MINIMALLY INVASIVE
neurosurgery

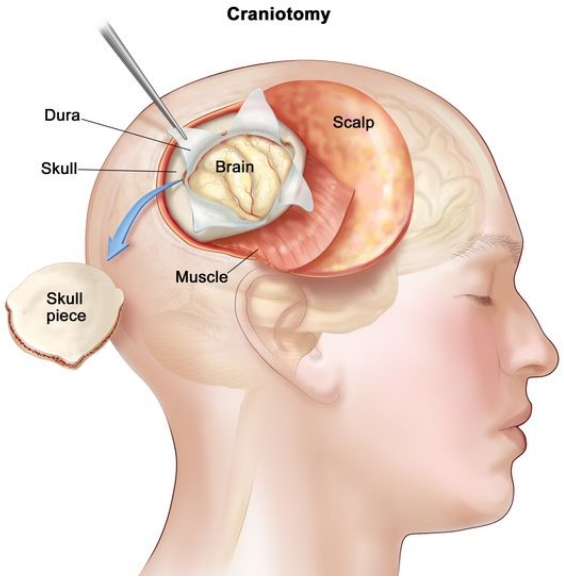
# Tumor Craniotomy, Explained

by Bishop Magehee, PA-S

## Overview

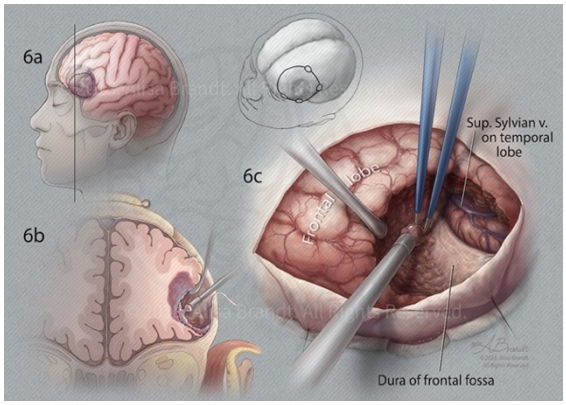
Brain tumors are an unfortunate reality for hundreds of patients all over the world. But there are various options for treating them—including radiation therapy, chemotherapy, and targeted drug therapy. The difficulty of these treatments almost needs no introduction; enduring such treatments is a challenge hundreds of patients can attest to.

But above these options, surgery stands alone as the best possible means of treatment. But to surgically remove a brain tumor, one must perform a craniotomy—which, true to its name, means the creation of a sizeable hole in the skull. Dr. Baker does this using special surgical drills, then peels back the many underlying protective layers around the brain using various specialized surgical tools. From here, he removes the tumor—an extremely delicate process—and finally, seals the site back up. Usually, this means replacing the removed bone; but if this isn't possible, an artificial plate can be used as well.




## The Details

Let's start with the Craniotomy portion (pictured above). To begin the procedure, Dr. Baker will create one or more small holes into your skull with a high-speed surgical drill. Admittedly, this probably sounds pretty dangerous! But in the right hands, it's actually quite safe. A surgical saw is then used to connect the holes and create a "window" in the skull through which brain surgery can take place. The removed piece of bone (called a "bone flap") is kept sterile while Dr. Baker operates.




Then comes the more delicate portion of the surgery—the tumor removal, pictured to the left. Before the brain's protective lining is pulled back, Dr. Baker performs an assessment of the tumor's likely location. The layer is then cut with a scalpel and scissors, exposing the brain. From here, Dr. Baker makes a small incision on the brain's surface, proceeding along the appropriate path until the

tumor is reached. Once the tumor is found, Dr. Baker carefully dissects from the normal surrounding brain tissue.

Dr. Baker will send a biopsy (a small piece of the tumor) to a pathologist for analysis. This should tell him whether the tissue is a tumor at all, and roughly what type as well. Using special microsurgical tools, Dr. Baker locates, cuts, and removes the tumor, making sure to prevent too much bleeding. Sometimes, an intracranial pressure monitoring device and/or drain (called a VP Shunt) is placed within the fluid channels in the middle of the brain. If the tumor is big and cystic, Dr. Baker may place a drain and reservoir to allow easy drainage of fluid if it builds up in the cyst after surgery.

Once the brain's protective layers are stitched back together, the bone flap is replaced and secured using small plates and screws or several small clamps. If there are significant skull defects from the drilled holes (which may cause cosmetic issues or discomfort when combing your hair), Dr. Baker will fill these and recontour the skull using acrylic or titanium—this is known as a "reconstructive cranioplasty". Finally, Dr. Baker finishes the surgery by closing up the site in two or three layers using a combination of stitches and staples.