

The Management of Cleft Lip & Palate

at

The Children's University Hospital,
Temple Street



A booklet for parents prepared by The Cleft Lip & Palate Team
in The Children's University Hospital, Temple Street.



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INTRODUCTION

This booklet is directed at the parents of cleft lip and palate children. Its function is to explain the cleft deformity and the stages in treatment required to correct it. It is hoped it will provide the much needed information in the initial stages regarding feeding and preparing for the first operation, while also demonstrating the plan of treatment in the following years.

The management of the cleft lip and palate deformity revolves around team work, the Plastic Surgeon, the Speech and Language Therapist, the Ear, Nose & Throat Surgeon, the Orthodontist and the Oral (Maxillo-Facial) Surgeon. Your own dentist, an audiologist, a genetic expert, Psychologists and many others may all have roles to play. The Cleft Lip & Palate Association provides a contact point for parents and patients thereby allowing a free exchange of views regarding progress and possible difficulties.

It must be stressed that cleft lip and palate is a variable condition with a spectrum of severity ranging from a minor lip deformity or a cleft of the soft palate only, to a major cleft affecting the lip, nose, palate and even the future growth of the face in its middle one-third. Obviously treatment will vary according to the degree of cleft and all that you read in the following pages may not apply to you and your child. Treatment may also vary from centre to centre and this booklet reflects the views of the cleft lip and palate unit based in The Children's University Hospital, Temple Street, Dublin 1.

Since the year 2000, the Cleft Units of The Children's University Hospital, Temple Street and Our Lady's Hospital for Sick Children, Crumlin have increased their exchange of information and techniques as well as introducing the **Cleft Database**. Together we refer to the two Units as **The Dublin Cleft Centre** and have as a mission statement the following:

“The Dublin Cleft Centre comprises of a multi-disciplinary group from the Dublin Cleft Teams working to develop and implement standardised best practice guidelines and care in cleft management”.



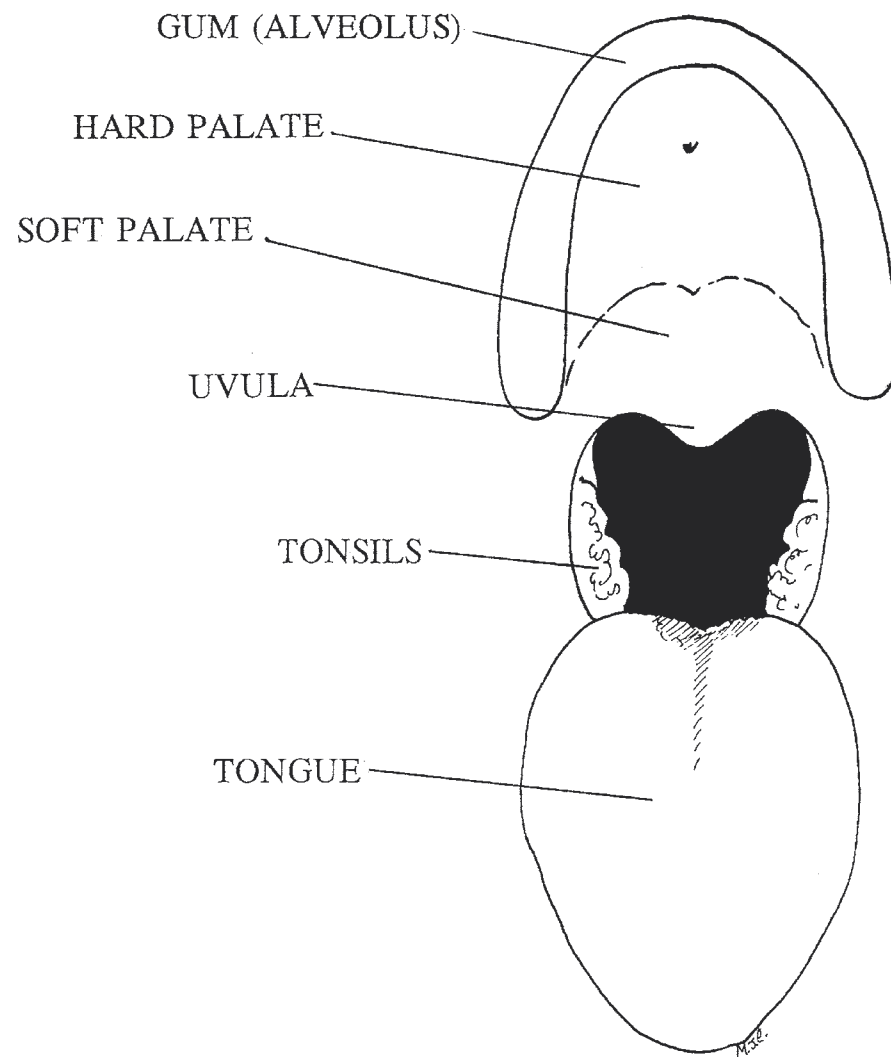
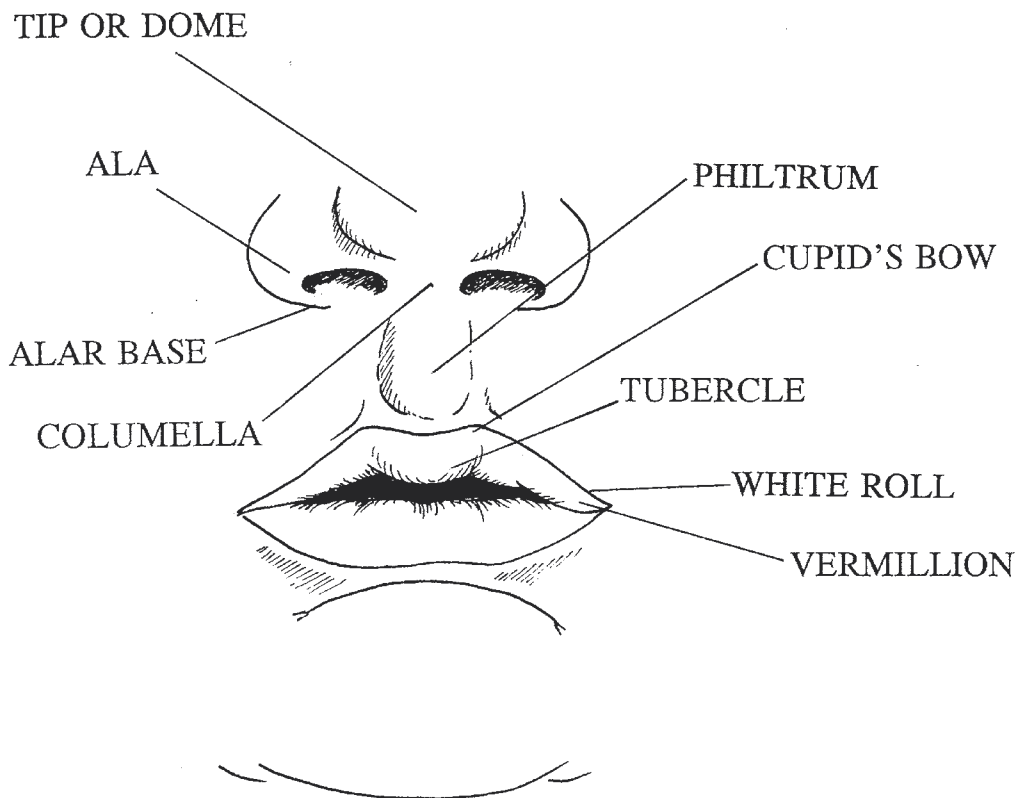
THE NORMAL LIP, PALATE & NOSE

The accompanying diagrams demonstrate the areas usually discussed during cleft management. These terms may seem strange but they will help you understand what is being discussed by specialists at clinics when you attend.

