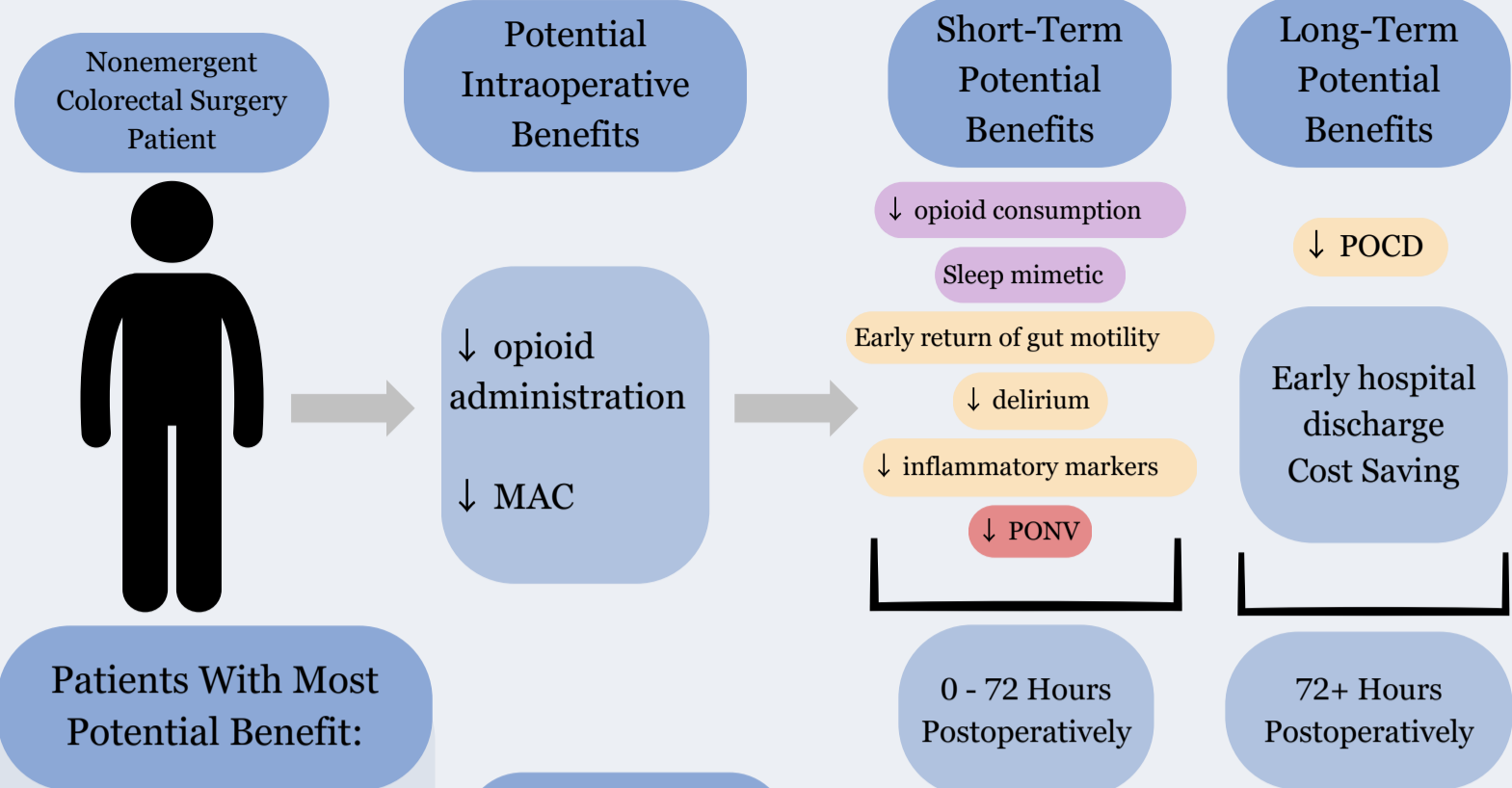


# Practice Considerations for Intraoperative Administration of Dexmedetomidine as an Adjunctive for Adult Patients Undergoing Nonemergent Colorectal Surgery



**Patients With Most Potential Benefit:**

High Risk for POCD  
 High Risk for PD  
 High Risk for PONV  
 Patients who benefit from opioid-sparing anesthesia

- Risk of airway obstruction (COPD, OSA, obesity)
- Opioid-tolerant patients

### Dosing

**Bolus:** 1 mcg/kg over 10 minutes  
**Timing:** Prior to induction

**Infusion:** 0.2-1.0 mcg/kg/hr  
**Start:** After endotracheal intubation  
**Stop:** 30 minutes prior to end of procedure

**Warning:** Bolus, especially administered rapidly, is associated with increased risk and severity of hypotension and bradycardia

### Safety Considerations

**Site:** α<sub>2</sub> Receptors on pre- and post-synaptic membranes in brainstem  
**Mechanism:** Inhibit release of norepinephrine, decreasing sympathetic outflow  
**Effect:** Decrease heart rate and blood pressure



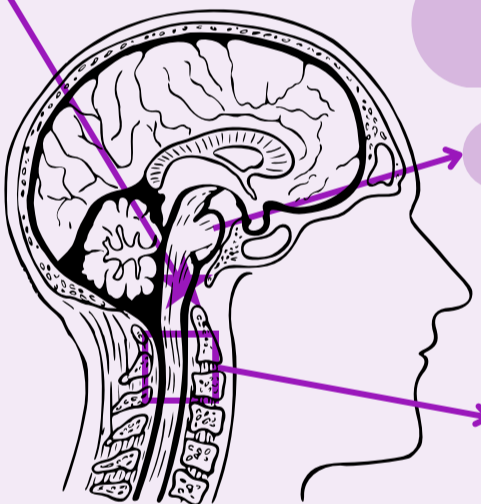
#### Caution

1. Baseline heart rate <50-55 bpm
2. Advanced Age
3. Acute cardiac dysfunction
4. 2nd or 3rd degree heart blocks
5. NYHA Class III or IV

