Claims Project and its Registries in advancing the OSA Death and Near Miss Registry. The Registry began accepting cases in May 2014. The

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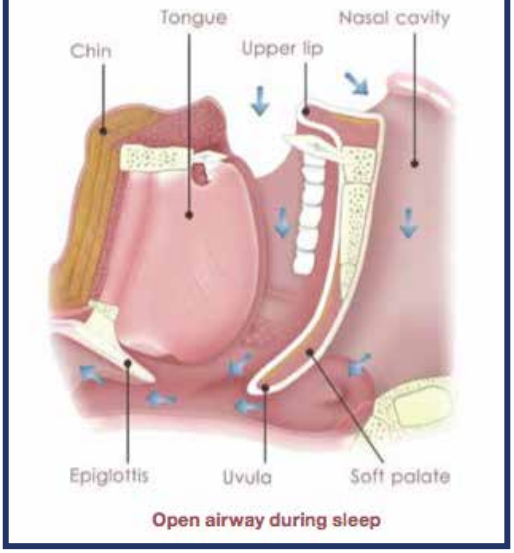
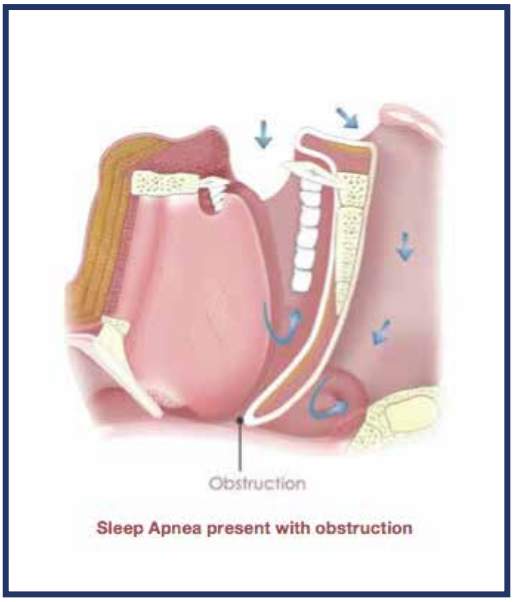
Obstructive Sleep Apnea Death and Near Miss Registry hopes to collect a large number of detailed case reports for analysis. The goals are to identify common themes or factors associated with OSA-related adverse postoperative events including:

- Identify the level of monitoring used when deaths or near misses occurred.
- Provide a better understanding into why the adverse events occurred, and what (if anything) can be done to limit these adverse events
- Provide insight regarding how to best construct prospective studies to answer many of the questions surrounding the best practices for care of patients with OSA during the perioperative period.

Inclusion criteria for the registry include: Age 18 or greater, diagnosed or suspected OSA, and one of the following events/outcomes must have occurred and felt to be an OSA-related adverse event: death, brain injury, urgent/emergent transfer to ICU for respiratory distress, respiratory arrest, Code Blue or ACLS protocol (within 30 days of surgery). Retrospective cases may be submitted as long as they occurred in 1993 or later.

To submit anonymous cases or obtain more information about the OSA Death and Near Miss Registry, please go to www.asaclosedclaims.org and click on the tab for projects. Specific questions about the registry can be forwarded to Karen Posner, PhD at Department of Anesthesiology & Pain Medicine University of Washington Box 356540 Seattle, WA 98195-6540 email:posner@uw.edu ❖





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Eliminating Postoperative Residual Paralysis
Speaking Words of Wisdom: Do Not Just 'Let it Be!'

Neuromuscular blocking agents (NMBAs) facilitate endotracheal intubation and improve intubation-associated morbidity.[1,2] NMBAs can also improve surgical conditions, which has been demonstrated in patients undergoing laparoscopic surgery.[3]

However, incidence and consequences of postoperative residual neuromuscular blockade (NMB) - defined as a train-of-four (TOF) ratio lower than 0.9 – are underestimated. Residual NMB is observed in 20-45% of patients who receive intermediate acting NMBAs.[4] Upper airway dilator muscle function are vulnerable to minimal decreases in force generating capacity. Proper function of the airway dilators requires continuous (inspiratory and expiratory tetanic) activation even during periods of quiet breathing[5] to maintain airway patency. In contrast, non-respiratory skeletal muscles are electrically silent at rest. Minimal levels of residual paralysis can easily go unidentified when clinicians assess subjectively extremity muscle strength as an indicator of adequate recovery.