The lip has three layers, skin, muscle and the lining inside the mouth (mucosa). The lip has several anatomical features which will be often referred to by the Surgeon when talking about planning and the result of surgery.

The palate consists of a hard palate which is the solid base for the teeth of the upper jaw, and a soft palate which is muscular and mobile. It is the soft palate which is so important in both speech and in preventing the escape of air and food from the mouth into the nose. The uvula hangs down from the soft palate and helps the palate form a good seal between the mouth and nose. Both the soft and hard palates are made up of three layers. There is an oral (mouth) layer, a bone and muscle layer and a nasal (nose) layer. The hard palate has bone in the middle layer and the soft palate has muscle in the middle layer. There are five different groups of muscles all of which are involved in speech and all of which are affected by a cleft palate.

The nose is a complex structure consisting of skin and cartilage (gristle) on a bony framework. The ala is often collapsed on the side of a cleft lip and the columella is often pulled to the opposite side of the cleft. The septum (the gristle separating the two nostrils inside the nose) is often displaced into one or other nostril causing difficulty in breathing on that side.





CLEFT LIP & PALATE

Types of Cleft and Problems Faced

The incidence of cleft lip and palate is approximately 1 in 800 live births in Ireland. The commonest form presenting to our unit is a cleft of the palate alone. The next most common form is a one sided complete cleft of the lip and palate and the rarest form is a bilateral (double) cleft lip and palate.

The Lip:

The following diagrams show:

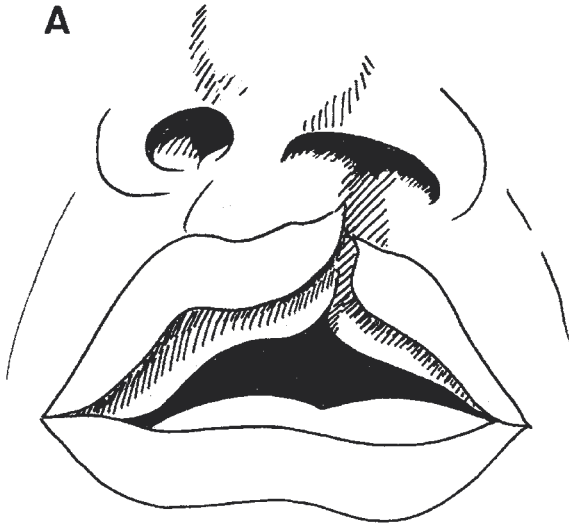
- A An incomplete cleft lip** which often affects the shape of the nostril and is sometimes associated with a notch in the gum (alveolus). A baby with this will require repair of the lip and may later need surgery to improve the nose and orthodontics when the adult teeth appear.

- B A complete cleft lip** which will involve the palate and the lip. This baby will require a lip repair, a palate repair, a bone graft to the gum (alveolar bone grafting) and possible late revisions of the lip and nose to improve appearance and even surgery for speech improvement. The full team involving Speech and Language Therapists, Ear Specialist, Orthodontist and Maxillo-Facial Surgeon will be required.

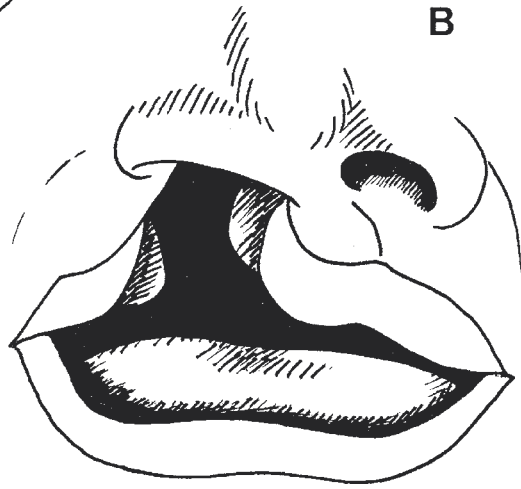
- C A bilateral complete cleft lip and palate** is a major defect but one for which much can now be done. Only very rarely is the palate not involved. Usually the middle section of the lip, being unattached at both sides, becomes very prominent and the appearance is upsetting for all concerned. However, once the lip is repaired this appearance is much improved. Sometimes if this middle section (the premaxilla) is too prominent to allow the lip repair it may be necessary to use special braces and tapes to mould it into a more favourable position. This is done by an orthodontist and is called **presurgical orthopedics**. The principles of treatment are otherwise as for the complete one sided cleft lip (B above).



