Key messages for patients

- Please read your admission letter carefully. It is important to follow the instructions we give you about not eating or drinking or we may have to postpone or cancel your operation.

- Please read this information carefully, you and your health professional will sign it to document your consent.

- It is important that you bring the consent form with you when you are admitted for surgery. You will have an opportunity to ask any questions from the surgeon or anaesthetist when you are admitted. You may sign the consent form either before you come or when you are admitted.

- Please bring with you all of your medications and its packaging (including inhalers, injections, creams, eye drops, patches, insulin and herbal remedies), a current repeat prescription from your GP, any cards about your treatment and any information that you have been given relevant to your care in hospital, such as x rays or test results.

- Simple painkillers such as paracetamol and ibuprofen may be required after surgery. Simple bowel medication such as senna and lactulose may be required after surgery. It is suggested that you discuss with your pharmacist and have a seven day supply of these medications at home to take as you need according to the instructions.

- Take your medications as normal on the day of the procedure unless you have been specifically told not to take a medication or medications before or on the day by a member of your medical team. If you have diabetes please ask for specific individual advice to be given on your medication at your pre-operative assessment appointment.

- Please call the clinical nurse specialist on telephone number 01223 216127 if you have any questions or concerns about this procedure or your appointment.

Important things you need to know

Patient choice is an important part of your care. You have the right to change your mind at any time, even after you have given consent and the procedure has started (as long as it is safe and practical to do so). If you are having an anaesthetic you will have the opportunity to discuss this with the anaesthetist, unless the urgency of your treatment prevents this.

We will also only carry out the procedure on your consent form unless, in the opinion of the health professional responsible for your care, a further procedure is needed in order to save your life or prevent serious harm to your health. However, there may be procedures you do not wish us to carry out and these can be recorded on the consent form. We are unable to guarantee that a particular person will perform the procedure. However the person undertaking the procedure will have the relevant experience.
About cranioplasty
Cranioplasty is a surgical repair of a bony defect or deformity of a skull due to a previous operation, tumour resection or injury. To protect your brain and to restore the contour of the skull a custom-made implant will be inserted and attached to your skull. Custom-made implants are usually made from the following materials: titanium (plate or mesh), a synthetic bone substitute such as polyetherether ketone (PEEK), polymethyl methacrylate (PMMA) or porous polyethylene, and acrylic (prefabricated or moulded at the time of surgery).

Intended benefits
A cranioplasty procedure may provide any of the following benefits:
- Protection of the brain.
- Improved appearance of the skull defect and patient confidence.
- Reduced headaches.
- Improved neurological function.

Who will perform my procedure?
The procedure will be performed by a neurosurgeon.

Before your procedure
Most patients attend a pre-admission clinic, when you will be seen by the neurosurgical team and given the details of your specialist nurse. Your specialist nurse is the person to contact if you have any questions or need advice or support. At this clinic, we will ask for details of your medical history and carry out any necessary clinical examinations and investigations. Please ask us any questions about the procedure, and feel free to discuss any concerns you might have at any time. You may want to bring a relative or friend with you to this.

We will ask if you take any tablets or use any other types of medication either prescribed by a doctor or bought over the counter in a pharmacy. Please bring all your medications and any packaging (if available) with you. Please tell the ward staff about all of the medicines you use. We are especially interested in medicines that affect blood clotting, for example aspirin or warfarin. If you wish to take your medication yourself (self-medicate), please ask your nurse. Pharmacists visit the wards regularly and can help with any medicine queries.

This procedure involves the use of general and local anaesthesia. We explain about the different types of anaesthesia or sedation we may use at the end of this leaflet. You will see an anaesthetist before your procedure.

Most people who have this type of procedure will need to stay in hospital for two to three days. Your hospital doctor will discuss the length of stay with you.
On the day of surgery or occasionally the day before you will be admitted to one of our neurosciences wards. You will be asked to telephone the admission office on telephone: 01223 217100 to check that there is a bed available and where to go.

Please do not eat or drink from midnight when you are having your operation the next day.

