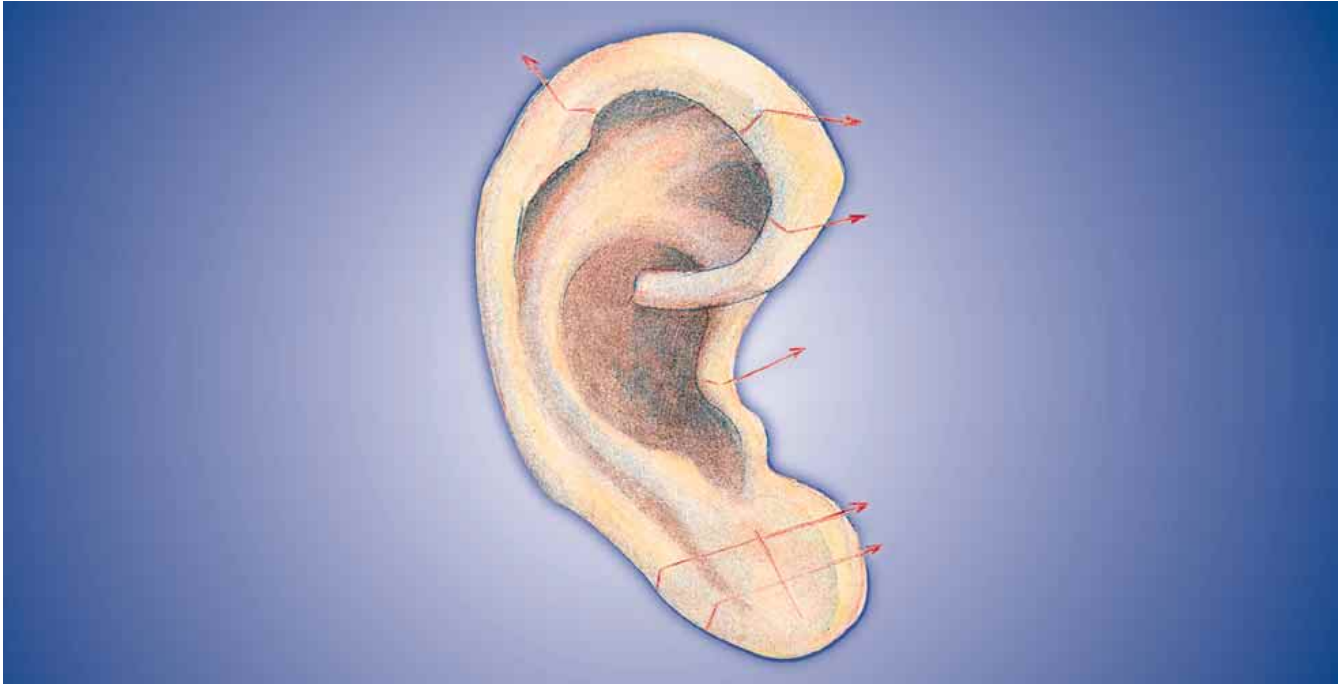


# *Ear Reconstruction*

---



# EAR RECONSTRUCTION

**R**econstruction of the ear is one of the most challenging problems facing a reconstructive surgeon as it demands precise technique combined with artistic creativity. Microtia is a congenital deformity of the external ear where the auricle (the external ear) is severely deformed. There may be a spectrum of external ear deformities with various degrees of involvement of the middle and inner ear. This type of ear deformity is commonly seen in patients with hemifacial microsomia and Treacher-Collins syndrome.

Psychological effects of an ear deformity play a significant role in timing of reconstruction. Most surgeons prefer to initiate treatment when the patient is between 5 and 7 years of age since this early intervention will reduce anxiety as a result of peer pressure. This also allows for sufficient rib growth to provide the quantity of cartilage needed by the surgeon for adequate framework fabrication. Surgery at this time can give a more consistent result than earlier intervention due to the fact that the child has had a chance to grow, thus making it easier for the surgeon to balance the size and shape of the reconstructed ear to the child's normal ear.