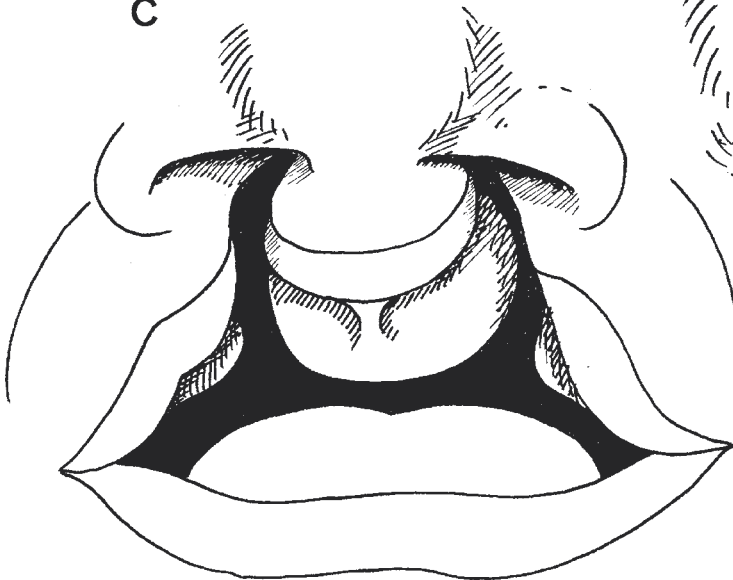
A



B



C





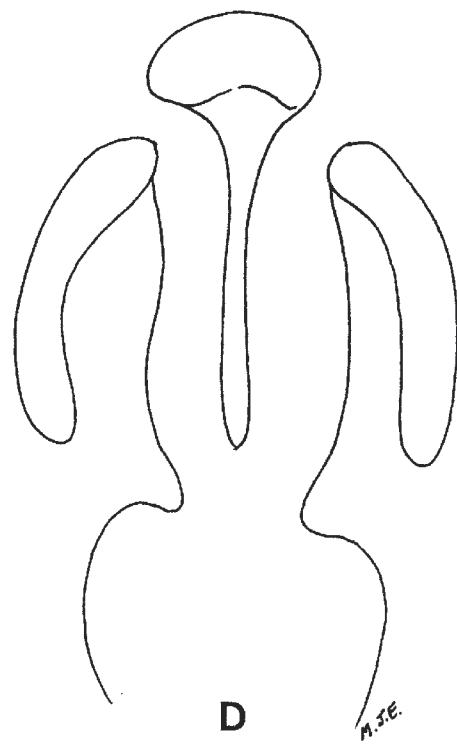
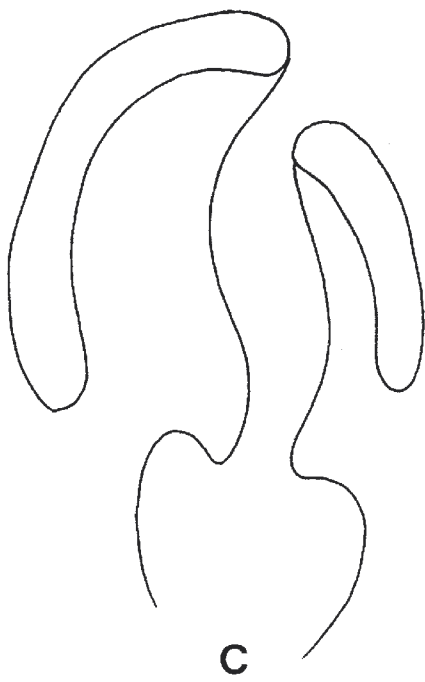
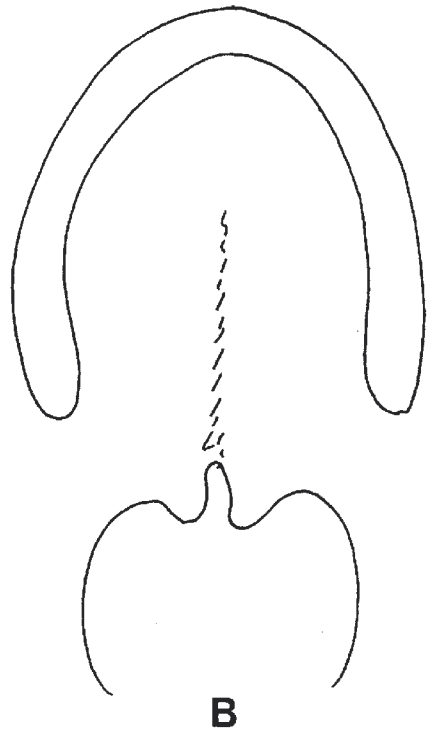
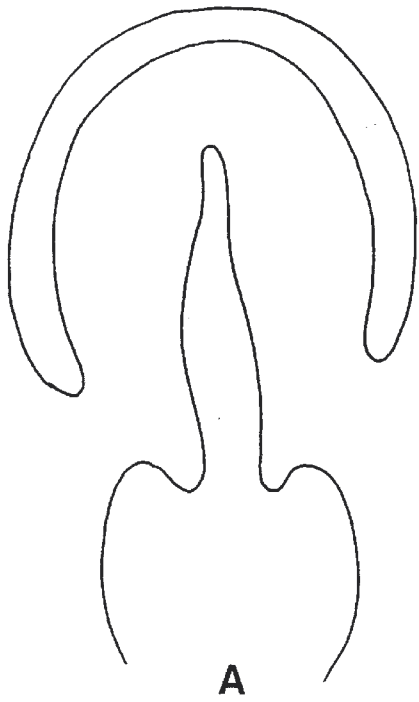
The Palate:

The palate can be cleft alone or associated with a cleft lip. If only the palate is affected it is known as a **secondary cleft** or incomplete cleft palate (A in the palate diagram). In its most minor form only the uvula is cleft, but even this leads to an abnormality in the muscles in the palate and, if the speech is affected, a repair will be required. This type is called a **submucous cleft palate** (B in the palate diagram).

A **complete cleft palate** involves a cleft of the palate and the gum (alveolus) with the outer part of the alveolus tending to collapse inwards. This is why orthodontic treatment is required later and an alveolar bone graft is used to bridge the gap in the gum (C in the palate diagram).

A **complete bilateral cleft palate (D)** leaves the central part of the gum unattached, allowing it to grow forwards. This is the premaxilla and carries the upper four central teeth. A double bone graft at the time the permanent teeth are erupting is required for this type of cleft.

The sequence for repair of the lip, palate, gum and nose follows the next section.





THE EFFECTS OF A CLEFT LIP AND PALATE

The following areas can be affected by the cleft lip and/or palate and, in some instances, by the treatment necessary. They are:

Feeding
Appearance
Speech
Hearing
Dentition
Facial Growth

Feeding:

This is dealt with in the following sections. It is easy to understand why there may be problems with a cleft palate which leaves a large opening between the mouth and nose. Less easily understood are the problems caused by a cleft lip by itself, but even this can interfere with efficient sucking in both breast and bottle feeding.

Appearance:

The initial appearance of any cleft, no matter how minor, is a shock to the whole family. This initial shock and revulsion is not abnormal and at this stage it is helpful to talk to other parents who can be contacted through the Cleft Lip & Palate Association. The Cleft Team are also available to answer as many queries as possible.

Shock is replaced by denial, by anger and often grief. These are normal reactions and parents should concentrate on two main facts, firstly, the joy of a new child and secondly the treatment available to give that child the best chance for a normal life.

Speech:

Articulation (the ability to make speech sounds) is affected by abnormalities of lip, tongue or palatal movement; orthodontic treatment may also affect clarity. The cleft palate will cause air to escape from the mouth in to the nose during speech and will therefore give rise to nasal escape and hypernasality (a nasal tone). Compensatory efforts can cause abnormal facial movements (grimacing) and peculiar sounds in the throat. These are all assessed by the speech and language therapists. A more detailed section is further in the booklet.

**Hearing:**

Abnormalities of the muscles in the cleft palate affect the eustachian tube which in turn can cause poor drainage of the middle ear and hearing problems. This is dealt with in detail in a later section.

Dentition:

A cleft lip by itself does not affect the teeth but if the gum is notched or the palate cleft this can cause dental abnormalities. The repair of the palate may unavoidably affect future dental growth but as techniques change this has become less likely. It is essential that the patient looks after their teeth and pays regular visits to the family dentist.

