

## Anesthetic Considerations for Spinal Cord Stimulators

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**Abstract :** Spinal cord stimulators (SCS) are increasingly used for managing chronic pain, but their presence requires careful anesthetic planning. This review explores critical anesthetic considerations for patients with SCS, encompassing preoperative, intraoperative, and acute pain management, as well as specific considerations for obstetric and out-of-operating-room procedures. Preoperative Evaluation: Thorough assessment is essential, including a detailed medical history of the SCS device, such as type, manufacturer, and settings. Additionally, a complete pain history and a physical exam are necessary to understand the patient's baseline neurological function and assess mobility, which can impact anesthesia management. Intraoperative Considerations: Electrocautery poses a risk for patients with SCS due to potential interference. Monopolar electrocautery is discouraged, but if needed, the grounding pad should be positioned away from the device, and the device itself should be turned off. The SCS device can introduce ECG artifacts and potentially interfere with pacemakers and defibrillators (ICD), which may result in inappropriate pacing or shocks. Precautions, including baseline ECG and interrogation, are recommended if both devices are present. Furthermore, lithotripsy, though generally avoided, can be performed under certain conditions with caution. Obstetric Anesthesia: While SCS devices are generally turned off during pregnancy, they have shown no interference with fetal cardiotocography, and epidural placement can be safely achieved with a sterile technique below the SCS leads. Acute Pain Considerations: SCS placement is taken into account in pain management plans, especially with neuraxial anesthesia, as potential risks include infection, limited spread due to fibrous sheaths, and damage to the SCS leads. Out-of-Operating Room Procedures: MRI, previously contraindicated, is now conditionally safe with SCS devices, depending on manufacturer specifications. CT scans are generally safe, though radiation should be minimized to prevent device malfunction. For radiation therapy, specific safety measures are recommended, such as keeping the beam at least 1 cm away from the device and limiting the dose to prevent damage. In conclusion, anesthetic management for SCS patients requires meticulous planning across all stages of care. By understanding the unique interactions and potential risks associated with SCS and other devices, healthcare providers can enhance patient safety and improve outcomes. Further research and the establishment of standardized guidelines are essential to optimize perioperative care for this growing patient population.

**Keywords :** anesthesia, chronic pain, spinal cord stimulator, SCS

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