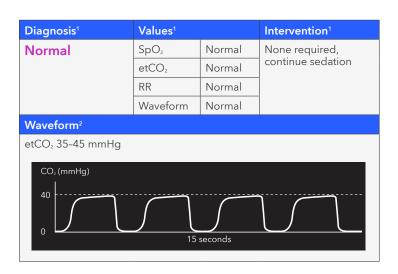
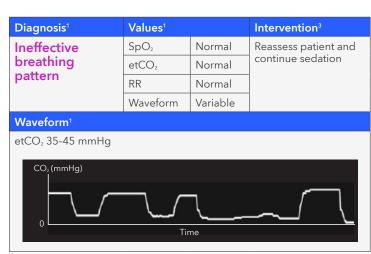
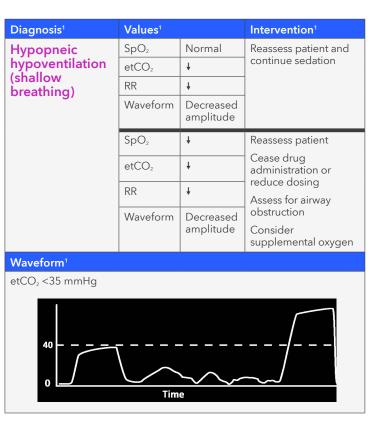
## Capnography during procedural sedation

Changes in capnography values and waveforms may help clinicians understand a patient's level of comfort, sedation, and respiratory function during procedural sedation.





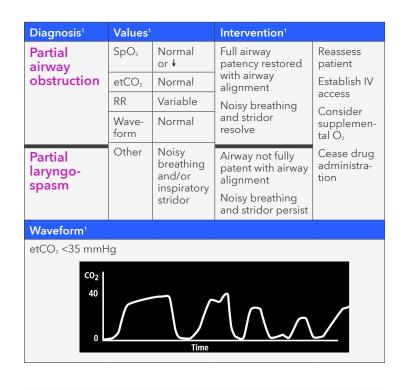
Diagnosis <sup>1</sup>	Values <sup>1</sup>		Intervention <sup>1</sup>			
Hyperventilation	SpO <sub>2</sub>	Normal	Reassess patient and			
	etCO <sub>2</sub>	+	continue sedation			
	RR	†	Hyperventilation can be a sign of anxiety,			
	Waveform	Decreased amplitude and width	pain, or metabolic issues <sup>4</sup>			
Waveform <sup>1</sup>						
etCO <sub>2</sub> <35 mmHg						
40 [co <sub>2</sub> ]						

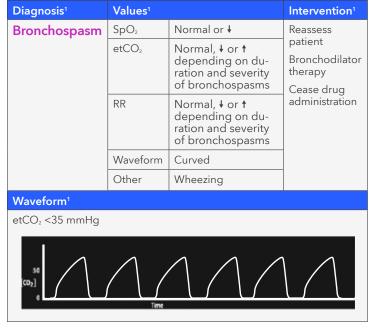


Diagnosis <sup>1</sup>	Values <sup>1</sup>		Intervention <sup>1</sup>
Bradypneic hypoventilation	SpO <sub>2</sub>	Normal	Reassess patient and
	etCO <sub>2</sub>	<b>†</b>	continue sedation
	RR	+	
	Waveform	Increased amplitude and width	
	SpO <sub>2</sub>	+	Reassess patient
	etCO <sub>2</sub>	<b>†</b>	Cease drug administration or
	RR	+	reduce dosing Assess for airway
	Waveform	Increased amplitude and width	obstruction Consider supplemental oxygen
Waveform <sup>1</sup>			
etCO <sub>2</sub> >45 mmHg			
[co <sub>2</sub> ]	Time		

Diagnosis <sup>1</sup>	Values <sup>1</sup>		Intervention <sup>1</sup>			
Hypopneic hypoventilation with periodic breathing	SpO <sub>2</sub>	Normal or <b>↓</b>	Reassess the patient			
	etCO <sub>2</sub>	<b>†</b>	administration or			
	RR	<b>†</b>	reduce dosing			
	Waveform	Decreased amplitude	Assess for airway obstruction			
	Other	Apneic pauses	Consider supplemental oxygen			
Waveform <sup>1</sup>						
etCO <sub>2</sub> <35 mmHg						
[co <sub>2</sub> ]						

Diagnosis <sup>1</sup>	Values <sup>1</sup>		Intervention <sup>1</sup>	
Apnea	SpO <sub>2</sub>	Normal or ↓ depending on duration	Reassess patient Use: • Stimulation	
	etCO <sub>2</sub>	Zero	Bag mask	
	RR	Zero	ventilation • Reversal agents	
	Waveform	Absent	(as appropriate)	
	Other	No chest wall movement or breath sounds	Cease drug administration	
Complete airway obstruction	SpO <sub>2</sub>	Normal or ↓ depending on duration	Airway patency restored with airway alignment	
	etCO <sub>2</sub>	Zero	Waveform present	
Complete laryngospasm	RR	Zero	Airway not patent	
	Waveform	Absent	with airway alignment	
	Other	Chest wall move-	No waveform	
		ment and breath sounds present	Positive pressure ventilation	
Naveform <sup>1</sup>				
[CO.] 40	5	15 seconds		





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The Microstream™ capnography monitoring system should not be used as the sole basis for diagnosis or therapy and is intended only as an adjunct in patient assessment.

- 1. Krauss B, Hess DR. Capnography for procedural sedation and analgesia in the emergency department. Ann Emerg Med. 2007;50(2):172-81. Epub Jan. 12, 2007.
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