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Ceramic joint that puts life back into a frozen wrist...

By [David Hurst](#)

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Millions of Britons suffer wrist pain as a result of arthritis or injury — many end up unable to use the joint.

Davena Shelley, 77, a retired church administrator from the New Forest, Hants, had her wrist joint replaced with a ceramic device.

THE PATIENT



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'I'd damaged a part called the ulnar head, the top of the forearm bone that allows the hand to move around and turn over,' said Davena Shelley

Fifteen years ago, I was rushing home from shopping to take my grandchildren out and tripped on the

pavement. I put out my hands to break the fall, and my left wrist took the brunt. It immediately felt painful and tender.

By the next morning it was swollen and painful, so I went to hospital.

The doctors took an X-ray, and said the wrist wasn't broken, but I'd damaged the joint so I needed to wear a sling for a few days.

Fortunately, I write with my right hand, but ever since then, my left wrist bothered me — I couldn't rotate it easily, so anything that involved turning my wrist was difficult.

I was a keen gardener and used to ice lots of cakes for people, but couldn't do these things any more, and I also had to give up Scottish dancing. Even washing my hair was awkward.

Then in 2003 I fell again and landed on the same wrist. This time I thought: 'This really hurts.'

Again I hadn't broken it, and at hospital I was given a support splint — like a fingerless glove — to wear, which helped. But when it came off, I couldn't turn the wrist at all and it ached, too. I went back to hospital and tried physio, but nothing helped.

I resigned myself to living with it as I thought nothing could be done.

Then in March 2009 I was referred to the surgeon David Warwick at Southampton University Hospital. He did some X-rays of my wrist and said I'd damaged a part called the ulnar head, the top of the forearm bone that allows the hand to move around and turn over.

He said up until recently, the only option for this would be to remove it completely, which would get rid of the pain, but you still couldn't move your hand much.

But now there was a new procedure using a replacement made from ceramic. It looked like a small gearstick, with a ball shape at the top and a stem to hold it in place. My wrist wouldn't hurt any more, and I'd be able to move my hand.

I was scared because I'd never had an operation before. But Mr Warwick reassured me it would be fine. The operation was done under a general anaesthetic and took an hour. When I came to, it was painful, but painkillers helped.

I left the next day with a bandage I wore for nine days, and afterwards I had a plaster cast for six weeks.

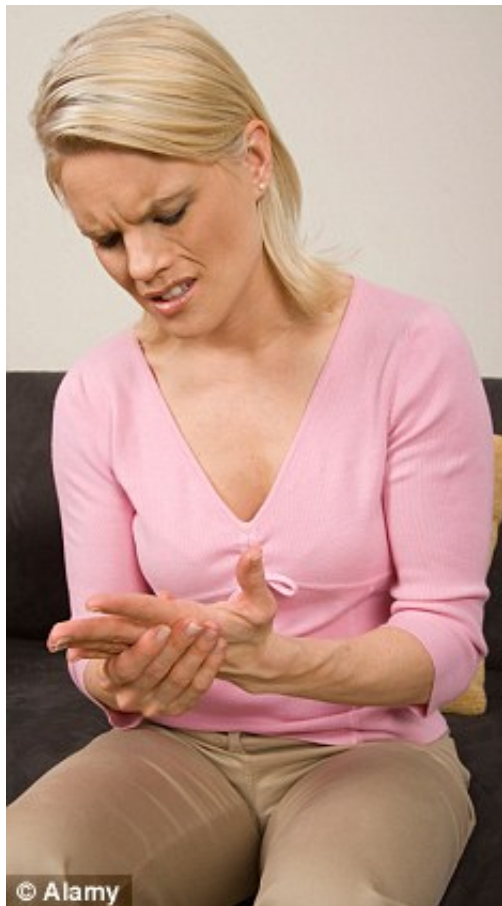
When the cast came off, there was a thin, 4 cm scar along my wrist, in line with my ring finger.

I didn't pick up anything heavy for a few weeks, but within a couple of months I could twist and bend it like before I fell on it the first time all those years ago. Mr Warwick says the replacement should last for another ten years.

I'm back driving, gardening, icing cakes and dancing — doing everything I could do before. My youngest grandchild is a year old and it's so wonderful that I can pick her up for a cuddle.

THE SURGEON

David Warwick is a consultant hand surgeon at Southampton University Hospital. He says:



The joint can be damaged following a fracture or dislocation, or from osteoarthritis or rheumatoid arthritis

The wrist is a complex series of joints that allow us to move the hand. One of the two main joints is the ulnar head — this is the rotating joint at the base of the wrist that allows us to rotate the hand.

The ulnar head is about the same width as a 10 p piece, and sits at the end of the ulna, the forearm bone. Its rounded shape acts like a ball-bearing, sitting in a shallow notch on the hand bones. The hand bones are attached to it by strong ligaments.

The joint can be damaged following a fracture or dislocation, or from osteoarthritis or rheumatoid arthritis. Six million people in Britain suffer from joint pain in their hands and wrists as a result of arthritis.

Damage to the ulnar head can be extremely painful, and often means patients cannot turn the hand over at all, so simple tasks such as gripping or typing are impossible.

Traditionally, treatment was complete surgical removal of the joint. This would get rid of the pain, but rotation remained very limited. There was also a risk the forearm bones would rub against each other, with no joint to cushion them, causing more pain.

About 15 years ago a group of surgeons in the U.S. designed a replacement ulnar head device. It comprises a stem about 8 mm wide, that slots into the ulna bone in the forearm; at the top of this stem is a head the same shape and size as the ulnar head.

Ulnar replacement became available in Britain a few years later, but at first it was only used to treat those who had already had the joint completely removed.

However, in the past two years these wrist replacements have been further developed. While previous designs would rub against the ligaments around the wrist, now we've narrowed the device slightly, so we can preserve this tissue.

We also make the heads from ceramic, which is similar to the material of the original joint, so we believe they'll last longer and work much better.

This means we can roll out the procedure for more patients, including those with arthritis or who are suffering from a wrist injury.

So far at Southampton University Hospital we've performed this operation on 56 patients, and most had a very satisfactory result.

The hour-long operation starts with a 4 cm incision over the top of the wrist. The tendons are moved out of the way and the ulnar head is precisely removed with a very sharp medical power saw.

We then use a medical file, similar to a nail file, but cylindrical in shape, to hammer into the ulna bone. The shape the file makes is an exact match to the width of the new stem.

We have different stem lengths and head sizes available to match the individual patient. During surgery we try each one, working our way up from the smallest stem until it fits snugly with the head sitting at the top, using X-rays to check.

After surgery, the patient's bone will grow into the stem, so the head is held even more securely in place.

The ligaments supporting the ulnar head are closed securely with strong sutures. Finally, the incision on the back of the wrist is stitched.

The patient goes home the same day and can use the wrist straight away, but heavy or repetitive use is discouraged for the first six weeks.

The procedure can't be performed on patients with very soft bone or weak ligaments supporting the ulnar head — for example, some rheumatoid arthritis patients.

But as we get more information about the longevity of the device, and as newer materials come into use, then this technique will suit even more patients.

The ulnar head procedure is available on the NHS. Privately, it costs around £6,500. Visit [hand surgery.co.uk](http://hand.surgery.co.uk)

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