Facial Growth:

In a severe cleft the mid part of the face may fail to grow satisfactorily and result in a “dished in” appearance, or a very prominent lower jaw in relation to the upper jaw. Problems with bite may result. These will be looked after by the orthodontist and the maxillo-facial surgeon.



TIMING OF SURGERY FOR CLEFT LIP & PALATE

The Lip Repair:

The surgical repair of the cleft lip is carried out at about three months of age when the baby is about 10 lbs in weight. The old rule of 10 lbs weight, 10 weeks old, and a haemoglobin of 10 grms ("blood count") is often true still, although occasionally the repair may be done in the first few weeks of life.

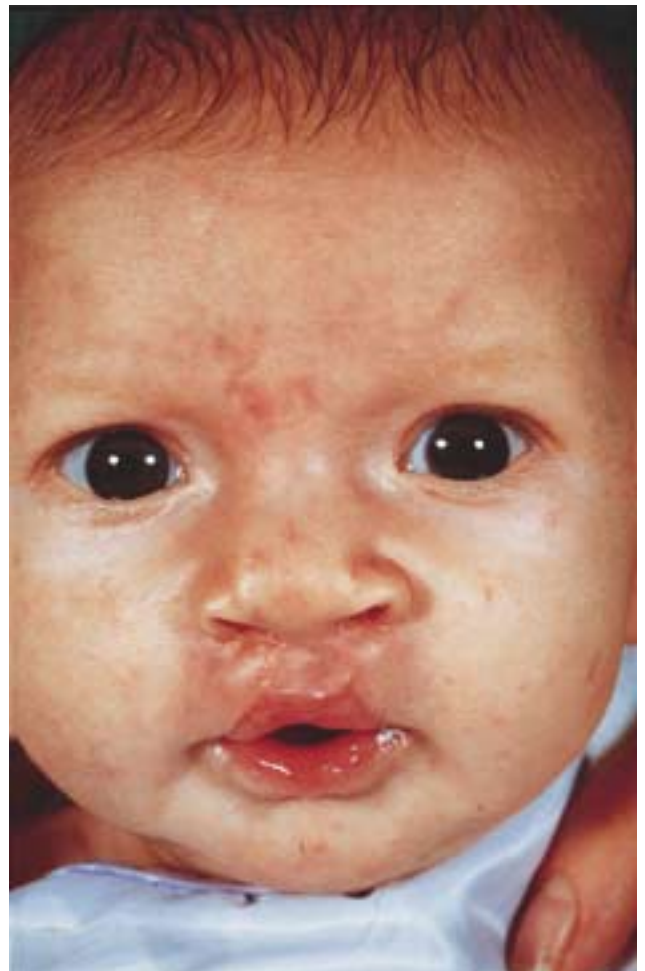
The emphasis in the repair is to restore the continuity of the lip muscles which encircle the mouth and to bring the base of the flattened nostril inwards. The muscles will then help to mould the alveolus (gum) into the correct position in a one sided cleft, and the premaxilla into position in a double cleft.

The baby will be given pain killers after the operation and will be allowed to feed normally. Arm splints and restrainers are not used. The lip (and sometimes the nose) stitches will be clearly visible and these are removed under a general anaesthetic one week after surgery. At first the scar will be pink and hard and may sometimes pull the lip upwards. This, however, will settle after a few months and the scar will gradually become softer. The use of vitamin E massage is encouraged at this stage.

Further cosmetic improvements can be carried out at any stage and minor procedures such as mucosal trimming (of a bulge on the lip) can be done as a day case. A healthy dialogue between the parents, the surgeon, and the child always helps.

The Palate Repair:

This is carried out at 6 - 12 months. The more minor clefts of the palate can be operated upon early, but with wide clefts one may have to wait for the sides of the palate (the palatal shelves) to grow inwards and closer together. The surgeon uses the skin and muscle of the palate itself and closes the cleft in three layers, nasal lining, muscle and oral (mouth) lining.





There are various types of operations using different techniques but, as long as the operation is carried out by a reputable surgeon, there need not be too much concern about the various types of surgery or the timing of it.

In this unit we do not alter the baby's feeding pattern, and bottle feeds can be continued immediately post operatively. So also, the use of a soother if required by your baby is not banned. The repair will not be harmed by the baby sucking or crying.

In a complete cleft lip and palate, the gum (alveolus) is not repaired at this stage, and there will be a small hole at this site between the mouth and the nose. This is called a fistula. It is of no importance at this stage but may cause some foods and fluids to appear at the nostril on occasions.

In about 10 % of palate repairs, the centre of the repair does not heal, leaving a hole (fistula) which may cause similar problems to the alveolar fistula mentioned above. This second type of fistula usually needs to be closed surgically at a later stage (between 3 and 10 years old).

The Nose Repair:

With a severely flattened nose, it is hoped that the initial lip repair will help its position greatly, but further operations are often required.

If the deformity of the nose is very marked it may be best to correct it before the child starts school or if there is teasing at school. However, an operation at this early stage is unlikely to be sufficient for life, as there is a constant changing in the shape of the nose throughout teenage years. A final rhinoplasty ("nose job") at 16 to 18 years old is often required.

Surgery for the Gum:

The gap in the gum is bridged by a bone graft taken from the iliac crest (often incorrectly called the hip). This is known as alveolar bone grafting, and is carried out when the second (permanent) teeth are erupting. At earliest, the teeth may be ready at 8 years of age but usually the operation is done between 9 and 11. The orthodontist makes the decision on timing and either the maxillo-facial surgeon or the plastic surgeon carries it out. If the lip repair has been judged to be unsatisfactory it can sometimes be revised at the same time as the bone grafting.



Surgery for Speech:

All children with a cleft palate have a full speech assessment. Approximately half will require on-going speech therapy. Of these, there will be a group with persistent speech problems who will need a second operation on the palate and throat (pharynx). This is called a **pharyngoplasty** and is needed in 10 - 20% of all palate repairs. It is carried out on the advice of the cleft team after several investigations (see the speech section below).

Surgery for Hearing:

Because of the problems with middle ear drainage, grommets may have to be inserted into the ear drums. This is carried out by an ear, nose and throat surgeon after examination and consideration of audiometry results.

Late Surgery:

As noted above, further surgery to improve the nose shape is often deferred until late teens. So also the final refinements to the lip maybe done at this stage. Occasionally, tissue from the lower lip may be transferred to the upper lip in a two stage procedure. Another example of borrowing from another area is the use of ear cartilage to build up a poorly formed nose tip.

Major bony surgery to move forward the whole of the upper jaw, or to move the mandible (lower jaw) is required in a minority of those affected by a cleft. This is carried out by a maxillo-facial surgeon after careful planning and can often have dramatic results.



