CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

INFORMATION & CONSENT

STT Pyrocarbon Arthroplasty

At-a-glance recovery. Pooled from 5 published studies — your own pace will vary.

LIGHT DUTIES desk work, driving, daily tasks	MOST EVERYDAY ACTIVITIES manual work, sport, gym	FINAL OUTCOME PLATEAU pain and strength
4-6 weeks	**3-6 months**	**12 months**
The splint stays on for four to six weeks; light use of the hand and desk work resume once it is off.	Strength and comfort build up over three to six months; in one series grip and pinch reached about 90% of the other hand.	Results are usually settled by about a year; published follow-up runs to around five years.

Why this operation has been suggested

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate. We assess you with a history, an examination and imaging where needed, and that tells us whether the arthritis is in the STT joint alone or whether the thumb base joint is worn as well.

The STT joint sits at the base of the thumb side of the wrist, where small wrist bones meet. Wear-and-tear arthritis there can cause ongoing pain, especially when you grip or load the hand. For this joint, we usually try non-operative care first: changing activities, hand therapy and splinting. Surgery comes into the picture when those steps have not given you enough improvement.

If the STT joint is the problem on its own, this operation may suit you. It places a small, smooth, slightly curved disc of pyrocarbon into the joint as a spacer. The aim is to relieve pain while keeping wrist movement and the height of the scaphoid, one of the small wrist bones. Keeping that height may reduce the wrist-bone tilt that can follow simple bone removal. If your thumb base joint is also badly worn, we would discuss a different operation instead.

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Before the operation

You will need some imaging before surgery so we can plan the operation. This usually means X-rays of your wrist, and sometimes an MRI or ultrasound scan as well. These pictures show how much wear the STT joint has and whether the thumb base joint is involved.

On the day of surgery, do not eat or drink for seven hours before your operation. We ask for seven hours rather than six so you can be brought forward if the theatre list runs early. Your surgeon will tell you which medications to stop beforehand, so bring a list of everything you take, including any blood thinners. Arrange for someone to drive you home, as you will not be able to drive with your splint on. Wear loose, comfortable clothing with an arm sleeve or loose cuff.

If you have other medical conditions, you may need blood tests or a review with the anaesthetist before the day. Most people do not need either.

On the day

You arrive at the hospital's surgical admissions unit, where you are checked in and prepared for theatre. You will meet the anaesthetist, the doctor who gives the anaesthetic and looks after you during the operation. This operation is done under general anaesthetic. You will be fully asleep for the operation. Some patients may also have a regional nerve block for post-operative pain relief; the anaesthetist decides on the day based on your individual circumstances.

You are then taken into the operating theatre, where the operation is performed. Afterwards you wake up in the recovery area, where nurses monitor you while the anaesthetic wears off. Once you are stable, you either go to the ward or go home, depending on the procedure and your recovery.

What the operation involves

This is an open operation done through a small cut at the base of your thumb. Through that cut, your surgeon reaches the STT joint, the spot where small wrist bones meet.

The worn joint surfaces between the scaphoid and the two bones next to it are prepared. The scaphoid is one of the small bones on the thumb side of your wrist. Your surgeon then places a small, smooth, slightly curved disc of pyrocarbon into the joint as a spacer. Pyrocarbon is a hard-wearing material that sits comfortably against bone. The disc is not cemented or screwed in. It simply sits between the bones, held in place by the capsule, the sleeve of tissue that surrounds the joint. That capsule is then repaired.

The aim is to give the worn joint a new, smooth surface so the bones no longer grind on each other. Because the spacer keeps the height of the scaphoid, the other wrist bones keep their normal alignment. The operation also leaves the wrist's movement alone, since no bones are fused together.

Once the implant sits comfortably, your surgeon closes the wound with stitches and covers it with a dressing. Your thumb and wrist then go into a splint to protect the joint while things settle.

You will be asleep for the operation, and it is done as day surgery or with one night in hospital. The operation itself is a focused procedure on one small joint, so you are in and out of theatre within a standard theatre slot.

After the operation

You will wake up in the recovery area, where nurses keep an eye on you while the anaesthetic wears off. Your hand will be in a splint, and your arm may be supported in a sling for comfort. Pain relief is planned before you leave theatre, so tell the nurses if your pain is not settling. We leave the dressing on for about 10 days; please do not take it off before then unless we tell you to. We change or remove it when we see you. You may go home the same day or stay one night in hospital after this operation. Both are common, and your team will talk with you about which suits you. Please have someone stay with you for the first 24 hours. Numbness or weakness in your hand is expected in the first day if you had a nerve block; call the clinic if it lasts once the block has worn off, at about 24 hours.

Recovery

In the first days after surgery, your hand will be sore and swollen. This is normal and it settles gradually. Keeping your hand raised, often on a pillow, helps the swelling go down. Take the pain relief as prescribed, and tell our team if it is not working.

Your thumb and wrist stay in a splint to protect the joint while things heal. Ruby Doolan, our hand therapist at Extend Rehabilitation, will direct your rehabilitation and make any splint you need. She will show you exercises to keep your fingers moving gently while the splint does its job. You can use your hand for light tasks around the house, but avoid lifting, gripping firmly or loading the wrist. Sleep with your arm comfortable and supported; some people find a pillow under the arm helps.

Once the dressing comes off at your review, the splint stays on until your surgeon clears you to come out of it. Driving waits until then, because a splint stops you gripping the wheel safely. See our page on driving after upper-limb surgery for more detail. As the splint comes off and movement returns, hand therapy helps you rebuild grip strength. Most people are back at desk work and light daily tasks within 4 to 6 weeks. Heavier work, sport and gym activities come back later, usually between 3 and 6 months, once your grip is strong and pain-free.

Because the implant is a spacer rather than a fusion, the wrist keeps its movement as you recover. Recovery varies from person to person, so your timeline may differ; your surgeon and therapist will guide you along the way.

What can go wrong

Most patients do well, but problems can occasionally happen. Your surgeon and the team monitor you closely to spot any issue early.

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Some people continue to feel pain in the wrist after the operation, especially when they grip or load the hand. If your pain is not settling as expected, call the clinic. Pain that keeps getting worse despite your pain medicines needs a call to the clinic the same day.

The implant can move out of its position in the joint. You might notice a new clicking or grinding feeling, or pain that returns after a period of improvement. If this happens, bring it up with your surgeon at your next review. If the implant fails, it can be removed and the joint treated another way.

Calcium can sometimes form in the tissues around the joint. This may feel like stiffness or aching near the base of the thumb. Mention it at your next review if you notice it.

A small skin nerve near the incision can become irritated. This can cause numbness, tingling or sensitivity around the scar. Tell your surgeon at your next review if this does not settle.

Infection is a risk with any operation. Watch the area around your dressing for spreading redness, or fluid or pus leaking from the wound. A fever can also be a sign. Call the clinic the same day if you notice any of these.

Stiffness in the thumb or wrist can develop while the joint heals. Hand therapy and the exercises your therapist gives you help prevent this. If your hand stays stiff once you are out of the splint, raise it at your next appointment.

Heavy loading of the wrist in extension, such as in some racquet sports or heavy manual work, can wear or dislodge the implant. If you do these activities, discuss them with your surgeon before surgery.

Go to the emergency department if your fingers or hand turn pale, cold, white, blue or dark, as this can be a sign of a circulation problem.

The complications table on this page lists typical rates if you want the specifics.

When to call us

Most problems are picked up early when you tell us about them. Call the clinic the same day if you have a fever, spreading redness around the wound, or fluid or pus leaking from it. Call the clinic the same day too if your pain keeps getting worse despite your pain medicines.

Numbness or weakness in the first 24 hours after a nerve block is expected. Call the clinic if it lasts once the block has worn off, at about 24 hours.

Go to the emergency department if you have calf swelling or pain, or shortness of breath or chest pain, as these can be signs of a blood clot. Go to the emergency department as well if your fingers, hand or thumb turn pale, cold, white, blue or dark, as this can be a sign of a circulation problem.

If you cannot reach the clinic, out of hours or on a weekend, go to your nearest emergency department.

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Complication rates from published literature

Pooled from 5 published studies. These are population-level rates, not your individual risk — your surgeon will discuss what applies to you.

COMPLICATION	REPORTED RATE	NOTES
Calcium forming around the joint	**24%**	Seen on X-ray in 4 of 17 people at about five years.
Tilt of the wrist bones on X-ray (DISI)	**6-22%**	Appeared after surgery in 1 of 17 people in one series and 4 of 18 in another; the implant aims to limit this by keeping the height of the scaphoid.
Implant moving out of position	**0-6%**	None in 22 implants in one series; 1 painless dislocation in 17 in another.
Further surgery	**5%**	95% of Pyrocardan implants needed no further operation at about five years. A different pyrocarbon design (STPI) had 7 revisions in 29, mainly for pain.
Implant breakage	**Rare**	Reported in a tennis player who loaded the wrist heavily in extension.

I have read this information and have had the opportunity to ask Dr Hirpara questions about the procedure, its expected recovery, and the complications listed above.

PATIENT — PRINT NAME

SIGNATURE

DATE

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