## MICROTIA

The treatment of microtia involves surgical reconstruction of the external ear framework. Ear

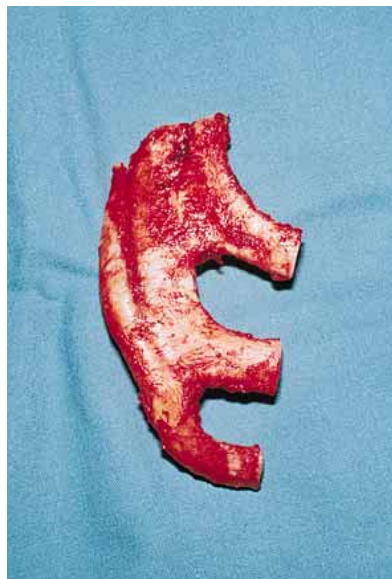
### *Microtia*



*Preoperative*



*Postoperative*



*Costal cartilage harvested from left chest wall.*



*Cartilage carved into ear framework.*

reconstruction requires a carefully planned, staged reconstruction that involves 3-4 operative procedures. The first procedure involves the construction of the cartilage framework for the ear. Under general anesthesia, donor cartilage for the frame is obtained en bloc from the

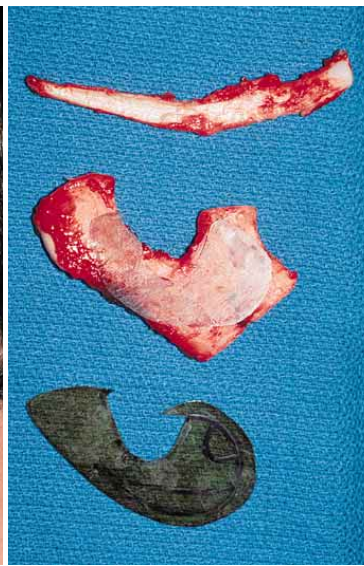
rib area contralateral to the ear being reconstructed to take full advantage of the cartilage's natural curvature. Working from pre-surgical templates that have been drawn as well as from photographs, the surgeon then carves the cartilage into its new shape and carefully positions the graft into position. The overlying skin then redrapes to the newly carved cartilage framework. Subsequent operations are required to rotate the lobule and to elevate the framework into its final position.

It is of significance to note that if there is normal hearing in one ear, surgery to improve hearing in the abnormal ear is not recommended. Almost 90% of all patients with microtia have only unilateral involvement and quickly adjust to this condition following birth. Potential gains from working on the middle ear are outweighed by the inherent risks of the surgery itself. Therefore, middle ear surgery should be performed only on the true bilateral microtia patient or the patient with significant hearing loss in both ears.

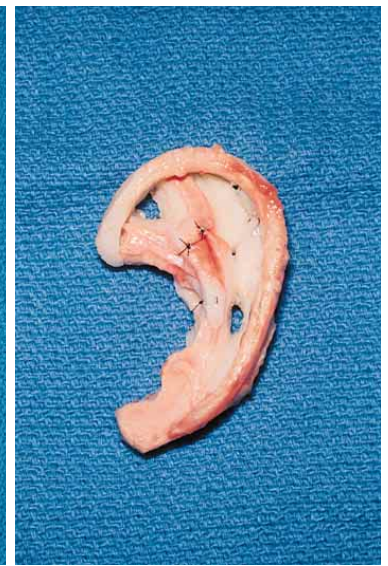
### *Microtia*



*Nine year old with left microtia.*



*Costal cartilage harvested from chest wall.*



*Cartilage carved into ear framework.*



*Postoperative result after staged ear reconstruction.*



Four year old born with right microtia.



Appearance of ear after first stage reconstruction.



Postoperative result after staged reconstruction.

## TRAUMATIC EAR DEFORMITIES

The traumatic amputation of an ear is another circumstance in which this type of staged cartilage reconstruction can be effectively used. The amount of ear loss determines the types and stages of reconstruction needed. If only a small part of the ear is lost from trauma or tumor resection, then helical or rim advancement flaps may be used to reconstruct this portion. If larger sections are lost then a staged reconstruction is necessary. Effective ear reconstruction is dependent upon meticulous surgical technique and careful preoperative planning.

### Reconstruction of traumatic ear deformity



Preoperative



Postoperative



*Human bite to ear with loss of middle third.*



*Helical rim flap reconstruction.*



*Postoperative result.*

## **OTOPLASTY**

Another congenital deformity of the ears is called prominent or protruding ears. The ear's prominence is due to lack of development of the antihelical fold. The primary reason to correct this deformity is to eliminate the psychological trauma that this condition can cause. Peer ridicule can be severe with this particular deformity. The operation designed to correct this problem involves recreating the antihelical fold curling or setting the ears back closer to the head. With experience, consistently good results can be obtained.

### *Protruding Ears*



*Eight year old with bilateral protruding ears.*



*Postoperative result after otoplasty.*