FEEDING A BABY WITH A CLEFT

Babies with a small cleft lip or a small cleft of the soft palate may feed without any significant difficulty. In this case your baby can be breast fed or bottle fed according to your own preference. Babies with more extensive clefts may have feeding difficulties due to the fact that the baby cannot create enough pressure on the nipple or teat to suck. Fluid may also spill into the nose and come back down through the nostrils during feeding. These feeding problems, however, can be overcome using one of the following techniques.

Breast Feeding:

Some babies may be breast fed depending on the type of cleft. Many parents have decided prior to the birth to breast feed their baby and if so they should attempt to do so. If breast feeding is unsuccessful, bottle feeding with expressed milk can be an option. Feeding may be facilitated by using a breast pump, initially with the help of nursing staff.

Bottle Feeding:

Many cleft babies feed well from a bottle using a normal soft teat with an extra hole or an enlarged hole. An extra hole can be made by piercing the teat with a sterilised needle, and the hole can be enlarged by cutting an X in the teat using a sterilised knife or scissors. Use of an enlarged hole allows milk to flow more freely. It may be helpful to angle the teat away from the cleft and it is important to hold the child in a semi-upright position to reduce the risk of coughing.

Special Teats:

Special bottles are available for babies with cleft lip and palate who have difficulties sucking. Assisted feeding using a soft bottle and modified teat will allow sufficient volume to be taken within a reasonable time (30-40 minutes). The most commonly used bottle is the Mead Johnson squeezable bottle. This is a soft pliable bottle with a soft rubber teat. It allows you to squeeze the bottle gently while the child is sucking, thus aiding the feeding process. It is important when using the Mead Johnson bottle to squeeze the bottle while the child is sucking and to stop squeezing while the child is swallowing and breathing.

A second specialised bottle is used for children with more significant difficulties. This is called a Haberman Feeder. The Haberman is a small non-squeezable bottle with a long and soft squeezable teat. The teat should be used to squeeze milk into the child's mouth during sucking in a similar pattern to the Mead Johnson. For information on costs and sourcing of bottles, see Appendix One.



Feeding Plates:

If the baby has a wide cleft of the gum and front part of the palate it may be considered necessary to have a Feeding Plate made if a feeding pattern cannot be established. This is an orthodontic appliance which fits into the front of the mouth covering the cleft and aids more normal feeding. This is not routinely used due to the difficulty of fitting the plate and the uncertain longterm advantage. We do not routinely use feeding plates in The Temple Street Unit.

Weaning:

Your baby should wean in the normal manner. Babies can be introduced to pureed food at around four months in the normal manner and mashed foods can be introduced between 6 and 9 months. Your baby should manage to feed easier using the spoon and semi-solids, as the semi-solids, unlike fluids, do not pass up into the nasal cavity to the same extent. You should finish the feed with a drink of water to help clear any food from the cleft area.

The Dietician:

The dietician in the hospital can help to ascertain if the child is getting sufficient nourishment and advise on dietary changes if necessary. It is important to be flexible regarding feeding. Remember that any baby, with or without a cleft, can have difficulty establishing a good feeding pattern.

Swallowing Difficulties:

In general, babies with a cleft lip and palate do not have swallowing difficulties. However, if you feel that your child has problems swallowing, contact the Cleft Co-Ordinator or the Speech & Language Therapy Department to arrange for an assessment of feeding and appropriate management.

Feeding should be relaxed and pleasant for both parent and baby. **If you are experiencing any difficulty with feeding, for example if the baby is not getting enough food or feeding is taking a long time (more than 45 minutes) you should contact the Cleft Co-Ordinator or the Speech & Language Therapy Department for advice and support with feeding.**



SPEECH & LANGUAGE DEVELOPMENT IN CLEFT BABIES

Many children with cleft lip and/or palate develop speech and language normally, and may not require regular speech and language therapy. Approximately 50% of children will have some problems with speech and language development. However, most of these problems can be resolved with therapy. Research indicates that children with cleft lip only rarely have any difficulty with speech. However, all types of cleft palate, particularly cleft of the soft palate, are prone to problems with language development, articulation and nasality.

During the first four years of life, language development may be delayed in a child with a cleft palate i.e. the child is not saying words at the appropriate age, or perhaps the child uses immature phrases or sentences. This problem, however, can be treated with speech and language therapy, and usually by the time the child is going to school, language development is normal.

Some children may have difficulty with articulation, i.e. difficulty making speech sounds. Articulation problems may be a result of a combination of factors, e.g. scarring of the palate, small gum following cleft repair, poor movement of the soft palate, and transient hearing problems. Most children develop normal articulation with ongoing speech therapy. However, occasionally, further surgery on the soft palate is required.

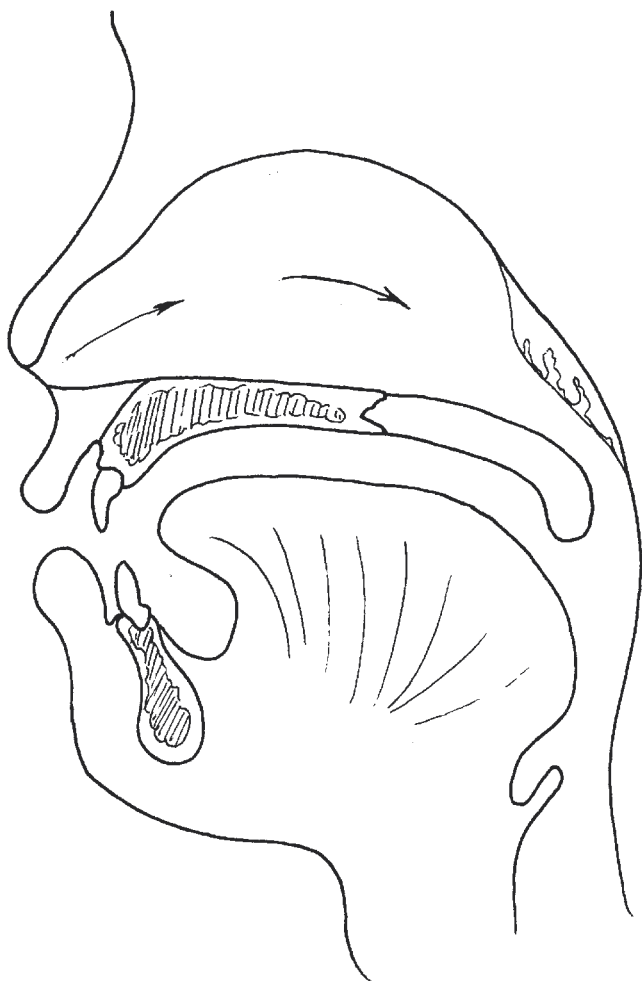
A small percentage of children with cleft palate have **hypernasality** (i.e. a nasal tone to their speech). During speech the soft palate moves back and up to close against the back wall of the throat preventing air from escaping into the nasal cavity (see diagram). The adenoids (adenoidal pad) contribute to this closure.

If the palate is too short or the movement of the palate is poor, the closing action does not take place and air escapes into the nasal cavity causing nasal tone in speech.

