

Awake craniotomy

An awake craniotomy is an operation performed in the same manner as a conventional craniotomy but with the patient awake during the procedure.

This is a preferred technique for operations to remove tumours close to, or involving functionally important (eloquent) regions of the brain. Performing the operation in this way allows the surgeon to test regions of the brain before they are incised or removed and also to test the patient's function continuously throughout the operation. The overall aim is to minimise the risks of the operation.

How is an awake craniotomy performed? There are different techniques but the one that's most commonly used is described here.

In the anaesthetic room a canula will be inserted through which drugs will be given to make the patient feel comfortable and relaxed. In the operating theatre, the neuronavigation system will then be used to mark out where the incision (cut) will be. A very small amount of hair will be shaved along the line of the incision before it is cleaned with antiseptic solutions. Local anaesthetic will then be given around the incision. This will sting a little for a few seconds and then go numb.

Drapes are placed around the area but the anaesthetic team can be seen and heard and the patient will be able to move arms and legs freely during the operation.

As the operation continues there will be some noises and, briefly, a drilling sound.

When the brain is exposed a procedure called cortical mapping will be performed. This involves stimulating the brain surface with a tiny electrical probe. If a motor region of the brain is stimulated it may cause twitching of a limb or the face; a sensory area will cause a tingling feeling; the speech areas will affect speech very briefly. By mapping out the important regions of the brain first, it can be protected during the operation. When the tumour is removed, functions will be tested continuously, and if anything changes the surgery can be halted. .

This does not eliminate the risks of surgery but does likely reduce them.

The following surgical procedures are quite new and the neurosurgeon may offer these.