Hair removal before an operation
On the day of surgery the healthcare team will use an electric hair clipper with a single-use disposable head to remove any hair where the incision is to be made. Please do not shave the hair yourself or use a razor to remove hair, as this can increase the risk of infection. Your healthcare team will be happy to discuss this with you.

Blood loss
During surgery, you may lose blood. If you lose a considerable amount of blood your doctor may want to replace the loss with a blood transfusion, as significant blood loss can cause you harm. The blood transfusion can involve giving you other blood components such as plasma and platelets which are necessary for blood clotting. Your doctor will only give you a transfusion of blood or blood components during surgery, or recommend for you to have a transfusion after surgery, if you need it.

Compared to other everyday risks the likelihood of getting a serious side effect from a transfusion of blood or blood component is very low. Your doctor can explain to you the benefits and risks from a blood transfusion. Your doctor can also give you information about whether there are suitable alternatives to blood transfusion for your treatment. There is a patient information leaflet for blood transfusion available for you to read if you would like it.

During the cranioplasty
You will be taken to neurosurgery theatres on your hospital bed. You will be given a general anaesthetic and when you are asleep you will be positioned to allow for optimal access to the bone defect. The area where the incision is to be made is then shaved and prepared with antiseptic.

The surgeon then injects a local anaesthetic and makes an incision to access the skull bones. The size and shape of the opening will depend on the size and position of the defect, but usually follows a previous surgical scar. The custom-made implant will then be positioned in place and secured to the surrounding skull bones with screws, plates or both.

With the implant in place the surgeon will then close the scalp incision using clips (skin staples) or sutures and cover with a dressing. A small suction drain is sometimes left in situ to help remove any excess fluid and is usually removed a few days later.

The time this all takes depends upon the complexity of the procedure but you will be away from the ward for several hours.
After the cranioplasty

Once your surgery is completed you will usually be transferred to the recovery ward where you will be looked after by specially trained nurses, under the direction of your anaesthetist.

The nurses will monitor you closely until the effects of any general anaesthetic have adequately worn off and you are conscious. They will monitor your heart rate, blood pressure and oxygen levels too. You may be given oxygen via a facemask, fluids via your drip and appropriate pain relief until you are comfortable enough to return to your ward.

You may also have a tube in the wrist called an arterial line, a tube in the neck called a central line and a urinary catheter.

After certain major operations you may be transferred to the intensive care unit (ICU/ITU), high dependency unit (HDU), intermediate dependency area (IDA) or fast track/overnight intensive recovery (OIR). These are areas where you will be monitored much more closely because of the nature of your operation or because of certain pre-existing health problems that you may have. If your surgeon or anaesthetist believes you should go to one of these areas after your operation, they will tell you and explain what you should expect.

If there is not a bed in the necessary unit on the day of your operation, your operation may be postponed as it is important that you have the correct level of care after major surgery.

**Eating and drinking.** You may eat and drink as soon as you feel able. It is recommended you start with clear fluids and move to light food after a few hours.

**Getting about after the procedure.** After this procedure you are able to get up as soon as you feel well enough. Often, this is within a few hours of returning to the ward. This helps improve your recovery and reduces the risk of certain complications. If you have any mobility problems, we can arrange nursing or physiotherapy help.

Your wound will feel strange for a few weeks but pain is not usually a problem. The scar and skin may look bruised and swollen. The scar will fade to a thin pale line in three to six months. Any shaved hair will normally re-grow.

**Leaving hospital.** Generally most people who have had this operation will be able to leave hospital after one to two days. However, the actual time that you stay in hospital will depend on your general health, how quickly you are recovering from the procedure and your doctor’s opinion.

**Resuming normal activities including work.**

**Exercise & work:** You may be restricted by your initial condition or injury; gradual gentle exercise combined with rest is recommended, to provide a gradual return to normal duties.
If you intend to return to work it is best to discuss this with your neurosurgeon and your occupational health department, if applicable.

**Contact sport:** You are advised to avoid contact sports such as boxing or rugby for at least three months.

**Driving:** Your ability to drive may be restricted by the DVLA following your initial condition or injury. Detailed information can be found from the DVLA at www.direct.gov.uk/driverhealth. For further information please speak to your doctor or specialist nurse.

