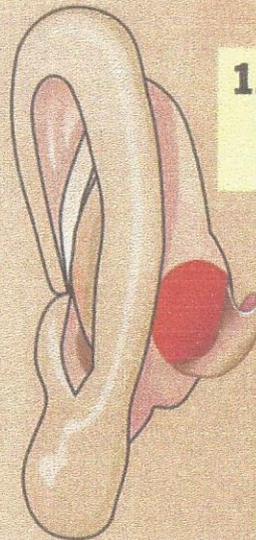


# Let your ears give you a better handle on things

Joints which are arthritic or have been damaged in accidents can be repaired with a new technique in joint reconstruction. By using cartilage from the back of the ear, it can be transferred to joints in need of repair. Removing a small circle of cartilage from the ear leaves no deformity to the ear. Also it makes for an excellent fit for many joints due to its curved contour.

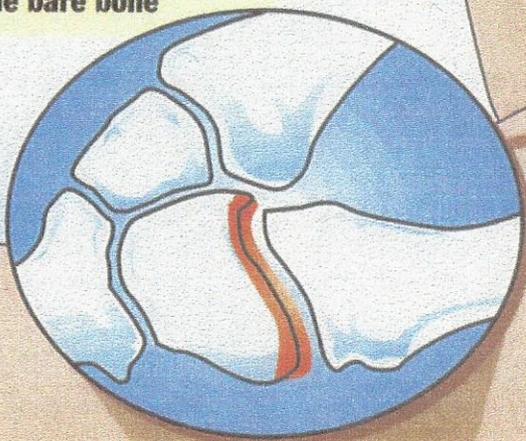
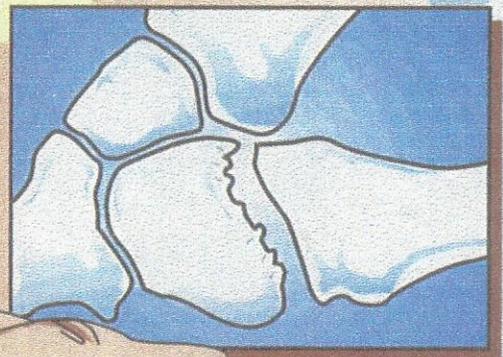
**3. Cartilage is then inserted to resurface the bare bone**



**1. Cartilage is taken from the back part of the ear, leaving no deformity to the ear**

The skin is peeled back and cartilage is removed. The orange area is representative of cartilage.

**2. The rough, irregular arthritic surface is removed back to good bone**



**Detail area**

A common area of the hand afflicted with arthritis is at the base of thumb.

## **PROCEDURE**

The diseased part of the trapezium is removed through a curved incision over the tender part of the base of the thumb. Full thickness cartilage from the ear is removed as a disk sized to fit in the space created by removal of the disease process. The joint is closed and reinforced with the adjacent tendon and fascia of the thumb muscles and protected several weeks in a splint. The ear is closed in the back; the front of the ear remains undisturbed. After 8 weeks, normal activity can be resumed except we ask that you wear the splint another month if very heavy work is going to be done.

## **ADVANTAGES of this procedure**

The most obvious advantage is that we are putting tissue in the joint that is more nearly the tissue that was there originally. Additionally, nothing is done to destabilize the joint or add scars or weaken any areas of the forearm by removing tendon(s) from this area. The procedure is done as an outpatient and recovery is usually quick for this type of operation. Physical therapy is usually not required to regain range of motion and strength. No artificial material is used that could later become infected or extrude. An added advantage is that many times the trapezium at the base of the thumb is fused to the bone next to it and it is also arthritic. We can frequently take enough cartilage to at least resurface part of this other bone.

## **RISKS**

The biggest risk of any procedure on a joint is infection and that is true to this procedure. Since your own tissue is used, the risk should be lower than any other operation.

It is possible for there to be a loss of skin in the front of the ear. This could result in a hole in the center of the ear that might be unsightly or require an additional operation to fix.

A major sensory nerve-the superficial radial nerve- runs in the area of the incision on the hand, this can be damaged by retraction to get it out of the way, or it could even be cut. This may cause a temporary or even permanent area of loss of sensation over the back of the thumb and index finger, or an area of tenderness or sensitivity that is difficult to fix and may require and additional operation to obtain improvement.

Ear cartilage so far has held up under normal or even heavy usage in both man and women. However, in any individual patient there is no way to know how long the cartilage will last or whether it will fragment under usage and need to be removed. If it requires removal, a tendon or other material could be used if desired or additional cartilage could be placed in the joint.

Frequently, more than one joint is involved although it is the trapezium (carpo-metacarpal) joint with the thumb that usually is the worst and causes the most symptoms. Therefore, it is not possible to predict any particular outcome in individual patients or whether or not there will be any improvement at all. If improvement is not obtained, or insufficient, additional surgery might be necessary for relief of symptoms.

## **Arthroplasty with Autologous Ear Cartilage Implant**

Arthroplasty is reshaping or reforming of a joint. Many surgeons do this procedure by the insertion of a foreign material such as titanium; others remove one of the involving bones and fill the space that results with tendon.

All of the currently practiced procedures to restore function at the base of the thumb at the carpo-metacarpal joint have arisen from a procedure that simply removed the trapezium, which is the small bone in the wrist at the base of the thumb. This served to eliminate the bone on bone contact that was the source of the pain when the thumb was used.

Post-operatively, however, strength in the thumb was poor so the procedure evolved to add a spacer between the bones (a rolled up tendon) that was supposed to act as a cushion. Because the thumb metacarpal (the long bone of the thumb) tended to drift towards the wrist various means to stabilize the thumb were also added also using parts of tendon taken from the forearm. However, strength continued to be a problem and this was a very invasive procedure going both into the forearm, the thumb, and wrist.

Since ear cartilage microscopically resembles the cartilage of the finger joints it should be a good substitute for the jagged surface of the trapezium. Ear cartilage has a long record of use in plastic surgery as a graft in other parts of the body such as the nose. It is tolerated well and is a proven material for a graft.