Preservation of existing neural function is a high priority for management of vestibular schwannomas (VSs), particularly for patients with neurofibromatosis type II. There has been much discussion as to the best therapeutic option for a patient with a small VS and functional hearing. Microsurgical treatment of VS via a middle fossa approach provides initial hearing preservation rates up to 70%. If the hearing is preserved initially, it has a high likelihood of long-term preservation with the majority maintaining serviceable hearing at least 10-18 years postoperatively. These results are generally better than the hearing preservation rates following observation or radiation. In an effort to preserve facial nerve function in large VSs (>2.5cm), near total or subtotal resection has been increasingly advocated. In a recent multi-institutional trial, there was a three fold higher likelihood of tumor regrowth in tumors that underwent subtotal resection compared to those with gross total and near total resection. For the 21% of tumor remnants that continued to grow after subtotal resection, radiation failed to control growth in 36%. In an effort to preserve hearing in patients with NF2, novel therapies are emerging including systemic chemotherapeutics such as the VEGF inhibitor, bevacizumab, kinase inhibitors such as axitinib and possibly aspirin. We find that inhibitors of c-Jun N-terminal kinase reduce schwannoma cell growth in vitro and in vivo raising the possibility that they may be useful in the management of patients with NF2.