**Flying:** You are advised to avoid flying for six weeks after your surgery.

**Special measures after the procedure:**

**Surgical clips / stitches:** The clips or sutures will need to stay in for approximately 10 to 14 days. We can remove any clips in clinic if required or you can make an appointment for this with your GP.

**Hair washing:** You should not wash your hair whilst the clips are in place but it is safe to do so gently, the day after the clips are removed. It is best to avoid the use of hair products, hair dyes and perms for one month after the wound has completely healed.

**Wound leaks / infections:** If you experience any problems with your wound, including superficial infections treated by your GP, please contact your specialist nurse immediately.

**Headaches / Nausea / Vomiting:** If you experience any of these symptoms please contact your specialist nurse for advice.

We will give you further information about any special measures you need to take after the procedure. We will also give you information about things to watch out for that might be early signs of problems (e.g. infection).

**Check-ups and results:** Following discharge you will be sent an outpatient clinic appointment so that we can check your progress and discuss any further treatment. The appointment is usually scheduled for approximately six to eight weeks after discharge.

**Significant, unavoidable or frequently occurring risks of this procedure**

There are risks of surgery in general and risks associated specifically with cranioplasty. The risks of surgery in general include problems with the wound (for example infection), problems with breathing (such as a chest infection) and blood clots, for example in the legs (also known as deep venous thrombosis or DVT) or less frequently the lungs (also known as pulmonary embolism or PE). Some of the possible problems related specifically to cranioplasty are listed below.
These are very general figures and your surgeon will discuss any risks specific to you.

- Infection / wound problems (8-10%)
- Pain
- Swelling
- Blood or fluid collection under plate, requiring further operation
- Need to remove plate (<10%)
- Need for further course of antibiotics
- Seizures
- Cerebrospinal fluid (CSF) circulation problems, which may require additional investigation or operation

If you do wake up with a new neurological deficit then remember that most patients with a new neurological deficit following this procedure will improve over a few days and weeks. Some will resolve completely.

**Alternative procedures that are available**

An alternative to this surgery is a decision not to have surgery. We will discuss with you the implications of deciding not to have surgery.

**Information and support**

If you have any questions or anxieties, please feel free to ask the specialist nurse or any other member of staff at any time, even after discharge. The specialist nurse can be contacted directly on 01223 216127 or via switchboard (01223 245151) on bleep 154-174.

- Headway UK – a charity that supports people affected by a brain injury. They operate a network of local groups and branches across the UK and provide a free information helpline. Helpline 0808 800 2244, website [www.headway.org.uk](http://www.headway.org.uk), email [helpline@headway.org.uk](mailto:helpline@headway.org.uk)
- Brain and Spine Foundation – tailored information and specialist support for anyone affected by a neurological problem. The helpline is staffed by neuroscience nurses. Tel. 0207 793 5900, Fax 0207 793 5939, Helpline 0808 808 1000, website [www.brainandspine.org.uk](http://www.brainandspine.org.uk), email [info@brainandspine.org.uk](mailto:info@brainandspine.org.uk)
- Stroke Association – provides information and support for anyone affected by a stroke. Helpline 0303 3033 100, email [helpline@stroke.org.uk](mailto:helpline@stroke.org.uk)

**Anaesthesia**

Anaesthesia means, ‘loss of sensation’. There are three types of anaesthesia: general, regional and local. **The type of anaesthesia chosen by your anaesthetist depends on the nature of your surgery as well as your health and fitness.** Sometimes different types of anaesthesia are used together.
Before your operation
Before your operation you will meet an anaesthetist who will discuss with you the most appropriate type of anaesthetic for your operation and pain relief after your surgery. To inform this decision, he/she will need to know about:

- your general health, including previous and current health problems
- whether you or anyone in your family has had problems with anaesthetics
- any medicines or medications you use
- whether you smoke
- whether you have had any abnormal reactions to any medications or have any other allergies
- your teeth, whether you wear dentures, or have caps or crowns.