Physiological studies show that the high perioperative vulnerability of pharyngeal muscles translates to increased aspiration risk.[6,7] A quantitative effectiveness trial indicated that the use of NMBAs is associated with an increased risk of postoperative respiratory failure requiring unplanned admission to the intensive care unit.[8] Of note, these NMBA-associated complications were not ameliorated, but rather augmented by the use of neostigmine in an attempt to reverse NMBA effects.[9] By contrast, efficacy studies show that postoperative residual NMB can be prevented by appropriate neuromuscular transmission monitoring with careful titration of NMBAs and reversal agents based on monitoring results.

How can we explain the opposed results in efficacy and effectiveness studies?

Efficacy studies evaluate how well a treatment works in clinical trials, whereas effectiveness studies analyze how well a treatment works in the practice of perioperative medicine. In a real world scenario, anesthesiologists want to meet the expectations of our surgical colleagues: to provide optimal surgical conditions and a rapid turn-over time between cases. Making strong efforts towards diagnosis and treatment of residual NMB is not always in line with this surgical efficiency-related goal.

In fact, more than 50% of anesthesia practitioners in the US and in Europe believe the incidence of residual NMB to be less than 1%,[10] which probably relates to the fact that qualitative neuromuscular transmission monitoring – the only way to exclude residual paralysis - is not usually applied in the OR.

Recent data suggest that many clinicians try to use high-dose neostigmine to reverse deep NMB – a strategy that translates to postoperative respiratory failure.[4] We have obviously unlearned a couple of lessions: Residual NMB cannot be diagnosed by visual or tactile fade if the TOF-ratio is around 0.4.[11,12] Deep block cannot be reversed with acetylcholinesterase inhibitors. Reversal of a NMB with neostigmine is efficacious only if partial recovery is established (TOF count $\geq$2). Of note, neostigmine given after complete recovery of neuromuscular transmission will result in a depolarizing NMB.[13]

Videira and co-workers analyzed the rules of thumb clinicians use to make a decision as to whether or not a NMB should be reversed.[14] Clinicians appear to judge themselves as better skilled at avoiding residual block than they do their colleagues, making them overconfident in their capacity to estimate the duration of action of intermediate

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acting NMBAs. Awareness of these systematic errors related to clinical intuition may facilitate the adoption of experts' recommendations into clinical practice. [14]

1.	**Realize that surgical relaxation does not always require a neuromuscular blocking agent (NMBA).**
2.	**Measure the response to TOF stimulation prior to re-administration of NMBA.**
3.	**If you decide to use deep neuromuscular block throughout the case, don't expect to be able to reverse it with neostigmine at the end of the case.**
4.	**Titrate neostigmine to the level of neuromuscular block.**
5.	**Absence of visible/palpable TOF-fade or tetanic fade does not exclude residual neuromuscular block.**
6.	**A "full reversal dose" of neostigmine given after recovery from NMBA effects can induce a depolarizing neuromuscular block.**
7.	**Quantitative neuromuscular transmission monitoring is required to exclude residual neuromuscular block.**

Figure: *Speaking 7 "words of wisdom" on how to eliminate postoperative residual paralysis. TOF: train-of-four; NMBA: neuromuscular blocking agents.*

With the development of selective target-binding agents such as sugammadex and calabadion, the goal of creating optimal surgical conditions with deep NMB under the expectation rapid and complete reversal at the end of the procedure may become more realistic. However, objective monitoring will still be required after FDA approval of sugammadex and calabadion – clinicians need to consider that one molecule of these compounds can only reverse one molecule of a NMBA. Future studies are needed to evaluate if the use of selective target-binding agents helps in reducing the incidence of NMBA-induced postoperative respiratory failure.