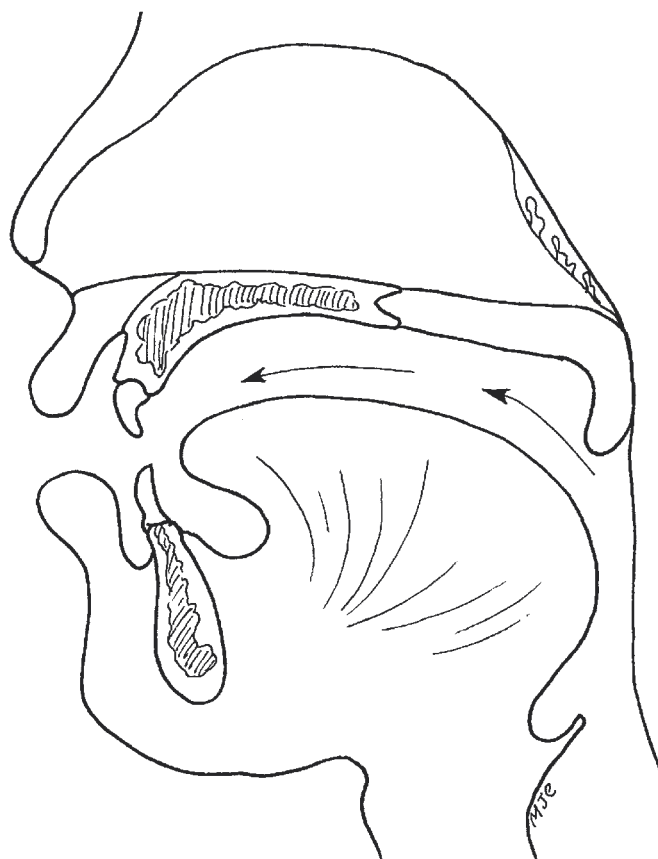
Speech therapy can help to eliminate nasal tone, however, approximately 10% of children with this problem will need further surgery at a later date.



BREATHING



IN SPEECH





SPEECH & LANGUAGE THERAPY SERVICES

Babies born with cleft lip and palate who are due to have their palate repaired in The Children's University Hospital, Temple Street, will automatically see the Speech & Language Therapist at first visit to the hospital. If we see children within the first month of life problems with feeding can be detected and help can be given. A Speech & Language Therapist should see children with cleft lip and palate at around six to nine months for assessment of communication skills. The Speech Therapist can informally assess the level of the child's development and provide advice on ways to encourage normal speech and language development. The baby should be reviewed on a regular basis i.e. at least every three months over the next few years. If you are living within the Dublin area, the initial communication assessment would be carried out at The Children's University Hospital, Temple Street. However, if you live outside Dublin, you will be referred to local Speech & Language Therapy services. Early intervention can prevent development of speech and language problems in the future.

Following the repair of your child's lip and/or palate, your child will be seen at a Combined Cleft Palate Clinic, with the Plastic Surgeon and the Speech & language Therapist. From about three years of age, your child will attend a special Combined Cleft Palate Clinic where your child will have a full speech and language assessment and hearing tests prior to the clinic. The Plastic Surgeon, Speech & Language Therapist, Ear Nose & Throat Consultant and Cleft Co-Ordinator will be in attendance at this clinic. The team draws up management plans for the next year. This may include surgery and/or ongoing speech and language therapy, or your child's progress will be monitored on a yearly basis. Attendance at these clinics and the full speech assessment prior to the clinic is extremely important in order to develop the most appropriate plan for your child over the coming year.

If a child has speech and/or language problems, they should attend regular speech and language therapy in the local community care clinic. The Speech & Language Therapist will work closely with parents, providing exercises and drills, which should be carried out at home.



Nasendoscopy & Videofluoroscopy:

A small percentage of children present with significant speech problems despite ongoing therapy will require specialised assessment of palatal movement during speech. Two special investigations are available:

1. **Videofluoroscopy** involves the use of continuous x-ray during speech, assessing the movement of the palate while the child is producing speech samples.
2. **Nasendoscopy** involves inserting a small scope (nasendoscope) into the child's nose to observe palatal movement during speech.

The assessments complement each other and provide direct observation of palatal function during speech. Information from these specialised assessments can help decide on future management for speech.

If you are concerned or have any queries regarding your child's feeding and/or speech and language development you can write to or phone the Speech Therapy Department in The Children's University Hospital, Temple Street.



ORTHODONTIC TREATMENT

Pre Surgical Orthodontics:

This type of orthodontics is carried out before the surgeon repairs the cleft lip. It is rarely required but might be used with a double cleft where the premaxilla is extremely prominent and lip repair is difficult. It involves the use of dental appliances and tape to help mould the segments into their correct position and help reduce the size of the cleft.

Feeding Plates:

These are not used routinely and are only reserved for babies with marked difficulty in feeding. They have been already mentioned above in the section on “Feeding a Baby with a Cleft”.

Initial Orthodontic Treatment:

The orthodontist will keep records and impressions of the developing dental arches. If there are any extra (supernumerary) teeth they can be removed as they can interfere with the proper development or eruption of the second or permanent teeth.

Orthodontic Treatment:

For some children simple orthodontic treatment involving braces to straighten the teeth is all that is required.

In children who have either bilateral complete clefts of the lip and palate or unilateral complete clefts of the lip and palate bone grafting of the alveolus (tooth bearing portion of the upper jaw) is required.

Before the bone grafting is carried out, the teeth must be brought into the correct relationship to each other and this is achieved by the use of an appliance to expand the upper dental arch. The expanded position of the dental arch is maintained for 6 to 12 months by which time the graft should have taken successfully. The optimum age for this procedure is usually between the age of 10 to 11 years depending on the stage of dental development.



The bone grafting procedure enables the permanent teeth to erupt. When all the permanent teeth erupt (usually by the age of 13 years), full orthodontic alignment of teeth can start with the use of fixed braces.

The aim of orthodontic treatment is where possible to align all the teeth and to close all residual spaces without the use of bridges or dentures.

OSTEOTOMIES:

In a significant number of patients the underlying jaws remain poorly related to each other and straight forward fixed braces cannot produce the optimum result.

These cases can be treated successfully at about 18 years, usually preceded by a course of surgical orthodontic treatment. This surgery is referred to as orthognathic surgery and is carried out by the Maxillofacial Team usually at St. James' Hospital but occasionally at the Mater Misericordiae Hospital.



DENTAL HEALTH

Dental Health:

It is important that the primary (baby) teeth and permanent (adult) teeth remain sound and do not decay. The gingiva (gums) should be kept healthy by brushing the teeth thoroughly every night before bedtime. Loss of primary (baby) teeth may complicate and prolong future orthodontic treatment. Loss of permanent (adult) teeth may mean that orthodontic treatment cannot be offered at all, or the outcome of treatment will be compromised.