Your anaesthetist may need to listen to your heart and lungs, ask you to open your mouth and move your neck and will review your test results.

Pre-medication
You may be prescribed a ‘premed’ prior to your operation. This is a medication or combination of medications which may be used to make you sleepy and relaxed before surgery, provide pain relief, reduce the risk of you being sick, or have effects specific for the procedure that you are going to have or for any medical conditions that you may have. Not all patients will be given a premed or will require one and the anaesthetist will often use medications in the operating theatre to produce the same effects.

Moving to the operating room or theatre
You will usually change into a gown before your operation and we will take you to the operating suite. When you arrive in the theatre or anaesthetic room and before starting your anaesthesia, the medical team will perform a check of your name, personal details and confirm the operation you are expecting.

Once that is complete, monitoring devices may be attached to you, such as a blood pressure cuff, heart monitor (ECG) and a monitor to check your oxygen levels (a pulse oximeter). An intravenous line (drip) may be inserted. If a regional anaesthetic is going to be performed, this may be performed at this stage. If you are to have a general anaesthetic, you may be asked to breathe oxygen through a face mask.

General anaesthesia
During general anaesthesia you are put into a state of unconsciousness and you will be unaware of anything during the time of your operation. Your anaesthetist achieves this by giving you a combination of medications.

While you are unconscious and unaware your anaesthetist remains with you at all times. He or she monitors your condition and administers the right amount of anaesthetic medications to maintain you at the correct level of unconsciousness for the period of the surgery.
Your anaesthetist will be monitoring such factors as heart rate, blood pressure, heart rhythm, body temperature and breathing. He or she will also constantly watch your need for fluid or blood replacement.

**Regional anaesthesia**

Regional anaesthesia includes epidurals, spinals, caudals or local anaesthetic blocks of the nerves to the limbs or other areas of the body. Local anaesthetic is injected near to nerves, numbing the relevant area and possibly making the affected part of the body difficult or impossible to move for a period of time. Regional anaesthesia may be performed as the sole anaesthetic for your operation, with or without sedation, or with a general anaesthetic. Regional anaesthesia may also be used to provide pain relief after your surgery for hours or even days. Your anaesthetist will discuss the procedure, benefits and risks with you and, if you are to have a general anaesthetic as well, whether the regional anaesthesia will be performed before you are given the general anaesthetic.

**Local anaesthesia**

In local anaesthesia the local anaesthetic medication is injected into the skin and tissues at the site of the operation. The area of numbness will be restricted. Some sensation of pressure may be present, but there should be no pain. Local anaesthesia is used for minor operations such as stitching a cut, but may also be injected around the surgical site to help with pain relief. Usually a local anaesthetic will be given by the doctor doing the operation.

**Sedation**

Sedation is the use of small amounts of anaesthetic or similar medications to produce a ‘sleepy-like’ state. Sedation may be used as well as a local or regional anaesthetic. The anaesthesia prevents you from feeling pain and the sedation makes you drowsy. Sedation also makes you physically and mentally relaxed during an investigation or procedure which may be unpleasant or painful (such as an endoscopy) but where your co-operation is needed. You may remember a little about what happened but often you will remember nothing. Sedation may be used by other professionals as well as anaesthetists.

**What will I feel like afterwards?**

How you will feel will depend on the type of anaesthetic and operation you have had, how much pain relieving medicine you need and your general health.

Most people will feel fine after their operation. Some people may feel dizzy, sick or have general aches and pains. Others may experience some blurred vision, drowsiness, a sore throat, headache or breathing difficulties.

You may have fewer of these effects after local or regional anaesthesia although when the effects of the anaesthesia wear off you may need pain relieving medicines.
What are the risks of anaesthesia?

In modern anaesthesia, serious problems are uncommon. Risks cannot be removed completely, but modern equipment, training and medications have made it a much safer procedure in recent years. The risk to you as an individual will depend on whether you have any other illness, personal factors (such as smoking or being overweight) or surgery which is complicated, long or performed in an emergency.

