

## Spinal fusion

# Technologies boost back surgery outcomes

Spinal fusion surgery is undertaken to relieve pain in the spine by literally “fusing” together the pieces of bone that are triggering pain in a section of the spine.

“Technically, it’s the union of as few as two of the spinal bones, although to be effective it usually involves more,” says Dr Michael Wong, neurosurgeon and spinal expert from Melbourne’s EPC Health Clinic.

“Fusion can be done along the whole length of the spine, most commonly in the neck and lower back. The fusion is achieved by using implants such as screws, plates, spacers and bone graft.”

Technologies such as 3D-printed titanium spacers, spinal screws and bone grafts improve the results of fusion.

Looking at a three-dimensional image of the spine after fusion with pieces of equipment, you could be forgiven for thinking the human back had been turned into a machine.

However, despite the metallic nature of the items inserted, surgery has been very successful in dramatically lowering pain levels.

“And because today there is so much more choice in the implants that are used, more fine-tuning in the exact placement and more precise crafting of the pieces inserted, greater pain relief can now be achieved,” Dr Wong says.

Spinal fusion eliminates movement between the fused spinal bones. Although it may sound unnatural, it is the best surgery for many degenerative spinal conditions. This is because the natural movement of the

spine is often the cause of pain.

However, in a majority of cases, pain is also caused by nerve compression. Supporting structures of the spine are often removed in the process of surgery for nerve decompression.

Fusion is therefore required in these cases to reinforce the spine after removal of the bony structures that have compressed nerves.

On the other hand, if fusion is done without nerve decompression, patient pain is unlikely to improve after surgery.

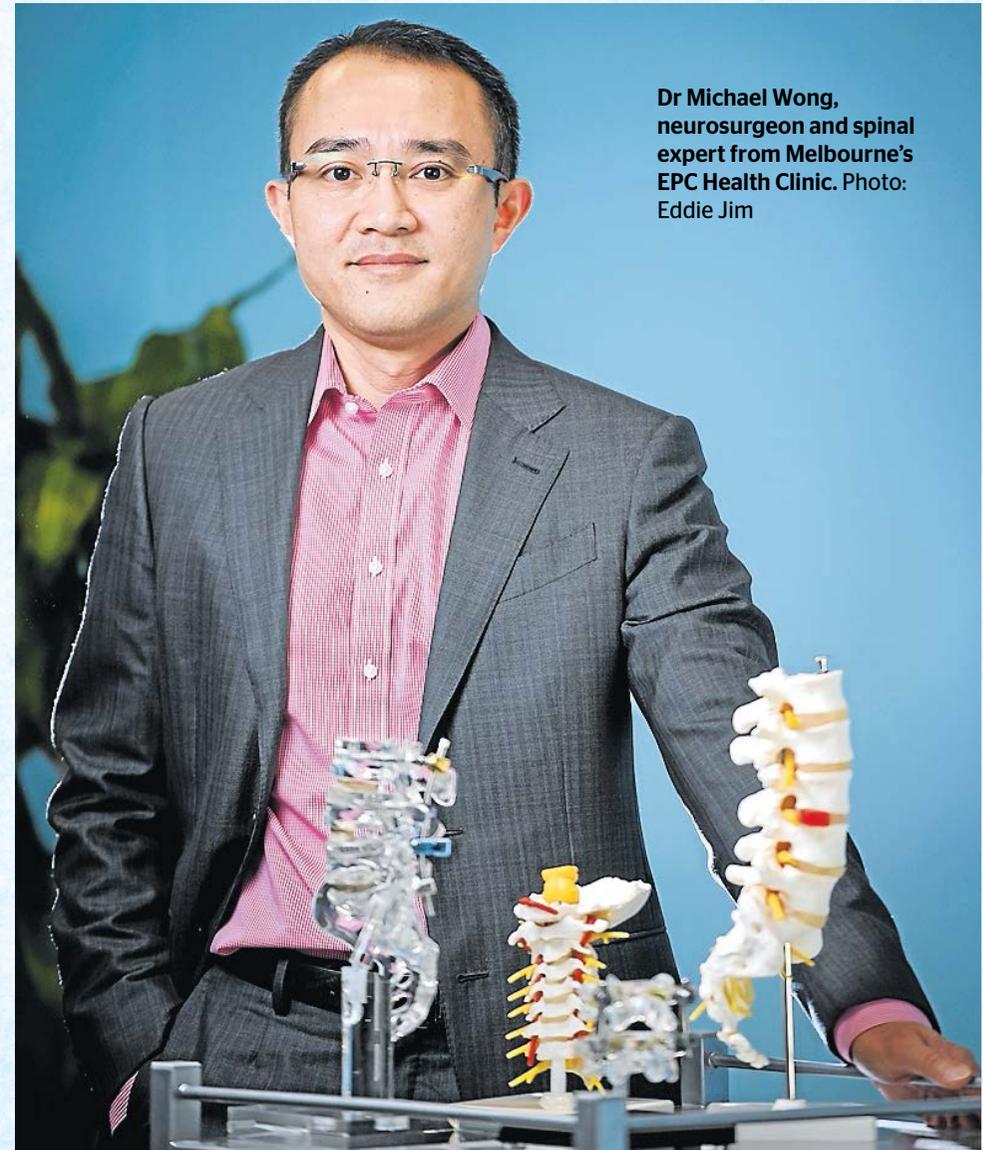
Fusion using minimally invasive surgery, or keyhole surgery, has become popular in recent years.

But Dr Wong warns that this type of surgery has its limitations. Keyhole surgery doesn’t work quite as well for spinal fusion as it does, for example, in gall bladder surgery, where an organ with only a small diameter needs to be removed.

“There is no convincing proof that this type of surgery produces better pain relief long term in back surgery.

“One reason is because if a patient has widespread nerve compression, for example down much of the length of the back, then a wider approach to decompress the nerves is required to resolve the symptoms,” he says.

“Many minimally invasive surgeries fail due to inadequate nerve decompression or incomplete fusion. Patients need to understand that long-term resolution of their spinal pain often is not related to the length of the skin incision; it is more related to what is done inside the spine.”



Dr Michael Wong, neurosurgeon and spinal expert from Melbourne’s EPC Health Clinic. Photo: Eddie Jim

Patients should seek advice on the best type of surgery and also discuss with a surgeon their view on the most proven and

studied technologies – and if uncertain, always feel confident about asking for a second opinion.