

Synchronous Combined Anterior and Posterior Fusion (S.C.A.P.F)

This procedure is used when either a very extensive spinal fusion is necessary to treat the symptoms of lumbar spinal pain, with or without nerve root pain, or when the spine requires greater stability. The advantage of the combined approach is that the added security leads to a better fusion rate; the disadvantage is that it is, essentially, two operations in one and therefore risks some of the complications of both procedures. It remains, however, an excellent technique for complex spinal problems, in particular for patients who have had previous spinal surgery.

Who Needs It?

Patients complaining of pain in the back, on the spine and often spreading to buttocks or groin, may well have a condition known as "discogenic pain". This is intended to mean pain coming from a disc (literally it doesn't!). This is a common cause of back pain in the middle aged and elderly and is increasingly being seen in younger people as well.

The pain is often made worse by bending and sitting and impact on the spine, such as tripping or making sudden movements, may cause an aggravation. It usually, but by no means always, affects one or both of the lower lumbar discs.

If the spine is unstable, i.e. the vertebrae are moving excessively and this causes pain, then this procedure is a good method of securing the spine at the affected level.

How is it done?

The patient is positioned flat on their back on operating table under a general anaesthetic and the front of the spine is (usually) approached first. A skin incision is made in the lower abdomen, the peritoneum, containing the bowel, is mobilised and the surgeon can then see the spine. The blood vessels on its surface are carefully moved to expose enough of the affected disc or discs and these can then be removed. To prevent the spine collapsing a spacer is put into the disc space, which holds the bones in position, whilst bone graft (often using artificial bone) heals - a "fusion". To increase the chance of success, by further supporting the spine, the wound is closed and the patient is turned over for the second stage of the operation. A second incision is made on the back, over the affected disc(s) and the bone is identified and confirmed with an x-ray. Screws are then passed into the bones to lock the joints together (trans-laminar facet screws) or into each side of the bone above and below the affected disc, the screws then being joined with a short metal rod. Additional bone graft is then positioned to reinforce the fusion.

What are the results?

Most people will have an improvement in their pain, but, obviously, there are many factors determining success. These need to be discussed in detail with your surgeon. SMOKING is known to badly affect the outcomes in fusion surgery, as may osteoporosis.

What are the risks of this operation?

Risk	Cause	% Risk
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		(note figures vary)
Nerve injury/paralysis	Damage to the nerve whilst removing disc/bone or inserting fusion devices	<1
Fluid leak	Small tear in the nerve sheath allowing leakage of cerebrospinal fluid	<1 (But higher if previous surgery)
Infection	Contamination during surgery or, rarely, late infection via the blood	Approx 1
Back pain	Some patients will develop back pain due to the stretching of the spine	Transient and dependent upon fitness
Adjacent disc damage	The stiffening effect of the fusion puts more pressure on the disc above (or below)	4 - 12% (some papers say higher)
Failure of fusion	If the bone graft does not heal, the pain may return	Up to 15%, depending on technique used
Bowel injury	Bowel is retracted during anterior surgery	<1
Bladder/ureter injury	Structures are retracted during anterior surgery	<1
Impotence	Retraction or injury to a small nerve in front of the spine leads to retrograde ejaculation in men	Approx 1 with the retro-peritoneal approach
Warm leg	The sympathetic nerve runs alongside the lumbar discs. If damaged the left leg (usually) will feel warmer for some months after the operation	1 - 5 (but higher if previous surgery)
Wound pain	Surgery	All to some extent