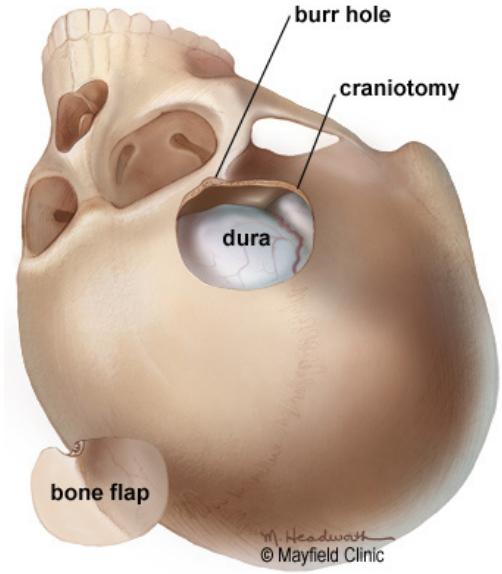
PREMIER NEURO SPINE INSTITUTE
INNOVATIVE BRAIN AND SPINE CARE

CRANIECTOMY AND CRANIOTOMY

CANDIDATES FOR A CRANIECTOMY AND CRANIOTOMY

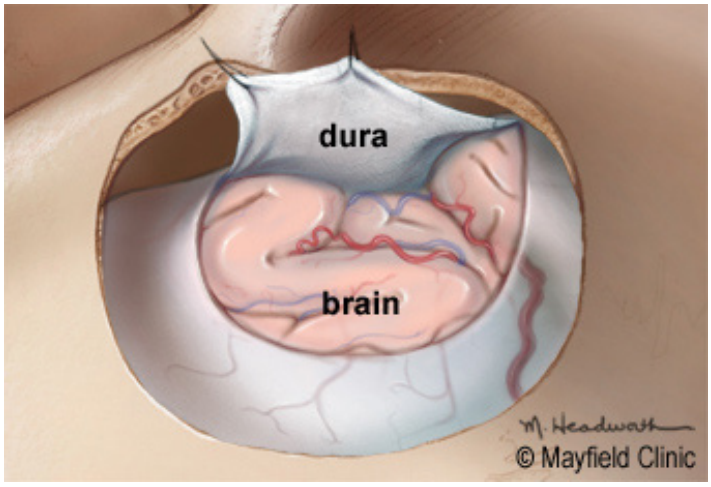
Patients who undergo a Craniectomy or Craniotomy have generally suffered a traumatic brain injury that caused swelling or infection of the brain, have a brain tumor, hematoma, aneurysm or an arteriovenous malformation (AVM). If the patient has suffered an injury, a Craniectomy or Craniotomy may be necessary to relieve pressure on the brain from swelling. If undergoing surgery to treat a brain tumor, hematoma (blood clot), aneurysm (bulging artery) or AVM (tangle of blood vessels), a Craniectomy or Craniotomy may be necessary to access the part of the brain where the condition is located.

In a Craniotomy, the flap of the bone that was removed during surgery is replaced or covered with plates and screws. If the portion of the skull is not replaced or covered after the surgeon repairs the problem, the procedure is called a Craniectomy.



WHAT ARE A CRANIECTOMY AND CRANIOTOMY?

A Craniectomy or Craniotomy can vary in size and severity. In some cases, only a small "burr hole" is required to relieve pressure or access the brain. In these cases, the hole created in the skull is about the size of a dime. A "keyhole" is slightly larger; about the size of a quarter. These minimally-invasive techniques may utilize visual guidance with the assistance of stereotactic frames, computer imaging or endoscopes to carefully and accurately lead instruments through the small holes. Examples of procedures performed through a burr hole or keyhole may be to insert a shunt into the ventricle, insert a deep brain stimulator, insert an intracranial pressure monitor or acquire a tissue sample for biopsy.

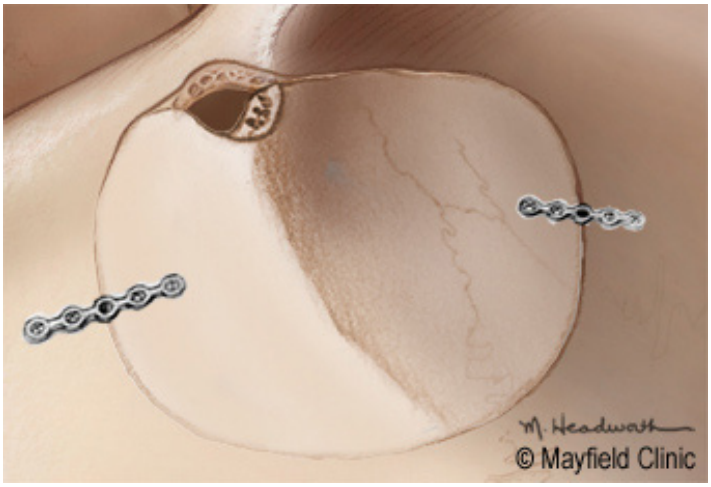


In more complex cases, a larger portion of the skull is cut away to access a larger portion of the brain. A neurosurgeon will always keep the hole as small as possible. In a Craniectomy, the bone flap that is removed may be frozen and replaced months later once the patient's brain has recovered.

