

RECOMMENDATIONS OF CLINICAL SOCIETIES AND ORGANIZATIONS

Standards and guidelines for capnography monitoring during procedural sedation

Capnography continues to be recommended by a rapidly increasing number of clinical societies and patient safety organizations to help improve patient outcomes by monitoring oxygenation and adequacy of ventilation. Organizations that have most recently released capnography statements and recommendations for the use of capnography monitoring during procedural sedation include the following:

Organization	Recommendation	Implemented
Academy of Medical Royal Colleges ¹	Capnography should be considered a developmental standard for patients receiving sedation, where it's not already a fundamental standard.	2013
Accreditation Association of Ambulatory Healthcare's Institute for Quality Improvement ²	Use continuous capnography during the procedure if the patient requires moderate sedation.	2012
American Association of Oral and Maxillofacial Surgeons ³	Unless hindered or invalidated by the nature of the patient, procedure, or equipment, evaluate ventilation adequacy during moderate or deep sedation and general anesthesia by: <ul style="list-style-type: none"> ▪ Continually observing qualitative clinical signs ▪ Monitoring for exhaled carbon dioxide 	2012
American College of Emergency Physicians and Emergency Nurses Association ⁴	For patients undergoing procedural sedation and analgesia, capnography can be used: <ul style="list-style-type: none"> ▪ In addition to pulse oximetry and clinical assessment to detect hypoventilation and apnea earlier than pulse oximetry and clinical assessment would do so alone ▪ To assess ventilation adequacy 	2014
American Society For Gastrointestinal Endoscopy ⁵	Consider capnography with extended monitoring during deep sedation since it may decrease the risks.	2002
American Society of Anesthesiologists ⁶	Unless hindered or invalidated by the nature of the patient, procedure, or equipment, evaluate ventilation adequacy during moderate or deep sedation and general anesthesia by: <ul style="list-style-type: none"> ▪ Continually observing qualitative clinical signs ▪ Monitoring for exhaled carbon dioxide 	2011
Association of Anaesthetists of Great Britain and Ireland ⁷	Consider continuous capnography for all patients receiving: <ul style="list-style-type: none"> ▪ Deep sedation ▪ Moderate sedation and whose ventilation can't be directly observed 	2011
Association for Radiologic & Imaging Nursing ⁸	Consider capnography monitoring during moderate and/or deep sedation.	2014
British Royal College of Anaesthetists / British Society of Gastroenterology ⁹	Using continuous waveform capnography to monitor respiration is: <ul style="list-style-type: none"> ▪ Recommended for all sedated patients ▪ Essential for patients whose ventilation can't be directly observed <p>These widely available devices should be used for patients receiving propofol sedation for endoscopic retrograde cholangiopancreatography (ERCP).</p>	2014

Canadian Anesthesia Society ¹⁰	Use capnography monitoring for all patients undergoing general anesthesia and deeper sedation levels.	2012
College of Physicians of Quebec ¹¹	Monitoring carbon dioxide allows for: <ul style="list-style-type: none"> ▪ The early identification of complications like excessive sedation, hypoventilation, and apnea ▪ Better control of the sedation level based on the implemented diagnostic and therapeutic intervention 	2015
European Board of Anaesthesiology ¹²	Use continuous capnography to monitor all patients undergoing moderate or deep sedation.	2011
Institute for Healthcare Improvement ¹³	Use pulse oximeters and capnographs to monitor patients for respiratory depression as shown by decreased oxygen saturation or increased carbon dioxide levels.	2012
Netherlands Healthcare Inspectorate ¹⁴	Capnography is expected to meet an important need in the early detection of respiratory depression and airway obstruction. Measuring end-tidal CO ₂ by capnography is recommended especially in procedures where continuous visual and audible observation is impossible or unreliable.	2012
Society of Interventional Radiology ¹⁵	Interventional radiologists performing cases using moderate sedation should consider learning about CO ₂ capnography, including: <ul style="list-style-type: none"> ▪ How it works ▪ Its benefits over oximetry ▪ How to use it in clinical practice 	2013
Society of Gastroenterology Nurses and Associates ¹⁶	Capnography monitoring may reduce risks during moderate and deep sedation.	2016
Spanish Society of Gastrointestinal Endoscopy ¹⁷	Capnography may help with seriously ill patients who: <ul style="list-style-type: none"> ▪ Have multiple conditions ▪ Will undergo long-term sedation for prolonged or complex endoscopy procedures (ERCP, prosthesis placement, etc.) <p>This type of monitoring:</p> <ul style="list-style-type: none"> ▪ Measures ventilation activity ▪ Predicts potential respiratory depression before a pulse oximeter may detect desaturation 	2006

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13. How-to guide: prevent harm from high-alert medications. Institute for Healthcare Improvement. <http://www.ihl.org/resources/Pages/Tools/HowtoGuidePreventHarmfromHighAlertMedications.aspx>. Published 2012.
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