Perioperative peripheral nerve injury is a serious yet preventable perioperative complication. Since the inception of the American Association of Anesthesiologists Closed Claim Project, the incidence of peripheral nerve injury has remained constant with an overall reported prevalence rate of 15% to 16%. To date, the most frequent nerve injuries are ulnar nerve neuropathy and brachial plexus injury. This article will review the clinical presentation, pathophysiology, causative and risk factors, and preventive measures for the two most common nerve injuries. Knowledge of the anatomical structures and components of peripheral nerves prone to injuries during surgery can assist in defining precautionary actions in the perioperative setting. Positioning techniques in the operating room, early recognition of neuropathies, and use of a perioperative tool in the postoperative setting are keys to reduce significant clinical complications.