In cases where the affected area is close to the part of the brain that

controls speech, the patient may be awake during the procedure. In the initial steps of surgery when the bone is cut away, the patient is asleep. Then, he or she is awakened to read or talk while the surgeon places a probe on the brain surface to map the area at risk. These areas differ between patients and this technique helps the surgeon identify and protect the areas to preserve function.

Severe Craniotomies occur at the base of the skull where delicate cranial nerves, arteries and veins are supported by the skull. When the bone at the base of the skull requires removal, additional specialists may be called in for assistance in reconstructing the skull base.



RESULTS OF CRANIECTOMY AND CRANIOTOMY PROCEDURES

Immediately following surgery, the patient is awoken from anesthesia and transferred to the Intensive Care Unit (ICU) for close monitoring. Medical professionals will test motor functions and brain activity by asking the patient to move his or her arms, legs, fingers and toes and checking the patient's pupils. The patient may also be asked general questions about themselves and about common knowledge to gauge his or her awareness. The patient may experience a sore throat from the breathing tube, nausea or a headache after surgery. Medication may be recommended to treat these symptoms.

If the patient experienced swelling of the brain, a steroid medication may be given. If seizures are a concern, an anticonvulsant may be given. Once the patient's condition stabilizes, he or she will be moved to a regular room for continued recovery. The patient will undergo increased activity checks and may remain in the hospital anywhere from two days to two weeks, depending on the complexity of the surgery and any complications.

After being released from the hospital, a follow-up appointment is made 10-14 days following the procedure. Recovery may take one to four weeks. A full recovery may take up to eight weeks.

WHAT ARE THE RISKS OF A CRANIECTOMY AND CRANIOTOMY?

Every surgery comes with risk. As with most surgeries, risk of bleeding, infection, blood clots and negative reaction to anesthesia are present. Complications specific to a Craniectomy and Craniotomy include possible stroke, seizures, brain swelling, nerve damage, leaking of cerebrospinal fluid and loss of some brain function.

Risks and results are dependent on the underlying condition being treated and any complications during surgery or recovery.

PRE AND POST-PROCEDURE INSTRUCTIONS

Pre-Procedure:

1. You will need to complete a medical clearance and/or lab work prior to surgery. Specific instructions will be given to you by our scheduling coordinator. You should get your lab work done PRIOR to your medical clearance appointment so your PCP can review the results during the appointment.

2. You must discontinue the following medication seven (7) days

prior to surgery: Aspirin, Aspirin related products, NSAIDS such as Advil, Ibuprofen, Aleve, Feldane, Nuprin, Motrin, Celebrex, Darvon, Ecotrin, Endodan, Excedrin, Florinal, Norgesic, Orphengesic, Percodan, Pravigard, and Soma. These medications may be resumed as soon as possible when deemed safe by your surgeon.

3. YOU MUST discontinue ALL blood thinners such as: Plavix (Clopidogrel), Coumadin (Warfarin), Eliquis, Pradaxa, Brillinta, Fish Oil, Aggrenox, Vitamin K, Vitamin E, Vitamin B6 7 day prior to surgery. These medications may be resumed as soon as possible when deemed safe by your surgeon.

4. FOR WOMEN ONLY: Hold Estrogens (Cenestin, Estratest, Estropipate, Menest, Ortho-Est, Premarin, Premphase, Prempro etc.) on the day of surgery and resume when instructed by your physician.

5. Hold ALL herbal supplements including garlic, ginseng, and St. John's Wart 7 days before surgery.

6. Please discontinue any and all diet pills two (2) weeks prior to your surgical procedure.

7. DO NOT EAT OR DRINK ANYTHING AFTER MIDNIGHT THE DAY BEFORE YOUR SURGERY, AND NOTHING ON THE MORNING OF YOUR SURGERY, UNLESS OTHERWISE ADVISED BY YOUR PHYSICIAN. You may take essential medications, such as blood pressure medications with JUST a sip of water.

8. Please arrive at the surgery center about 1-2 hours prior to your anticipated start time. Typically, the surgery center will provide you with instructions on when to arrive and specific directions (1-2 days beforehand) on when to get there and what to bring. However, it is VERY important that you bring your most recent imaging with you (CT scan/MRI disk).