In the meantime, the authors believe we should try hard to better implement expert recommendations into clinical practice. Based on best evidence, we offer some "words of wisdom" to eliminate postoperative residual paralysis and its consequences on respiratory safety (figure). Do not just let it be! ❖

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A Randomized Trial of Adenotonsillectomy for Childhood Sleep Apnea

Marcus CL, Moore R, Rosen CL, Giordani B et al. N Engl J Med 2013; 368: 2366-76

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Background: The Childhood Adenotonsillectomy Trial (CHAT) was designed to evaluate the efficacy of adenotonsillectomy (A&T) versus watchful waiting (WW) for the management of children with obstructive sleep apnea syndrome (OSAS).[1] This study is important for several reasons. First, it is the only prospective randomized control trial to compare the therapeutic efficacy of A&T to WW in children with OSAS. Second, A&T is the most common pediatric surgery with more than 500,000 performed annually in the USA. OSAS has become the most common indication for A&T in children. Finally, recent pediatric publications have raised the spectre of health professionals underestimating the role of apnea causing post A&T death or anoxic injury. [2-5] OSAS-related sensitivity to the respiratory depressant effects of opioids has been implicated. Given the apparent risks, evidence is needed to validate whether A&T is indicated for the management of childhood OSAS.

Study design: Randomized controlled trial (ClinicalTrials.gov No, NCT00560859).

Setting: Primary care, otolaryngology and sleep clinics at seven US academic centers.

Participants: 464 children (5 to 9.9 years of age) with polysomnography (PSG) diagnosed OSAS were randomized.

Inclusion criteria: OSAS defined as an apnea-hypopnea index (AHI) ≥2 events/hour or an obstructive apnea index (OAI) ≥1 event/hour.

Exclusion criteria: Severe OSAS defined as OAI >20 or AHI >30 or SpO2 <90% for >2% sleep time; recurrent tonsillitis; BMI z-score >3 and medications for attention deficit-hyperactivity disorder.

Intervention: A&T versus WW with supportive care for 7 months.

Blinding: Single blinded for study investigators and personnel conducting psychometric evaluations. Study participants and families were not blinded.

Outcomes: The primary outcome was a change in attention and executive function score on the Developmental Neuropsychological Assessment (NEPSY) compared to baseline. Changes in behavior, quality of life, symptoms and PSG indices were considered secondary outcomes. Intention to treat analysis was performed.

Main Results: Follow-up visits were conducted in 400 participants (86%), 397 were evaluated for the primary outcome (NEPSY). The average baseline attention and executive score on the NEPSY was close to the population mean and scores did not change (mean ± SD) significantly between the A&T (7.1 ±13.9) and WW (5.1 ± 13.4) groups (p=0.16). However, surgery did result in statistically significant reductions in symptoms and reported improvements in behavior, quality of life, and PSG indices. Normalization of PSG findings was observed in 79% and 46% (p<0.001) of children in the A&T group and WW groups, respectively (number needed to treat 3; 95%CI 3-5). However, subgroup analyses revealed obesity, baseline AHI > median score (A&T 4.8 and WW 4.5) and black children were less likely to experience normalization of PSG findings. Age and obesity did not influence treatment responses for any outcomes, but A&T related improvements in behavior and symptoms were less with black children, while greater reduction in AHI was seen with more severe OSAS. The incidence of adverse events was similar between groups.

Conclusions: Early A&T compared to WW for 7 months did not significantly improve measures of attention

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or executive function in school-aged children with OSAS. However, A&T did reduce symptoms and improve PSG findings and measures of behavior and quality of life.

Sources of funding: Three National Institutes of Health grants.

