

## Report updates guidance on sedation in children undergoing medical, dental procedures

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New guidance on pediatric sedation recommends more advanced skills on the part of practitioners, unifies guidelines for medicine and dentistry, and offers clarifications on monitoring modalities and other methods to improve safety and outcomes.

The AAP clinical report *Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures: Update 2016*, <http://pediatrics.aappublications.org/content/early/2016/06/24/peds.2016-1212>, is jointly issued with the American Academy of Pediatric Dentistry (AAPD). It will be published in the July issue of *Pediatrics*.

### Highlights of practice recommendations

**Photo courtesy of Stephen Wilson, D.M.D., M.A., Ph.D.**

The report recommends the following:

- Practitioners who administer moderate sedation need to have the skills to rescue a child with apnea, laryngospasm and airway obstruction, and to perform successful bag/mask ventilation.
- Those administering deep sedation also must be able to perform tracheal intubation and cardiopulmonary resuscitation.
- Additionally, the skilled observer for either moderate or deep sedation must be trained in Pediatric Advanced Life Support.
- Most importantly, the use of capnography is highly encouraged for children who are moderately sedated and required for those who are deeply sedated.



The report recognizes that in some situations, capnography may not be possible until after the child is sedated, and the veracity of the numbers produced often will be unreflective of the actual arterial or expired carbon dioxide values. However, the real issue is whether the child is breathing; if there is air exchange; whether the airway has become obstructed; and the effectiveness of airway maneuvers in correcting complications.

To aid clinicians, the report includes three decision trees to guide management of airway obstruction, laryngospasm and apnea.

### **Evolution of the guidance**

The issue of safe sedation was raised in the 1980s following several deaths in dental offices. In 1985, the Academy developed the first sedation guideline by any organization. In 1991, it was determined that the guideline was not being followed because the title referred to “general anesthesia,” and practitioners thought this just applied to because the title contain the word “general anesthesia” and many practitioners thought this just apply to anesthesiologists. Therefore, the 1992 revision was retitled *Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures*.

In the interim, other organizations such as the American Society of Anesthesiologists and the Joint Commission issued additional guidelines. In 2002, an addendum to the AAP guideline was published, unifying language among these groups.

As a result, advanced airway skills — including the ability to perform bag mask ventilation, unobstruct an obstructed airway, ventilate the patient who had developed apnea, and perform cardiopulmonary resuscitation skills now were required. Children who were moderately sedated would be observed by an individual who could help with interruptible tasks; at least one person had to have advanced airway management skills. Children who were deeply sedated had to be observed by an independent observer whose only responsibility was to monitor the child.

The AAP-AAPD guideline updated in 2006 was a unified document that represented pediatric dentistry and general pediatrics with the same language, the same definitions and the same goals. It emphasized proper fasting for elective procedures, a focused airway examination, warnings about nutraceuticals and drug interactions on the cytochrome system. The guideline also recognized that children younger than 6 years of age generally require deep sedation.

Continuous quality improvement and simulation training for management of rare events were encouraged, as was familiarity with airway adjuncts such as supraglottic devices for rescue, e.g., laryngeal mask airway. The use of capnography was encouraged but not required.

This past year, the AAPD and the Academy began collaborating on the latest report that included capnography and the more rigorous training recommendations.

Overall, the update is a victory for children who require procedural sedation. Once individuals begin to use capnography, they will see great value in providing near-

immediate recognition of respiratory compromise even before oxygen saturation changes. Just like many children have been rescued following an adverse sedation event because of pulse oximetry, capnography provides warning even before desaturation.

The acronym **SOAPME** is commonly used as a reminder in the planning and preparation for a sedation procedure:

**S** = suction

**O** = oxygen; an adequate reserve supply

**A** = airway; size-appropriate equipment to manage a non-breathing child

**P** = pharmacy; drugs needed to support life and appropriate reversal agents

**M** = monitors; size-appropriate oximeter probes, electrocardiogram, noninvasive blood pressure measurement

**E** = equipment; a defibrillator with appropriate size pads

*Drs. Coté and Wilson are lead authors of the clinical report.*

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