**Very common (1 in 10 people) and common side effects (1 in 100 people)**
- Feeling sick and vomiting after surgery
- Sore throat
- Dizziness, blurred vision
- Headache
- Bladder problems
- Damage to lips or tongue (usually minor)
- Itching
- Aches, pains and backache
- Pain during injection of medications
- Bruising and soreness
- Confusion or memory loss

**Uncommon side effects and complications (1 in 1000 people)**
- Chest infection
- Muscle pains
- Slow breathing (depressed respiration)
- Damage to teeth
- An existing medical condition getting worse
- Awareness (becoming conscious during your operation)

**Rare (1 in 10,000 people) and very rare (1 in 100,000 people) complications**
- Damage to the eyes
- Heart attack or stroke
- Serious allergy to medications
- Nerve damage
- Death
- Equipment failure

Deaths caused by anaesthesia are very rare. There are probably about five deaths for every million anaesthetics in the UK.

For more information about anaesthesia, please visit the Royal College of Anaesthetists’ website: [www.rcoa.ac.uk](http://www.rcoa.ac.uk)
Information about important questions on the consent form

1 Creutzfeldt Jakob Disease (‘CJD’)
We must take special measures with hospital instruments if there is a possibility you have been at risk of CJD or variant CJD disease. We therefore ask all patients undergoing any surgical procedure if they have been told that they are at increased risk of either of these forms of CJD. This helps prevent the spread of CJD to the wider public. A positive answer will not stop your procedure taking place, but enables us to plan your operation to minimise any risk of transmission to other patients.

2 Photography, Audio or Visual Recordings
As a leading teaching hospital we take great pride in our research and staff training. We ask for your permission to use images and recordings for your diagnosis and treatment; they will form part of your medical record. We also ask for your permission to use these images for audit and in training medical and other healthcare staff and UK medical students; you do not have to agree and if you prefer not to, this will not affect the care and treatment we provide. We will ask for your separate written permission to use any images or recordings in publications or research.

3 Students in training
Training doctors and other health professionals is essential to the NHS. Your treatment may provide an important opportunity for such training, where necessary under the careful supervision of a registered professional. You may, however, prefer not to take part in the formal training of medical and other students without this affecting your care and treatment.

4 Use of Tissue
As a leading biomedical research centre and teaching hospital, we may be able to use tissue not needed for your treatment or diagnosis to carry out research, for quality control or to train medical staff for the future. Any such research, or storage or disposal of tissue, will be carried out in accordance with ethical, legal and professional standards. In order to carry out such research we need your consent. Any research will only be carried out if it has received ethical approval from a Research Ethics Committee. You do not have to agree and if you prefer not to, this will not in any way affect the care and treatment we provide. The leaflet ‘Donating tissue or cells for research’ gives more detailed information. Please ask for a copy.

If you wish to withdraw your consent on the use of tissue (including blood) for research, please contact our Patient Advice and Liaison Service (PALS), on 01223 216756.
Privacy & dignity
Same sex bays and bathrooms are offered in all wards except critical care and theatre recovery areas where the use of high-tech equipment and/or specialist one to one care is required.

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:
If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 256998, or email: interpreting@addenbrookes.nhs.uk For Large Print information please contact the patient information team: patient.info@addenbrookes.nhs.uk.

Document history
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Consent Form

Patient agreement to investigation or treatment for neurosurgery, spinal surgery or vitreoretinal surgery

I have interpreted the information to the best of my ability, and in a way in which I believe the patient can understand:

Signed (Interpreter): ......................................................... Date: .............

Name (PRINT): ........................................................................

Or, please note the language line reference ID number:

Interpreter's statement (if appropriate)
To improve cosmetic appearance and brain protection. In some cases improvement of headaches and / or neurological function has been documented.

