# Tips for Neurosurgery

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1. *Rounding:* I would arrive 15-20 minutes before the start time to print lists for everyone. There was no pre-rounding on the service I was on. I would then take notes and put in orders as the senior residents did the history and physical.
    a. Post-op day 2: Remove head wrap, staples, etc.
    b. Drains: Use the 24 h output dot phrase on Epic, pressures, and height.
    c. Incisions: Clean? Dry?
    d. Progress notes would be extremely short compared to those on other services.

2. *During procedures:* There are things you can do before, during, and after a procedure.
    a. *Night before:* Read up on the case. Why were they taken to the OR? What is the patient history (read the H&P or consult note)? What are the indications for surgery? What are some relevant facts or concepts related to the procedure?
    b. *Patient prepping:* Write name on whiteboard with your glove size, bird dogging (letting residents know when patients are taken to the OR), turning / positioning the patient, setting up the Mayfield clamp / head donut, pulling up imaging, helping with neuronavigation by clicking buttons while the resident/attending is registering to the imaging, calibrating the microscope, positioning the overhead lights (do NOT do this for patients who have taken 5-ALA, as they can get sunburnt). Note that after patient prepping with betadine solution, you must wait 3 minutes to prevent intra-op fires from cautery.
    c. *During the operation:* This depends on the institution culture, but things I've done include draping, stapling draping, setting up bipolars/ monopolars/ suction/ etc., making the incision, suctioning, placing Raney clips, stripping periosteum, making the burr hole, irrigation during drill/saw use, coagulating dura, opening dura, placing plates on bone flap, pulling VP shunt tubes out, stabilizing the patient head, closing the subgaleal layer, and stapling incision closed.
    d. *After the operation:* Cleaning up the patient, grabbing warm towels for the patient, moving the patient, quick post-op assessment (eye opening, strength x4), and placing post-op orders.

3. *New consults:* Before every consult, I would read the patient's course in hospital. This would include items such as why were they admitted, why was neurosurgery consulted, the patient's home meds, previous results, past medical history, social history, etc. I would also note down any relevant dates. During the consult, I would

ask about HPI, blood thinners (including ASA), work history, surgical history, (if relevant) cancer history, and (if relevant) family history. I would do a focused exam (e.g., orientation, language, cranial nerves, motor, light touch, pronator drift, Hoffman, Babinski).

4. *Use electronic resources:* I used the following resources to prepare and study for and during this rotation.
    a. I would the relevant sections in *Greenberg's Handbook of Neurosurgery, Neurosurgery Fundamentals*, *Neurology and Neurosurgery Illustrated*, *Youmans and Winn Neurological* Surgery, and AMBOSS.
    b. Epic templates from residents provide surprisingly solid learning.
    c. *UpToDate:* It has everything you could possibly need as a med student for dosing, drug interactions, diagnostic pathways, prognosis, follow up timelines, etc.
    d. *ChatGPT:* I used this for relevant questions to ask patients if I was unfamiliar with the condition.

5. *Tips and miscellaneous items:*
    a. One of the most useful tips for setting expectations was, "A good elective student will be missed after they leave."
    b. Tuck in rounds on call around 9-10 PM with the nurses will prevent a lot of unnecessary early morning calls. Be nice to the nurses (and everyone else)!
    c. Communicate with your fellow elective students. E.g., Divvy up the call schedule, split ORs if there are multiple. It looks bad if you seem to be withholding information or go out of your way to make others look bad.
    d. It's okay not to know things. I didn't know a lot of things, but would make sure to read around cases and, if I got something wrong, to read up on it for next time. It's also okay to mess up, as long as you learn something from it and own up to it. I had my fair share of mistakes during my rotation, but tried to own it, learn it, and do better next time.
    e. Try to do the little things consistently. E.g., Print the patient list, grab equipment supplies if you know you will be doing a procedure, pull up imaging if new imaging returned for patients, show up early, be available, be on time.
    f. As per one of my preceptors: "Eat when you can, sleep when you can, sit when you can."
    g. Read up on common conditions and procedures. These include trauma, including exact indications for surgery (e.g., midline shift of 5 mm and SDH thickness 10 mm, etc.), hydrocephalus, VP shunt, brain tumour resection, EVD placement, burr holes, suturing techniques.
    h. Call: I was 1 in 3 for my first week then 1 in 2 for my second week.