Your infant's teeth should be cleaned daily, as soon as they erupt. It is important that your child does not sleep with a bottle in his mouth - this habit can result in rapid decay of the baby teeth, a condition known as "Nursing Bottle Decay". If a soother/dummy is used, it must NOT be dipped in sugar, honey or anything sweet as this can also cause extensive dental decay.

Dental decay is caused by frequent eating of sugary foods and/or frequent drinking of sugary liquids. If you want to use sugary foods and drinks, then these should only be taken at meal times. Snacks and drinks taken in-between meals should NOT contain sugar. Milk, water, fruit, cheese, toast are some examples of sugar-free snack foods.

A child with cleft lip/palate should attend a local dentist regularly with the first visit at about the first birthday. Dental treatment is provided free by the Health Boards at the local dental clinic. Alternatively you may bring your child to your general dental practitioner or specialist paediatric dentist, at your own expense.



Remember

- Prevention is the key to healthy teeth and gums
- If you don't look after your child's teeth the final result of CLP treatment is compromised.
- Dental decay is totally preventable by a combination of Fluoride, Diet and Oral Hygiene.
- If fluoride is not in the water supply, fluoride supplements can be purchased at your local chemist. Use fluoride toothpaste and be careful that your child does not put too much on the brush - only a pea-sized amount of toothpaste should be used.
- Teenagers should regularly use dental floss.
- If a child has braces on his teeth a special Oral B toothbrush is available and should be used.
- Pregnant women and children should not use the antibiotic Tetracycline as it damages teeth.
- When buying soft drinks choose DIET minerals as they are kinder to the teeth.
- When your child is on medication ask the doctor to prescribe sugar free brands.



HEARING PROBLEMS AND TREATMENT

Hearing and the Cleft Palate Child:

The ear is composed of three parts; the outer ear, middle ear and inner ear. Soundwaves travel through the air and enter the outer ear canal. Here they strike the eardrum, the eardrum moves inwards and the sound is transmitted across the middle ear by a chain of tiny bones, three in number, which are termed ossicles. The innermost of the three ossicles is called the stirrup bone and it transmits the sound to the inner ear. Here the minute nerve endings pick up the sound and transmit it directly to the brain.

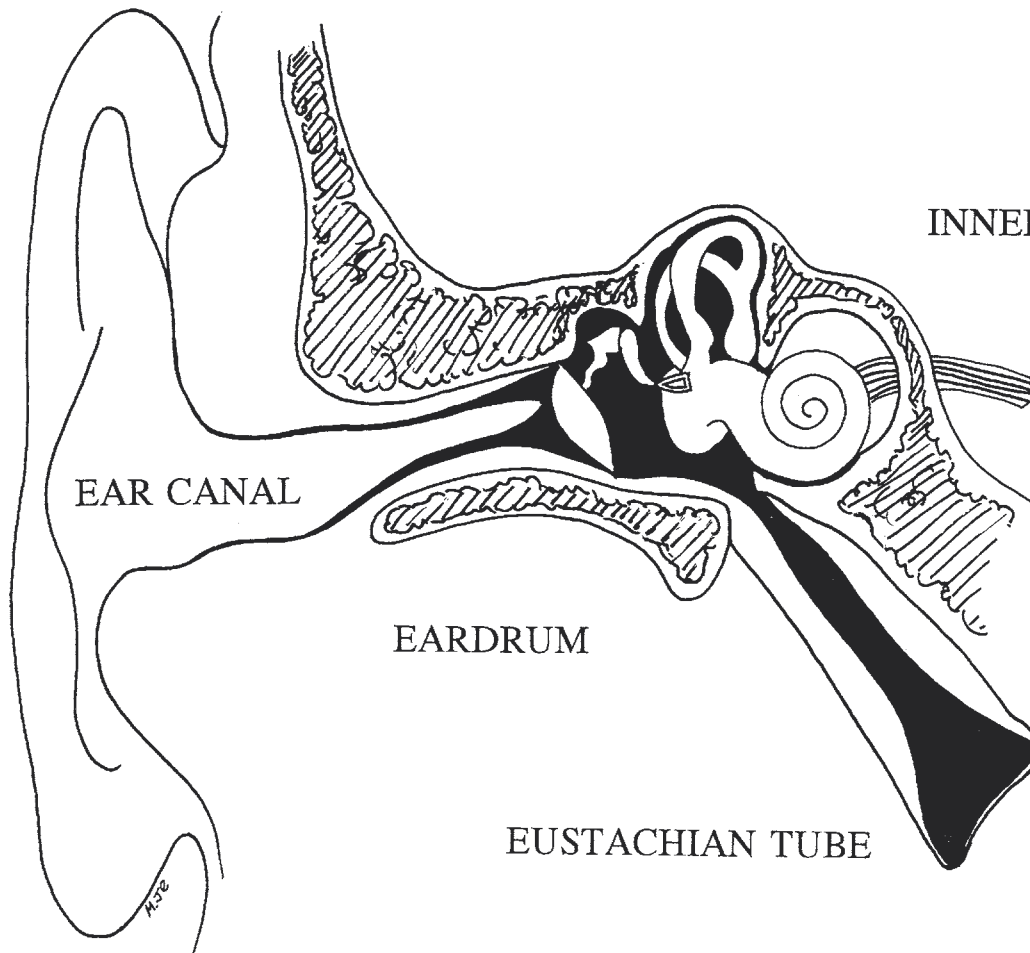
The part of the ear which is usually affected in a child with a cleft palate is the middle ear. If sound cannot travel freely across the middle ear to the inner ear, the patient has a hearing loss. Normally the inner ear contains the air. It is connected to the back of the nose via the eustachian tube. This tube opens and closes approximately 1,000 times a day and permits air to enter the middle ear from the nose, thus keeping the air in the middle ear the same as the pressure in the outside world. If, for any reason, the eustachian tube does not function and air does not enter the middle ear regularly, a negative pressure develops in the middle ear, fluid is secreted into the middle ear by its lining membrane and this fluid interferes with the movement of the ossicular chain. Thus, sound cannot be transmitted efficiently across the middle ear and the patient develops what is called a conductive hearing loss or deafness.



EXTERNAL EAR

MIDDLE EAR

INNER EAR





When a child has a cleft lip only, hearing problems do not arise. However, when there is a cleft in the palate, hearing problems can arise for the following reason:

The soft palate at the back of the mouth has muscles connected to the eustachian tube. When we yawn, eat or swallow, the palate moves and this pulls the eustachian tube open and allows air to pass into the middle ear as mentioned above. In a child with a cleft palate, however, just as there is an abnormality of the muscles in the palate, so also is there an abnormality of these muscles where they are attached to the eustachian tube as both form a part of the same muscle group. Thus, if the eustachian tube does not work properly, air cannot get into the middle ear as it should and its place is taken by fluid. The fluid in the middle ear has the effect of dampening down the conduction of sound and producing a hearing defect. The hearing loss is frequently to the order of 30-40 decibels. It is not known, without a national register of cleft palate patients, how many children may be affected in this way but it could be as high as 90%. It is therefore important that children with cleft lip and palate should have a full hearing assessment carried out at approximately 12 months of age and that their hearing should be assessed on a regular basis throughout their childhood.

