



Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia¹

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Table with 5 columns: Minimal Sedation/Anxiolysis, Moderate Sedation/Analgesia ("Conscious Sedation"), Deep Sedation/Analgesia, and General Anesthesia. Rows include Responsiveness, Airway, Spontaneous Ventilation, and Cardiovascular Function.

¹Monitored Anesthesia Care does not describe the continuum of depth of sedation, rather it describes "a specific anesthesia service in which an anesthesiologist has been requested to participate in the care of a patient undergoing a diagnostic or therapeutic procedure."
²Reflex withdrawal from a painful stimulus is NOT considered a purposeful response.
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⁴Rescue of a patient from a deeper level of sedation than intended is an intervention by a practitioner proficient in airway management and advanced life support.

Minimal Sedation (Anxiolysis) is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and physical coordination may be impaired, airway reflexes, and ventilatory and cardiovascular functions are unaffected.

Moderate Sedation/Analgesia ("Conscious Sedation") is a drug-induced depression of consciousness during which patients respond purposefully² to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

Deep Sedation/Analgesia is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully³ following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

General Anesthesia is a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation is a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to rescue⁴ patients whose level of sedation becomes deeper than initially intended. Individuals administering Moderate Sedation/Analgesia ("Conscious Sedation") should be able to rescue⁴ patients who enter a state of Deep Sedation/Analgesia, while those administering Deep Sedation/Analgesia should be able to rescue⁴ patients who enter a state of General Anesthesia.

### ***Patient Pre-Sedation Assessment***

**A good Pre-Sedation Assessment will give you clues as to whether your patient is likely to be at risk for airway compromise with sedatives or other complications. Always review your patients's medical history.**

#### **Screen Your Patient For The Following:**

- If they have been diagnosed with sleep apnea
- Use CPAP
- Snore heavily
- Are tired throughout the day
- Fall asleep in the afternoon
- Wake up with headaches
- Do they have high blood pressure?
- Is the patient overweight?
- Do they have a neck circumference of greater than 16.5 inches?
- Do they have the appearance of having no neck, large tongue and uvula?
- Does the patient's Cone Beam x-ray show a narrow airway? Ask about previous anesthetic history and any known complications that especially involves breathing or airway. Look at possible medication interactions with the sedatives you plan to give. Some interactions can potentiate sedatives and some can decrease effect.
- Does the patient say he/she is very sensitive to medications? If the patient is older than 65, you may need to decrease dosages.

### ***Patient Post-Treatment Guidelines***

- Closely monitor sedated patients until fully conscious while when not being stimulated.
- After the procedure is finished and no one is stimulating the patient by working in their mouth, they may fall into a deep sleep and have airway compromise. Vigilance in monitoring continues into recovery.
- After discharge, the escort who will be monitoring the patient at home should be advised of the need to observe for airway or breathing problems due to lingering sedation effects and pain medications.
- If you believe that your patient may have sleep apnea as evidenced during the procedure or recovery by heavy snoring or obstruction, do not prescribe an opioid narcotic pain medications in the 24-hour period after sedation. Manage the pain with long acting local anesthesia, Tylenol and Ibuprofen combinations.
- Some patients have succumbed to opioid pain medications in combination with lingering sedative agent effects who had sleep apnea undiagnosed and untreated. If a patient owns a CPAP machine, remember to advise that they use it at home when sleeping that night.
- One needs to recognize when a patient has progressed to a greater than expected level of sedation and be able to respond appropriately to rescue the patient. One should never hesitate to call 911 EMS for assistance.