#### Treatment of Dexmedetomidine-Associated Hypotension and Bradycardia

1. STOP the infusion
  - a. Often this is enough to resolve the problem without further intervention
2. Atropine
3. Ephedrine
4. Volume repletion, if clinically relevant

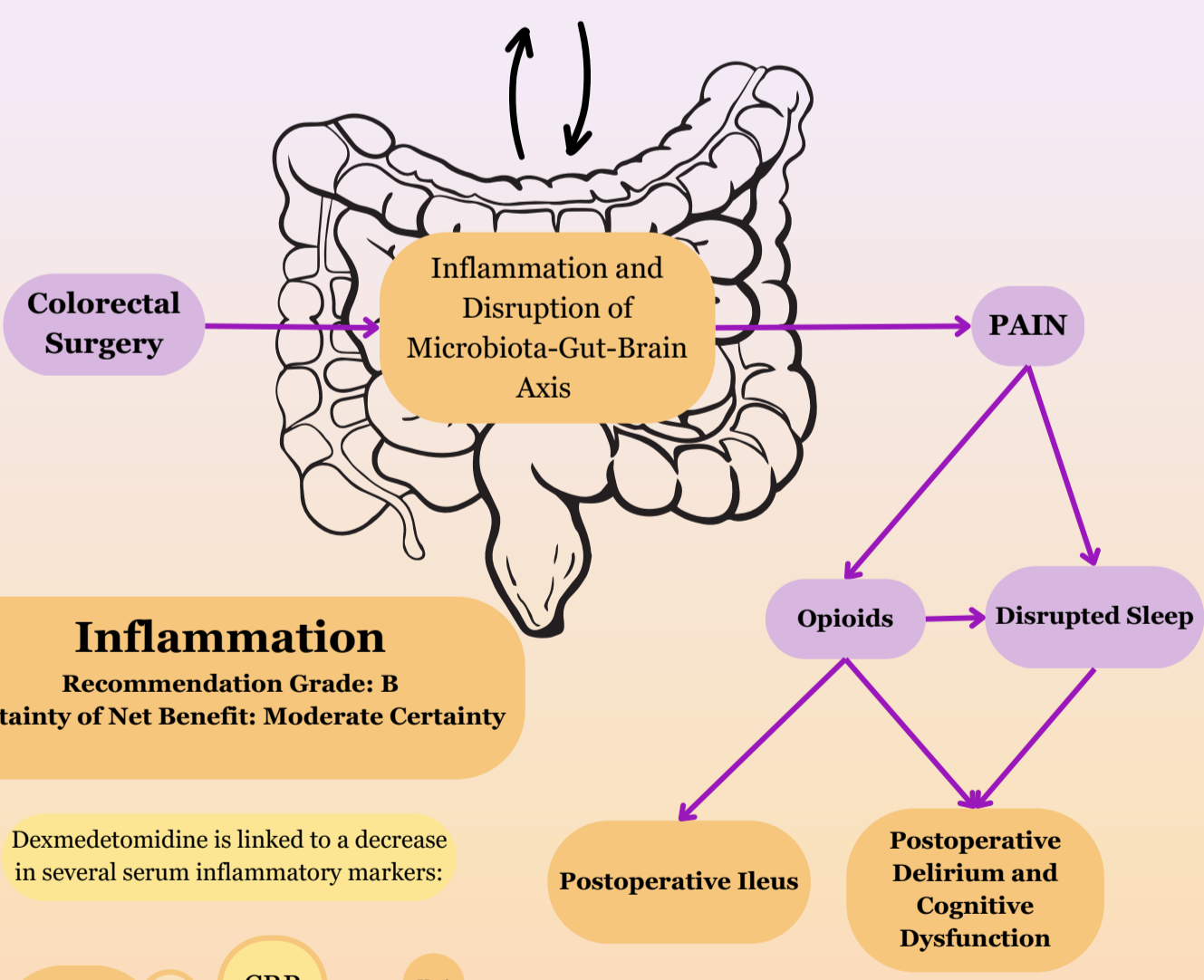
**Pain**  
**Recommendation Grade: B**  
**Certainty of Net Benefit: Moderate Certainty**



**Pain Modulation by Dexmedetomidine**

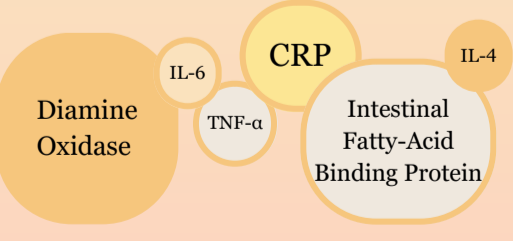
**Site:** Locus Coeruleus in the pons  
**Effect:** Pain Modulation

**Site:** Posterior Horn of Spinal Cord  
**Effect:** Pain modulation



**Inflammation**  
**Recommendation Grade: B**  
**Certainty of Net Benefit: Moderate Certainty**

Dexmedetomidine is linked to a decrease in several serum inflammatory markers:



**Postoperative Nausea and Vomiting**  
**Recommendation Grade: B**  
**Certainty of Net Benefit: Moderate Certainty**

#### Proposed Mechanisms for Dexmedetomidine's Influence on PONV

- ↓ opioids: Opioids decrease intestinal mobility, gastric emptying, and GI secretions
- ↓ MAC of volatile anesthetics: Dose-dependent relationship between volatile anesthetic and PONV
- ↓ sympathetic activity: Theory: enhanced nausea perception related to sympathetic activity