

FACT SHEET — SPINAL STRUCTURAL

Spondylolisthesis

Vertebral slippage — understanding causes, grades, symptoms, and management, with a focus on the most common and most overlooked type: degenerative spondylolisthesis in women

Spondylolisthesis occurs when one vertebra slips forward on the vertebra below it. It is more common than most people realise, affects a wide age range, and is frequently present without symptoms. When it does cause pain, understanding the type, grade, and individual pattern is essential to getting the right management — because the wrong approach can significantly slow recovery.

Degenerative spondylolisthesis — the most common and most overlooked type

Why this condition matters

Degenerative spondylolisthesis is one of the most consistently mismanaged conditions in back pain practice. Middle-aged women with this presentation are frequently told they have a muscle strain, given generic flexion-based exercises that are often the wrong direction of movement, and sent away without imaging. Years of misdirected treatment follow. Understanding this condition — and recognising its characteristic pattern — can change the outcome significantly.

Who gets degenerative spondylolisthesis

Degenerative spondylolisthesis is the most common type overall. It occurs when age-related degeneration of the intervertebral disc and facet joints allows one vertebra to gradually slip forward on the one below. L4 slipping on L5 is by far the most common level. It most commonly affects:

Who is most affected	Why
Women over 50	Significantly more common in women than men — approximately 3:1. The reason is not fully understood but hormonal effects on ligamentous laxity and different spinal geometry are likely contributors. This is one of the most important demographic facts about the condition that many practitioners overlook.
Perimenopausal and postmenopausal women	The decline in oestrogen at menopause accelerates disc degeneration and reduces the structural support of the spinal ligaments. Many women first develop symptoms in their 50s for this reason.
People with degenerative disc disease	As the disc loses height, the facet joints take more load and their geometry changes, allowing forward slippage. The two conditions frequently coexist.
Sedentary individuals	Weak core and gluteal muscles provide less dynamic support to the lumbar spine, increasing the load on the passive structures and accelerating degenerative change.

The characteristic pattern — how to recognise it

The presentation of degenerative spondylolisthesis has a recognisable pattern that, once understood, is relatively straightforward to identify. The problem is that it can look very similar to a muscle strain on the surface — which is why it is so often missed.

Extension-dominant pain	Pain that is consistently worse with leaning back, standing for prolonged periods, and walking downhill. This is the single most characteristic feature. It reflects the increased posterior element loading that occurs when the already-slipped segment is compressed further in extension.
Central lower back pain	Typically central or slightly to one side, at the level of the slip (usually L4/5). Unlike disc herniation which tends to be more lateral, the pain of degenerative spondylolisthesis is often felt as a deep, central ache.
Bilateral buttock pain	Pain spreading into both buttocks is common and reflects the involvement of the posterior elements and SIJ-adjacent structures at the affected level. This can be mistaken for sacroiliac joint dysfunction or piriformis syndrome.
Sitting intolerance	Prolonged sitting loads the lumbar spine in a way that stresses the degenerated segment. Many patients report that they cannot sit for long periods without pain increasing, and find relief with movement or lying down.
Relief with forward lean	Leaning forward slightly — on a trolley, a desk, or walking slightly stooped — opens the spinal canal and reduces posterior element compression. This is the equivalent of the trolley sign seen in spinal stenosis, which frequently coexists.
Leg symptoms in more advanced cases	As the slip progresses or spinal stenosis develops alongside, neurogenic claudication may develop — leg heaviness and aching on walking that eases with sitting or forward lean. True sciatica from nerve root compression can also occur.
No leg pain in early presentation	In the early stages, there is often no leg pain at all. This is important because it means the condition can look identical to a simple mechanical back strain, and without imaging it may not be identified.

■ The most common misdiagnosis scenario

- A woman in her 50s presents with lower back pain aggravated by leaning back and prolonged standing
- She is told she has a muscle strain or general wear and tear
- She is given flexion-based exercises (knees to chest, cat-cow, forward bending stretches)
- These exercises repeatedly load the unstable segment in the wrong direction
- Her pain does not improve or worsens over months
- She sees multiple practitioners without imaging being arranged
- Eventually an MRI reveals degenerative spondylolisthesis that has been present throughout
- The right management — extension-avoiding exercise, core stability, appropriate loading guidance — was never given

Why the wrong exercises make it worse

This is one of the most clinically important points about degenerative spondylolisthesis and the one most likely to affect you if the condition has been missed. Generic back pain exercise programmes typically include significant flexion loading — forward bending, knees to chest, cat-cow stretches, and sit-ups or crunches. For most back pain, these are appropriate. For spondylolisthesis they can be harmful.

Why flexion loading is problematic

In spondylolisthesis, the affected vertebra has already slipped forward. Repeated flexion loading can increase the shear force on the unstable segment, potentially worsening the slip and increasing pain. The appropriate exercise approach is the opposite — building the muscles that control and support the affected segment in a neutral or slightly extended position, without repeated flexion. This is a specific, targeted approach that requires proper assessment to implement safely.

