

## New procedure straightens bunions without bone cutting



**A less invasive surgical treatment** for bunions, known as the tightrope procedure, is being used at UCLA to correct hallux valgus, a condition that causes the big toe to angle in toward the other toes. The new procedure uses a special suture material called fiberwire to bind the first and second metatarsals together, pulling the first metatarsal into proper alignment.

Bunions result when weakened muscles and ligaments holding the first metatarsal in place allow it to shift away from the second metatarsal. At the same time, the big toe will shift the other direction, toward the second toe, causing an imbalance in the joint. Pressure from shoes or the ground on the protruding end of the first metatarsal cause the characteristic bump on the side of the foot at the big toe joint. Bunion deformities are progressive and can lead to arthritis.

Traditionally, the surgical treatment of hallux valgus has been either by osteotomy unionectomy — cutting through the first metatarsal and repositioning it — or by fusing the first metatarsal base to the first cuneiform and the second metatarsal base, known as a Lapidus procedure. Both treatments require a long recovery period.

### A new option for bunion patients

“Because the fiberwire sutures remain in place, there is very little worry of the bunion coming back. It’s outpatient surgery, you can put weight on it in a boot right away, and I get a level of correction that I just can’t get with an osteotomy,” says Babak Baravarian, D.P.M., chief of Podiatric Medicine at Santa Monica-UCLA Medical Center and Orthopaedic Hospital.

The advent of the tightrope procedure, which uses a wire-like suture to align the first metatarsal by binding it to the second metatarsal, provides an additional option for bunion patients. It is much less painful than cutting bone, and heals with minimal scarring. Dr. Baravarian now uses the tightrope procedure on about 40 percent of his bunion patients, though many podiatrists have not yet incorporated this relatively new medical device into their practices.

During the tightrope procedure, four 1.1 millimeter holes are drilled through the first and second metatarsals, and two sets of fiberwire are passed through the openings and anchored on either side. After the fiberwire sutures are in place, they are tightened to the correct position and the knots are cinched down. The surgeon uses X-ray guidance to ensure the desired alignment, allowing a level of correction not possible with osteotomy or fusion.

While traditional procedures may require six to eight weeks of non-load-bearing recovery on crutches following surgery, the outpatient tightrope procedure allows the patient to be on his or her foot in a boot right away. There is no need to wait for bone to heal, simply for the knots at either end of the wire to scar. While UCLA doctors currently recommend six weeks of rehabilitation, they believe that experience will show that patients are able to recover fully in three or four weeks.



**Left: (Preop)** Bunion deformity with shift of the 1st metatarsal with poor alignment of the foot prior to surgery.

**Right: (Postop)** Tightrope bunion procedure with re-alignment of the 1st metatarsal and the great toe position. Note metal anchors securing the tightrope cord in place between the two bones.

## The fiberwire sutures

The fiberwire suture is made of a mesh and wire-like material that has a tensile strength far greater than metal. The thin suture material is actually stronger than the bones that it is repositioning. At UCLA, doctors use two parallel sets of wires to distribute the stress and reduce the risk of fracture.

## The right procedure for the right patient

Bunions can cause a variety of conditions, but many podiatrists offer only one procedure to treat all bunion patients. UCLA offers all three procedures so patients can be treated with the best option for their specific needs.

Patients with excessive hyper-mobility or an extremely thin second metatarsal are better suited for Lapidus fusion. Exceptionally large bunions are treated more successfully with osteotomy or Lapidus fusion. However, many bunions are well treated with the tightrope procedure, including bunions in patients with a short first metatarsal that osteotomy would make even shorter.

## Participating Physician

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