9. We highly encourage bringing a friend or a family member to the surgery center with you, so that we can explain the post-operative rules and instructions.

10. After your procedure, you will recover in the PACU where nursing staff will provide you with post-operative care and inform you of how the procedure went.

11. If you are prescribed opiate pain medication by another physician (such as pain management physician), MAKE SURE you see them prior to surgery so you are covered for post-surgical pain. Pharmacies will not fill prescriptions from another provider. If you do not take opiates at home, we will prescribe you with a 7-day course to cover your post operative pain.

12. After surgery, you will most likely require physical therapy. This has been proven to lead to optimal outcomes. If you have a preference of a physical therapist, please let your provider know prior to or during your post-operative appointment.

Post Procedure:

1. Refrain from strenuous activities and follow post-operative instructions.

2. Pain can increase in your treatment areas 2-5 days after your procedure. It may take up to 14 days for symptoms to improve. Symptoms may fluctuate during the healing process, which occurs over 4-8 weeks. You likely will not feel fully back to "normal" for about 3 months.

3. You may have some difficulty swallowing and a sore throat for several days after your procedure. This is very common and will typically go away on its own. If it does not go away or you have difficulty with breathing please, call the number provided below.

4. You should apply ice around places of discomfort for 20 minutes on and 20 minutes off. Please place a barrier between your skin and the ice. Heat is okay to apply to your back or neck muscles, just not over the incision site.

5. You may experience a low-grade fever after treatment. Call if

your temperature is above 100.4.

6. No anti-inflammatory medication (Celebrex, Advil, Mobic, Motrin, Aleve) should be used for 10 days after surgery.

7. Light exercise or physical therapy is okay to start 2 weeks after treatment.

8. Pain medication prescriptions may say to take 2 tablets every 6 hours. If your instructions say this, JUST TAKE ONE tablet every 4-6 hours as needed for pain. WE DO NOT REFILL NARCOTIC PAIN MEDICATIONS AFTER SURGERY. If you continue to have pain, you will need to see a pain management doctor for narcotics.

9. If you were prescribed a brace, you must wear it when out of bed. If you are sleeping, sitting down, relaxing or eating, you may remove your brace. You will be in your brace between 4-6 weeks, depending on the type of surgery you had. If you had a cervical disc arthroplasty "replacement," you will only require a soft collar for two weeks.

10. Do not drive until you can stomp your feet on the ground and do not feel pain.

11. Wound care: You will have stitches buried underneath your skin. They will dissolve on their own. On top of the wound, you will have skin glue and steri strips (which look like little pieces of white tape). PLEASE INFORM PROVIDER PRIOR IF YOU HAVE ANY ALLERGIES TO SKIN GLUE OR ADHESIVE PRODUCTS. Do NOT remove or peel off steri-strips, these will fall off on their own. On top of the steri-strips, you will have gauze and tape. The gauze and tape is what you will be able to remove in 3 days. Do not wet the dressing at all in those 3 days. On day 3, you may remove the top layer of your dressing in the morning and shower as you normally would. DO NOT SUBMERGE wound in water for 3 weeks (bath tub, jacuzzi, beach, etc.).

12. Besides narcotic medication for pain, you may use Tylenol (acetaminophen) to optimize pain control. You may take up to 3,000 mg per day, unless contraindicated due to allergy or liver issues. Make note that some narcotics are mixed with Tylenol, (for example, Percocet has 325 mg of Tylenol per pill) so dose accordingly.

13. You may walk as long as you are stable. We do want you out of bed as much as possible unless otherwise instructed. NO BENDING, TWISTING, OR LIFTING OVER 10 LBS FOR 4 WEEKS.

14. You will need to follow up in the clinic for a post-operative evaluation in 4 weeks. Depending on your procedure, you may be required to have an X-ray done prior to the appointment. PLEASE BRING THE CD OF YOUR IMAGES. Your X-ray script will be given to you the day of your surgery. If you do not receive it or lose it, please call for a new script.

15. You may have a drain after surgery. Do not be alarmed. The reason we place these drains is because you may have been a little "oozy" after the procedure. We place them so the extra blood and fluid can drain out of your wound easily. They are typically removed the next day by your home healthcare nurse. If you do not have home healthcare set up, call the office for an appointment to remove the drain. For questions regarding surgical scheduling, please call Chris (Scheduling Coordinator) at 727-605-1770 (EXT 1003). For any post-operative questions or concerns, please call our office at 727-605-1770. Please note that you may be sent to voicemail. We will return your call as soon as possible. If it is an emergency, please call 911. If you are calling after hours, please leave a voicemail in the general inbox and it will be forwarded to the medical team.

O: 727.605.1770

F: 727.605.1080

scheduling@premierneurosurgery.com