What imaging shows

Degenerative spondylolisthesis is diagnosed on imaging. The important point is that standard X-rays taken lying down may underestimate or miss the slip entirely, because the segment reduces in a lying position. The most informative investigations are:

Standing lateral X-ray	The slip is most visible on a weight-bearing lateral X-ray because the segment is loaded. Many practitioners only request supine X-rays, which can miss or significantly underestimate the degree of slip.
MRI scan	Shows the degree of disc degeneration, any associated spinal stenosis, nerve root involvement, and the soft tissue changes around the affected segment. Essential if leg symptoms are present.
Flexion/extension X-rays	Dynamic X-rays taken in forward and backward bending can reveal instability — the degree of movement at the affected segment between the two positions. This is particularly useful for assessing whether surgical stabilisation is warranted.

Grading — how much has it slipped?

The Meyerding grading system classifies spondylolisthesis by the percentage of forward slippage of the vertebra on the one below. Degenerative spondylolisthesis is almost always Grade I or II.

Grade	Clinical significance for degenerative type
Grade I — 0–25% slip	Most common grade for degenerative type. Usually manageable with conservative care. Often asymptomatic. Exercise, manual therapy, and lifestyle modification are the primary treatments.
Grade II — 25–50% slip	May cause more significant symptoms. Conservative management is still appropriate as first-line treatment. Surgical assessment may be considered if conservative management fails over 3–6 months, particularly if neurological symptoms develop.

Grade III and above	Very uncommon in degenerative type — the degenerated disc and facet joints tend to stabilise rather than allow further progression. If present, specialist assessment is warranted.
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The natural history — important reassurance

Degenerative spondylolisthesis, unlike the isthmic type in young people, tends to stabilise over time. As the disc continues to degenerate and the facet joints develop further arthritic change, a degree of natural stabilisation occurs. This means that with the right management, most people with Grade I and II degenerative spondylolisthesis achieve good long-term function without surgery. The key is getting the right management — which starts with the correct diagnosis.

Other types of spondylolisthesis

Type	Key features
Isthmic (Type II)	Results from a stress fracture of the pars interarticularis (spondylolysis). Most common in young athletes — particularly fast bowlers, gymnasts, and rowers. L5 on S1 is the most common level. Presents with extension-dominant back pain in a young, active person. Often missed for months or years.
Congenital (Type I)	Present from birth due to abnormal vertebral development. Rare. Usually identified in childhood or adolescence.
Traumatic (Type IV)	Caused by acute fracture of the posterior arch from injury. Requires prompt medical assessment.
Pathological (Type V)	Caused by bone disease — tumour, infection, or Paget's disease — weakening the posterior elements. Rare but important to exclude in older patients with atypical presentation.

Management of degenerative spondylolisthesis

The vast majority of degenerative spondylolisthesis is managed without surgery. The foundation of conservative management is specific, targeted rehabilitation that differs meaningfully from generic back pain exercise programmes.

Specific stabilisation exercise	The primary treatment. Exercises targeting the deep stabilising muscles — multifidus and transversus abdominis — in neutral or extended positions. Pilates, when properly guided, is particularly appropriate. Flexion-dominant exercise programmes should be avoided.
Gluteal and hip strengthening	The gluteal muscles and hip extensors are critical to lumbopelvic stability. Weakness in these muscles increases the demand on the passive structures of the slipped segment. Specific gluteal strengthening is a key component of management.

Manual therapy	Gentle mobilisation of the affected and adjacent segments, soft tissue work, and specific movement guidance. High-velocity manipulation at the slipped level requires careful individual assessment. An experienced osteopath or physiotherapist can provide appropriate manual therapy safely.
Activity modification	Identifying and modifying activities that consistently aggravate symptoms. Extension-loaded activities and sustained standing require particular attention. This does not mean avoiding activity — it means loading the spine appropriately.
Pain management	Anti-inflammatories and paracetamol for acute flares. If nerve root symptoms are present, nerve pain medication may be appropriate. Steroid injection can reduce inflammation and create a window for rehabilitation.
Surgical assessment — when?	Surgery is considered when: conservative management has failed over 3–6 months; significant neurological deficit is present or worsening; quality of life is severely affected. Spinal fusion at the affected level has good outcomes for appropriately selected patients with Grade I–II degenerative spondylolisthesis.

What to ask your practitioner

If you suspect degenerative spondylolisthesis may be relevant to your back pain, these are the key questions worth raising:

- **Have I had a standing lateral X-ray?** A supine X-ray may miss or underestimate the slip.
- **Are the exercises I have been given appropriate for spondylolisthesis?** Flexion-dominant programmes may be counterproductive.
- **Is there associated spinal stenosis?** The two conditions frequently coexist and the management overlaps.
- **What grade is the slip?** Grade I and II have a good prognosis with conservative management. Grade III and above warrants specialist assessment.
- **Is there any instability on dynamic X-ray?** Movement between flexion and extension views indicates instability that influences management.
- **What should I avoid?** Specific activity guidance based on your grade and presentation should be part of any management plan.

Related conditions and further reading

Spondylolysis	The pars stress fracture that causes isthmic spondylolisthesis in young athletes.
Spinal stenosis	Canal narrowing that frequently coexists with degenerative spondylolisthesis.
Degenerative disc disease	The disc degeneration that drives the degenerative type.
Facet joint syndrome	Facet arthrosis that occurs alongside and contributes to degenerative slip.

Pilates and yoga for back pain	Why Pilates is particularly appropriate for spondylolisthesis rehabilitation.
Surgical considerations for back pain	When spinal fusion is considered and what it involves.
Osteoporosis and back pain	Bone density reduction that can coexist in women over 50.

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Briefly describe your back pain
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