The Effect of Deafness

If a child has a hearing loss, particularly in early years, this may interfere with the development of speech. The child can only imitate the sound it hears so if its hearing is depressed, there may be some delay or abnormal development of the child's speech at this stage. It is crucially important, therefore, that the child's hearing be assessed early in life and that the particular attention be paid to the child's hearing level in the first 2-3 years of life. It is at this stage that the foundations for speech are based.



The Signs of Deafness

Every child with a cleft palate should have extra attention paid to its hearing. Parents and teachers are usually first to realise that a problem may exist. Turning up the sound of the television, having to repeat oneself to the child when speaking, or noting the inability of a child to hear the parent when called from another room, are indications in the household of a possible hearing loss. In a very young child and particularly under the age of 2, it is slightly more difficult to detect hearing loss. If the child appears unresponsive and frustrated or withdrawn, this behaviour could be because he is suffering from ear infection resulting in poor hearing. The ears may feel congested and uncomfortable and the child may be out of sorts. If there is any question that your child does have a hearing loss, you should ask your family doctor to assess him/her and arrange for a hearing assessment. This will frequently entail a visit to your local E.N.T. Consultant as surgery may be necessary

Treatment of Hearing Problems:

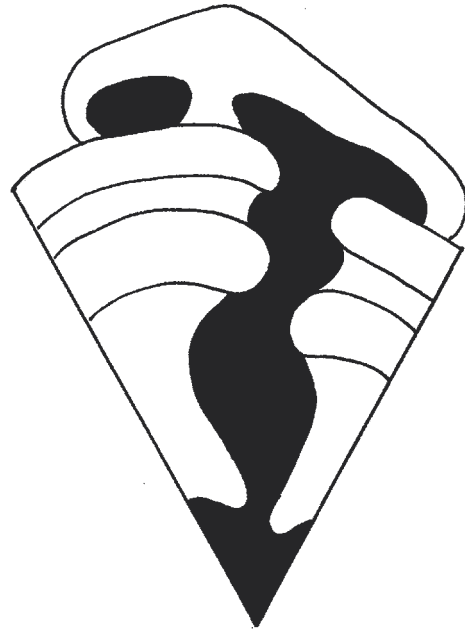
Up to 90% of children with cleft palates do have middle ear fluid and some degree of hearing loss. Very frequently this requires surgical treatment. The E.N.T. surgeon is aware of the fact that the child's eustachian tubes are not working properly and that this may continue to be the case until the child ultimately outgrows the problem, the eustachian tubes start to function normally and the middle ear becomes air containing. Whilst this is happily the end product with most children who have a cleft palate, nonetheless a certain number of children unfortunately will continue through childhood to adolescence and adulthood with ongoing ear and hearing problems. If your child's hearing is depressed and his middle ears contain persistent fluid which is showing no sign of spontaneously clearing, the E.N.T. Surgeon may suggest surgery. This consists of admission of a child to the hospital for the day, the administration of a General Anaesthetic and drainage of the middle ear fluid or glue with the insertion of a grommet or ventilation tube. Grommets act by draining the fluid, but more specifically by allowing air into the middle ear, thus helping to dry up secretions and bring hearing back to normal. They generally last for 6-9 months after which they are usually naturally extruded.



Parents will generally notice an improvement in the hearing within a few days. Unfortunately grommets may need to be inserted on a number of occasions until the child's eustachian tubes start to function properly. In many cases, such children will need regular supervision by the E.N.T. Surgeon until they are 10 years of age. By that stage, most children will have outgrown their eustachian tube dysfunction and the middle ears will be working normally. As a result of the middle ear problem throughout childhood, however, there may be scarring of the eardrums and even perforations on occasions. This may require further surgery at a later stage and as previously mentioned, a certain number of children will continue into adulthood with ongoing ear and hearing problems which may require even more major surgery. Swimming traditionally in children with grommets was not allowed, but this has changed over the past few years. Children with grommets in place can swim provided certain precautions are taken. Please discuss this with your E.N.T. Surgeon at your post operative visit to him.

Tonsils/Adenoids:

Like any other child, the child with the cleft palate may suffer from tonsillitis and adenoiditis, resulting in recurring sore throats or upper respiratory tract infections. Removal of the adenoid pad at the back of the nose may have the effect of removing the buttress against which the reconstructed palate closes. When repairing a cleft palate, the Plastic surgeon sometimes takes tonsil tissue from each side to aid in closure of the gap at the sides of the pharynx. The E.N.T. Surgeon, therefore, is often unwilling to remove tonsils and adenoids, thereby compromising the palate repair. In cases, when a child who has had a cleft palate repair performed suffers the recurrent tonsillitis i.e., 6 genuine attacks per 18 months, requiring antibiotics etc., surgery may have to be considered despite the risks involved. In such instances, it is suggested if possible that the child be seen at a combined cleft palate clinic and a joint decision regarding surgery be made by the Plastic Surgeon, E.N.T. Surgeon and speech and language therapists involved in the case. If surgery is really required, there is a risk that the child's speech may deteriorate post operatively and that even further palatal surgery may have to be considered in due course. The same risk also applies to the removal of adenoids in such a child.



OUR LOGO:

This is based on a view from below of a unilateral complete cleft lip and palate on the patient's left side.

This nose tip is topmost with a normal nostril on the left of the logo and a stretched flattened nostril on the cleft side.

Below the cleft nostril floor is the cleft lip, the cleft alveolus or gum and the cleft palate which terminates as a cleft uvula at the apex of the triangle towards the bottom end of the logo.



Teamwork

The Core Team, listed below, adopts a Team approach towards the management of your child with a cleft disorder. The Orthodontist acts as a link with Maxillofacial Services and the Maxillofacial Surgeons, Mr. Frank Brady and Mr. Cliff Beirne at St. James' Hospital and Mr. David Ryan at the Mater Misericordiae Hospital and Dublin Dental Hospital. Other specialists are often involved and form the Peripheral Team. This would include psychologists, social workers, paediatric dentists, eye specialists, geneticists etc. Referral to these services is usually carried out by members of the Core Team.

THE TEAM

Michael Earley..... Plastic Surgeon

Eilis Murphy..... Speech & Language Therapist

Triona Sweeney Speech & Language Therapist

Julie Young Speech & Language Therapist

Louise Cafferky Speech & Language Therapist

Eamonn McKiernan Orthodontist

Alexander Blayney Ear, Nose & Throat Surgeon

Ann Cuffe Audiologist

Anne McGillivary Cleft & Craniofacial Co-Ordinator