Commentary: This trial was well designed, evident by accompanying publications of a full protocol[6] and supplementary appendix[7] addressing all 25 items of the CONSORT statement.[8] It is the largest trial to date. Participants were recruited from general pediatric, community and ENT clinics allowing the findings to be externally valid. Follow-up rates were quite high. Great efforts were made to standardize testing between each of the 7 sites. Sleep technicians underwent uniform training with all data scored centrally.[6] The exclusion criteria definition of severe OSA combining the OAI, AHI and desaturation profile was practical and likely reflective of severe symptomatology. Their finding of a disconnect between neurobehavioral outcomes and PSG findings is commonly reported and strengthened the credibility of their results. They provided convincing evidence of the benefits of early A&T for behavior, quality of life and symptom management, the latter two demonstrating fairly large effect sizes. The implications being, A&T may have a role in treating other entities on the sleep disordered breathing (SDB) spectrum, including upper airway resistance syndrome and obstructive hyponea.

Despite the study's many positive features, the accompanying editorial and subsequent commentaries have identified potential limitations.[9-12] No improvement in the primary outcome was demonstrated. Reasons include the unlikely ability for the intervention to improve a normal baseline neurocognitive status, insensitivity of the NEPSY tool and perhaps the degree of permitted nocturnal desaturation was neither extensive nor prolonged enough to benefit from A&T. Also, the allotted follow-up time of 7 months may have been too short to allow for the recovery of central cognitive deficits. Finally, characteristics of the study population were heterogeneous in terms of OSAS severity (mild-25%, moderate-50% and severe-25%) and factors predisposing to severe OSAS (black and obese children accounted for 55% and 33% of the population, respectively). The former resulting in varying degrees of recovery and the latter associated with treatment failure. External validity was limited by examining children aged 5 to 9.9 years. Children undergoing A&T are typically younger, OSAS tends to be more severe and their potential for neurocognitive insult and recovery may differ from older children. Hence, it is unclear whether the outcomes apply to younger children. Lastly, the severity of asthma and allergies, both thought to modulate the severity of OSAS were not formally assessed and management was not standardized. It is possible that the medical management of these conditions may have contributed to the moderate rate of sleep study normalization in the WW group.

Overall, the CHAT trial was a well-designed and thoroughly executed study that provides some evidence for the benefits of A&T to manage OSAS and possibly other SDB diagnoses. The optimal timing and choice of intervention however, still remains elusive.[11] Future prospective trials should include younger children, restrict diagnosis to moderate to severe OSAS, provide for longer follow-up and evaluate the role of both medical management and surgery. A factorial study design would best accommodate these recommendations.[13] ❖

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SASM Announcements

Are You Interested in Serving the SASM?

The SASM is looking for members who may be interested in serving. Please send your CV to the SASM administrative office at info@sasmhq.org if you are interested to serve on a committee.

SASM Sleep Medicine Clinical Practice Group

There are a number of anesthesiologists who have dual specialties in the area of anesthesia and sleep medicine. The SASM is forming a new Sleep Medicine Clinical Practice Group. If you are interested in joining this group, please kindly email the SASM administrative office at info@sasmhq.org with your interest and CV.

SASM Obstetrics Group

OSA in pregnancy is an established co-morbidity associated with high risk diagnoses such as pre-eclampsia, diabetes mellitus and intrauterine growth retardation.

Recognition of OSA in pregnancy is difficult as tiredness and poor sleep is readily associated with the pregnant condition and women describe their sleep symptoms differently to men.

More research in this area is required. If you are interested in sleep disordered breathing in the parturient, please contact Alexandra Bullough at abullough@lumc.edu to be part of SASM Obstetrics Group. All are welcome.

Society of Anesthesia and Sleep Medicine Department Membership for $1000

The Society of Anesthesia and Sleep Medicine (SASM) is a multidisciplinary group of clinicians and researchers who have an interest in topics concerning many aspects of perioperative care that are at the heart of anesthesiology practice and education, including the basic science and clinical aspects of sleep disordered breathing, airway management, pulmonary medicine as well as patient safety.

Sleep medicine has recently been accredited by the American Board of Anesthesiology (ABA) as a board certifiable sub-specialty in anesthesiology, thus opening up tremendous opportunities to our specialty and its trainees in the practice of perioperative medicine.