Risks: infection and wound problems, which may require a course of antibiotics or removal of plate, seizures, collection of fluid or blood underneath the plate (which may need drainage), damage to the brain, transient or permanent neurological deficits, impairment of cerebrospinal fluid circulation with need for further investigations or treatment.

c) what the procedure or treatment is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient:

d) any extra procedures that might become necessary during the procedure such as:
   - Blood transfusion
   - Other procedure (please state)

e) Was the patient born after 1 January 1997?  
   - Yes
   - No

The following information leaflet has been provided: Cranioplasty

Version reference and date: V1, Document ID: 101221, July 2019

Signed (Health professional): ......................................................... Date: DD/MM/YYYY

Name (PRINT): ................................................................. Time (24hr): H.H.:M.M.

Designation: ......................................................... Contact/bleep no: ........................................
Consent of patient/person with parental responsibility

I confirm that the risks, benefits and alternatives of this procedure have been discussed with me and that my questions have been answered to my satisfaction and understanding.

Important: please read the patient information on ‘Consent’ and then put a tick in the relevant boxes for the following questions:

1 Creutzfeldt Jakob disease (CJD)
   a) Have you ever been notified that you are at risk of CJD or variant CJD for public health purposes? If yes, please inform your health professional. □ Yes □ No

   b) Have you had a history of CJD or other prion disease in your family? □ Yes □ No

   c) Have you ever received growth hormone or gonadotrophin treatment? If yes, please give details below:
      Please specify:
      (i) whether the hormone was derived from human pituitary glands □ Yes □ No

      (ii) the year of treatment

      (iii) whether the treatment was received in the UK or another country □ UK □ Other

   d) Have you ever had surgery on your brain, eye or spinal cord? If yes, please give details below:

   e) Since 1980, have you had any transfusions of blood or blood components (red cells, plasma, cryoprecipitate or platelets)? If yes, please answer questions below:
      Have you either:
      (i) received more than 50 units of blood or blood components, □ Yes □ No

      or

      (ii) received blood or blood components on more than 20 occasions □ Yes □ No

      Where possible, please provide the names of all the hospitals where you received blood or blood components:

In the case of a positive reply to any CJD question, staff should immediately inform Infection Control on ext 3497 (bleep numbers 152-198 or 151-803) and the theatre co-ordinator (24 hour bleep number 152-585); out of hours contact the on call medical microbiologist via the hospital contact centre.

2 Photography, Audio or Visual Recording
   a) I agree to the use of any of the above type of recordings for the purpose of diagnosis and treatment. □ Yes □ No

   b) I agree to unidentified versions of any of the above recordings being used for audit and medical teaching in a healthcare setting. □ Yes □ No

3 Medical Training
   I agree to the involvement of medical and other students as part of their formal training. □ Yes □ No
4 Use of Tissue

a) I agree that tissue (including blood) not needed for my own diagnosis or treatment can be used and stored for ethically approved research which may include ethically approved genetic research.

☐ Yes  ☐ No

b) Where additional clinical information is needed for the purposes of ethically approved research, I agree that relevant sections of my medical record may be looked at by researchers or by relevant regulatory authorities. I give permission for these individuals to have access to my records.

☐ Yes  ☐ No

I have listed below any procedures that I do not wish to be carried out without further discussion.

I have read and understood the Patient Information entitled Consent and the above additional information. I agree to the procedure or treatment.

Signed (Patient): ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Name of patient (PRINT): .................................................................

If signing for a child or young person; delete if not applicable.
I confirm I am a person with parental responsibility for the patient named on this form.

Signed: ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Relationship to patient:

If the patient is unable to sign but has indicated his/her consent, a witness should sign below.

Signed (Witness): ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Name of witness (PRINT):

Address:

D Confirmation of consent

Confirmation of consent (where the procedure/treatment has been discussed in advance)
On behalf of the team treating the patient, I have confirmed with the patient that she/he has no further questions and wishes the treatment/procedure to go ahead.

Signed (Health professional): ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Name (PRINT): ................................................................. Job title:

Please initial to confirm all sections have been completed:

E Withdrawal of patient consent

☐ The patient has withdrawn consent (ask patient to sign and date here)

Signed (Patient): ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Signed (Health professional): ................................................................. Date: ...D.P./M.M./Y.Y.Y.Y...

Name (PRINT): ................................................................. Job title: