



TECHNOLOGICAL INNOVATIONS
The new type of prosthesis made from a new material called pyrocarbon, rather than metal, has already shown promising results according to Mr Lam. The images show the traditional type of surgery (left) and the new type of prosthesis (right). PHOTO: BMI

New material gives patients freedom to move

■ **Question:** How is technology helping people who need bone and joint surgeries?

■ **Answer:** New materials are being used in wrist and knee operations to improve the healing process.

Innovations in the materials used for operations like joint replacements and repairing torn ligaments can make a big difference to the chances of getting good results. There's a huge research effort to develop new materials that will give patients and surgeons more options and improve the probability of a long-term recovery.

Arthritis in the wrist joint is common among people with rheumatoid arthritis and osteoarthritis. The traditional surgical treatment — wrist fusion — is an operation to fix the bones in your wrist solidly to the bones in your hand. This reduces pain and retains the strength of the joint, but makes the wrist immobile. So patients would sometimes “put up with the pain rather than have the lack of movement,” says consultant orthopaedic surgeon, Mr Francis Lam, from BMI Bishops Wood Hospital.

Mr Lam uses a new type of operation for wrist arthritis which

uses an artificial joint (prosthesis) made from a material called pyrocarbon. This new material is believed to be better than traditional metal prosthesis as its density is closer to human bone.

There isn't much evidence on how well it works in patients in the UK yet, but Mr Lam says the results of studies in other countries are promising. “Using the prosthesis in this way is a new advancement in medicine so we don't have long-term results at present. But the results from my practice show that compared to the traditional type of surgery, patients are able to do more. I had one patient who couldn't drive because she couldn't change gears, but since having the new type of prostheses she is able to drive and it has made a big difference to her life.”

Cutting edge technology

Mr David Houlihan-Burne, consultant orthopaedic surgeon at BMI Bishops Wood Hospital, says that, after many years of trial and error, new materials are becoming available to repair damaged knee cartilage and torn knee ligaments.

People with these injuries could now have an operation to implant



Mr Francis Lam
Consultant
orthopaedic
surgeon

a scaffold made of a new type of plastic into the knee during key-hole surgery.

“We have been for years trying to engineer materials to encourage regrowth of knee cartilage but previous materials had mechanical properties that were very poor. These new scaffolds encourage the growth of blood vessels and cells called fibroblasts, which repair the damage to the knee.

“It's very cutting edge so there aren't many people using it, but it is being done privately and in the NHS. It usually takes around six months to recover after anterior crucial ligament surgery but this new technology could cut that down to three. It appears to be a more reliable technology that can give patients quicker results and a faster recovery.”

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Recognise the signs of rare conditions

■ **Patient groups can offer valuable advice and help provide support for those living with rare conditions, says Alastair Kent of Genetic Alliance UK.**

A rare disease is defined as one that affects fewer than 5 in 10,000 people in a population. “But it's important to remember that, taken collectively, these diseases aren't that rare. Around 3.5 million people in the UK has a rare disease,” says Alastair Kent, director of Genetic Alliance UK.

This definition includes diseases like osteogenesis imperfecta (OI) or brittle bone disease. The Genetic Alliance UK estimates that OI affects 1 in 10,000 people in the UK. It causes frequent fractured bones, weakness in the muscles and joints, curved bones, back problems and short stature.

An odyssey to diagnosis

A GP may only see one person with OI during their whole career. This means getting a correct diagnosis and the right care can be “an odyssey,” says Kent.

“Patients with rare bone diseases struggle to get a diagnosis and it can take years to find out what the problem is. But getting a diagnosis does not always mean they get coherent and appropriate treatment.”

People with rare diseases find that awareness among family, friends and the general public is even lower than in the medical profession.

“We can raise awareness, but there also needs to be more sensitivity towards the issue,” says Kent. “The knowledge and recognition of the rare diseases among the general public is low. If you're a parent of a child with asthma or diabetes, people will recognise those diseases as genuine and real. But people with rare diseases are more likely to be greeted with incredulity or an inquisition.”

People with rare diseases often face stigma and isolation and so patient support groups can be hugely important in offering support and raising awareness amongst the general public. “It can be lonely if you think you are the only one.” That's where patient support groups can be really valuable. They offer support, education, and the simple reassurance that you're not the only person in the world who has a rare disease.”

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