Rehabilitation after spinal surgeries

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Rehabilitation following spinal surgery (e.g., hemilaminectmy) is critical for functional recovery and quality of life. Grounded in the principles of neuroplasticity, early and progressive rehabilitation supports neural reorganization and promotes motor recovery. Incorporating neurodevelopmental sequencing is essential, as it mirrors the natural progression of motor skill acquisition—from postural control to coordinated movement—and lays the foundation for functional mobility. Key components include multimodal pain management to facilitate participation, preservation of joint range of motion through passive movement, and manual therapy to maintain muscle flexibility. Muscle tone is addressed with facilitation techniques for hypotonic limbs and inhibitory methods for spasticity. Core strengthening exercises, such as weight shifting and supported standing, are foundational for trunk stability. Balance and proprioception are retrained through use of wobble boards, balance pads, and cavaletti poles. Strengthening progresses from active-assisted movements to independent movement with different intensity, and gait retraining. In deep pain-negative patients, spinal walking—mediated by central pattern generators—may develop with consistent, rhythmic training. A structured, individualized rehabilitation plan is essential to optimize outcomes and restore mobility in dogs post spinal surgery.