A membership in SASM for all anesthesiology faculty/staff/residents would not only be of great educational and academic interest, but would offer valuable information in respect to career development. One of SASM's goals is to promote scholarly activities for residents and junior faculty. **Each year SASM recognizes best abstracts in clinical and basic science research by giving out six abstract awards at their Annual Meeting. In addition, SASM is also offering a $20,000 research grant.**

Realizing the large role that SASM can play in the education of anesthesiologists through its online and in print educational material, as well as information presented during its Annual Meeting immediately preceding the ASA Annual Meeting. SASM has a departmental universal membership covering all staff (including anesthesiologists, CRNAs, AAs and other physician extenders) for a much reduced fee of $1,000, and all residents for an additional fee of $600, to cover basic administrative costs.

Some of the membership benefits include:

- Receive discounted registration fees for SASM Annual CME Meeting
- Learn of collaborative research projects
- Access to educational material, featured articles, literature updates
- A forum to evaluate and discuss the latest research
- Education and clinical practices pertaining to sleep-disordered breathing
- Advice and counsel from members regarding various practice paradigms
- Enhance your network of regional, national and international colleagues
- Access to the SASM newsletter

Membership can be applied for online, please visit the SASM website www.sasmhq.org

SASM

SASM Membership Benefits at a Glance…

These are exciting times for SASM. While we are a new and growing organization, we feel our collaborative efforts will give rise to unlimited opportunities. You have the ability to make an impact from the very start. ***Please consider joining SASM today!***

The mission of SASM is to advance standards of care for clinical challenges shared by Anesthesiology and Sleep Medicine, including perioperative management of sleep disordered breathing, as well as to promote interdisciplinary communication, education and research in matters common to anesthesia and sleep.

Benefits of SASM Membership include:

- Significantly Reduced Registration Fees at SASM Sponsored Scientific Meetings
- SASM Newsletter
- *Full Voting Rights in Electing SASM Board of Directors and SASM Officers *(*Dependent on membership category)*
- Regular Receipt of "Literature Updates" and "Featured Articles," Allowing All Members to Stay Current on New Developments in theArea
- Enhances Your Network of Regional, National and International Colleagues
- Learn of Collaborative Research Projects
- Educational Material Posted on SASM Website for Members
- Access to a "Discussion Forum" to Evaluate and Discuss the Latest Research, Education and Clinical Practices Pertaining to OSA and Patients with Other Sleep-Disordered Breathing
- Get Advice and Counsel from Other Members Regarding Various Practice Paradigms

The easiest and quickest route to join as a member of SASM is to visit our website, www.SASMhq.org, and pay by credit card by clicking on the Membership Information tab. You can also mail check payment to our office at the address provided below.

SASM Classes of Membership:

❑ **Gold Patron Member - $250**
- Showing special support for SASM
- This donation is inclusive of annual membership and available for all classes of membership.

❑ **Active Member - $100**
- Physicians and Scientists. Active Members have voting rights, can hold office and serve on the Board of Directors.

❑ **Associate Member - $50**
- Non-Physicians and Non-Scientists. Associate Members do NOT have voting rights.

❑ **Educational Member - $50**
- Fellows, Residents, Medical Students or other undergraduates. Educational Members do NOT have voting rights.

Please consider joining as a "Gold Patron" for 2014

The additional donation beyond general membership will be used to promote scholarly activity in the area of anesthesia and sleep medicine and promote patient care programs in areas common to anesthesia and sleep medicine. Gold Patrons will be recognized on our website for their extraordinary support of SASM efforts and will be invited to special events highlighting the programs made possible with their donations, including a keynote speaker dinner at the Annual Meeting.

SASM - NEW OFFICE LOCATION!
6737 W Washington Street, Suite 1300
Milwaukee, Wisconsin 53214

SASM is a 501(C)(3) non-profit organization. Membership dues may be deductible as a business expense. **SASM Tax ID number is 27–4613034**