

Craniofacial Surgery

Information for parents and families

Central & Southern New Zealand Craniofacial Program

The Craniofacial program is jointly run by the Plastic Surgery and Neurosurgery services at Christchurch, Wellington and Hutt Hospitals. The service cares for children requiring craniofacial surgery in the South Island and Lower North Island. The service sees approximately 120 new patients each year.

The Craniofacial Program is a national centre of excellence with a strong international reputation. It has an excellent safety record. Members of the team are involved with teaching craniofacial surgery in less developed countries.

Purpose of Craniofacial Surgery

Craniofacial surgery in children is performed for birth defects of the skull, eye sockets and face. It is also performed for growth disorders, tumours and accidents involving this region. Details of some of the conditions treated can be seen on the craniofacial program website www.craniofacialsurgery.co.nz

Surgery is performed to maximize function, relieve brain compression if this exists and improve appearance and self esteem as children grow.

Craniofacial clinics

Children are assessed by key members of the team in a craniofacial clinic. Xrays, CT scans, MRI scans and other tests are ordered if necessary. Photographs are usually taken for the child's medical record. There will be an in-depth discussion about the rationale for surgery, what to expect during and after surgery, and potential risks and complications.

Clinics are held in Hastings, Wellington, Christchurch and Dunedin throughout the year. Details of travel assistance for key family members to attend clinics and hospital stays can be found at....

Preparation for surgery

For most craniofacial surgery, the child is admitted the day before surgery so he/she can be assessed by the anaesthetic team, have other investigations performed as necessary and to enable the family/caregivers to ask any further questions and so enable the consent process for the operation to be finalised and signed. The child and family/caregivers also then have the opportunity to meet the nursing staff and be orientated to key parts of the hospital.

One parent will be able to stay in the room with the child during the hospital admission. Assistance with nearby accommodation for other key family members is available (need details)

The child cannot have solid food for 6 hours prior to the procedure. Clear fluids may be given closer to the time of surgery after consultation with the anaesthetist.

Surgical Procedure

A detailed explanation of the procedure will be given as part of the informed consent process. A parent or caregiver is required to sign the consent for surgery.

Once the child is anaesthetized in the operating theatre the anaesthetic team attaches monitoring equipment and insert drips to give medicine, fluid and blood if needed.

A local anaesthetic is injected into the scalp and antibiotics are given prior to the start of surgery. A small strip of hair along the planned incision line is usually shaved to help keep the area clean after surgery.

An incision is made in the scalp, which is then peeled back to expose the bone that will be operated on. In some cases, springs will be inserted into the bone. In other instances, the bones are removed from the skull, safely reshaped away from the child, and then fixed back in the new position with dissolving plates. If dissolving plates are used, they may take up to 2 years to disappear and can be felt under the skin during this time.

Dissolving stitches are used to close the scalp incision. The scalp is then washed and shampooed. A bandage may be applied around the head in some cases for a few days.

Risks of surgery

This discussion about risks is general and your surgical team will discuss specific risks with you.

Scar: A permanent scar is created every time the skin or scalp is cut. Sometimes this can spread or become noticeable. About 2% of scars can become thick and red (hypertrophic scar). Most scars are wavy to help hide them when the hair is short or wet. A small number of scars may require revision later in life

Infection: Severe infection of the bone is rare in craniofacial surgery (<1%). The risk is higher for procedures where the operated bone connects with the nose cavity. Minor skin infections can occur and settle quickly with antibiotics. An infection of a spring may necessitate its removal earlier than planned. Infection

of the skull bone/s can be treated with antibiotics but it may also require removal of the infected bone.

Blood transfusion:

Blood is only given if it is felt that this is necessary for the child's health. The risks of blood transfusion can be found on the NZ transfusion service website www.nzblood.co.nz.

In summary:

Risk of minor allergic reaction 1-2%

Risk of severe bacterial infection 1 in 100,000

Risk of Hepatitis B 1 in 100,000 (approximately 1 case in NZ each year)

Risk of Hepatitis C or HIV 1 in 1,000,000 (no case has yet occurred in NZ)

Skull or soft tissue irregularities: Sometimes the skull can feel "lumpy" in places where surgery has occurred. A full thickness hole in the skull is also possible. This is more likely in older children because of the slower remodeling potential of the skull. If this is noticeable or causes problems a further procedure may be required in a small number of children (much less than 5% of the cases we do). This is usually minor surface contouring with a burr or filling in cavities with a bone paste.

Dural tear: In a small number of cases the outer membrane over the brain (dura) may be thin and leak cerebrospinal fluid (CSF). When this is noticed, the dural defect is usually easily repaired.

Rare: Many rare but serious complications are possible including major reactions to the anaesthetic, neurological injury and even death. These risks are about 1 in 100,000 and have not occurred in any craniofacial cases performed by our team.

In considering complications, it is important to consider the complications of *not* performing the operation i.e. consequences if the procedure is not performed.

After surgery

The child is transferred to an area where there is close nursing supervision. This may be a high dependency unit.

Pain relief: Pain after surgery is very manageable. A morphine infusion is often given for pain relief for a couple of days. During the infusion the child will be connected to heart trace monitors. Later a combination of paracetamol and a non-steroidal anti-inflammatory (eg Brufen) are sufficient.

"Neuro obs": The nurse will perform neurological observations very frequently in the early postoperative period. This involves checking the pupils, movements and responses to voice. Breathing, heart rate, temperature and blood pressure is also monitored. As the child makes satisfactory progress postoperatively then the frequency of these observations is gradually and appropriately reduced and then ceased.

Swelling: Swelling after surgery is usually most noticeable about Day 2. The eyes may be completely shut by swelling but the swelling always subsides over several days and children manage this quite well.

Washing: The scalp can be gently washed starting from 48 hours after surgery using a warm flannel and soapy water. The wound should not be rubbed but may be gently dabbed. Any scab should not be picked at, but allowed to gently separate over time. This may take several weeks. The stitches dissolve but may be visible for 6 weeks.

Head contact: It is ok to pick up and cuddle your child after surgery. Children are usually comforted by this contact. It is OK to gently touch their head but heavy pressure should be avoided for 6 weeks. For mobile children, steps, ladders, trampolines etc should be avoided for 3 months. A helmet is not necessary.

Length of hospital stay: This is often 4-5 days but may be longer for children who live a very long distance from the hospital and shorter for less invasive procedures such as springs. At discharge children should be eating and drinking normally and able to open their eyes as the swelling has settled.

Clinic: Children are followed up by a key member of the surgical team at the craniofacial clinic as needed. This will often be annually until brain growth has stabilized. There is a small chance that minor adjustment surgery may be needed several years later if irregularities appear with growth. The skull should be well healed after 3 months but helmets should be worn for high impact activities such as cycling and skiing just as normal children would.

Further information about specific craniofacial conditions and surgery can be found at www.craniofacialsurgery.