Your spine and your options

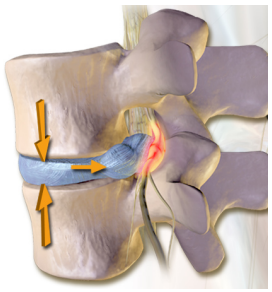
What is causing your pain, how we find it, and what really helps.

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What is going on

Almost every spine problem is one of two things. **Nerve pain** runs down an arm or leg as pain, tingling or weakness, or shows up as trouble walking. It means a nerve or the spinal cord is being squeezed by a disc, a bone spur or a narrowed canal. **Back or neck pain by itself** comes from worn discs and joints, or from the spine losing its shape.

Wear on a scan is normal, not a disaster: worn discs show up in **37 of 100 pain-free 20-year-olds and 96 of 100 pain-free 80-year-olds**.[1] What matters is whether the scan matches your symptoms and your exam.



A bulging disc (blue) pressing on the nerve (yellow)

How we find the cause

X-ray
Bones and their line-up; shows slipping when you stand or bend. Does not show nerves.

CT scan
Fine bone detail: fractures, bone spurs, whether a fusion has healed.

MRI
Best picture of discs, nerves and spinal cord: *which* nerve is pinched and how badly.

Test injection
Numbing medicine on one joint or nerve under X-ray. If the pain switches off for a few hours, we found the source.[2]

Treatment goes in four steps

1 **Keep moving, physical therapy** → 2 **Medicines** → 3 **Injections** → 4 **Surgery**

Most nerve pain settles within 6 to 12 weeks with step 1 alone.[3] Steps 2 and 3 ease pain or confirm the diagnosis; only surgery changes the structure (Sheet 2).

Why timing matters. A fair trial of non-surgical care is 6 weeks to 3 months. After that, waiting costs you: people with nerve symptoms for more than 6 months recover less, with or without surgery.[4] A squeezed spinal cord is treated sooner (Sheet 4).

What you control. Smoking makes a fusion more likely to fail and raises infection risk; quitting before surgery lowers both.[5] Blood sugar, weight and fitness improve every result here.

Go to the emergency room for new bladder or bowel trouble, groin numbness, or an arm or leg that is quickly getting weaker.

Your plan today

Diagnosis: _____ Date: _____

- ☐ Activity + physical therapy
- ☐ Anti-inflammatory, ____ weeks
- ☐ Imaging: X-ray / CT / MRI
- ☐ Test injection: _____
- ☐ Steroid injection
- ☐ Nerve ablation
- ☐ Surgery discussion
- ☐ Recheck in ____ weeks
- ☐ Other: _____

1 Brinjikji W et al. AJNR Am J Neuroradiol 2015;36:811–16. · 2 Bogduk N, ed. ISIS Practice Guidelines, 2nd ed. 2013. · 3 Peul WC et al. N Engl J Med 2007;356:2245–56. · 4 Rihn JA et al. J Bone Joint Surg Am 2011;93:1906–14. · 5 Jackson KL, Devine JG. Global Spine J 2016;6:695–701. Illustration: Blausen Medical 2014, CC BY 3.0.

General information from the spine clinic of Dr. Mohamed J.H. Al-Amoodi. Your own plan may differ; it does not replace a visit.

Medicines and injections

What the research shows about each one, in plain words.

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If we do not prescribe an opioid, gabapentin or a muscle relaxant, it is not because we doubt your pain. Good studies show these pills work no better than simpler options for spine pain, and they carry real risks. Pills and injections make the weeks more bearable; none of them fix a pinched nerve or a worn joint. If pain still runs your life after a fair trial, the question becomes whether surgery can fix the cause, not which stronger pill to try next.

Pills

Medicine	What the research shows	Watch out for
Tylenol (acetaminophen)	No better than a sugar pill for back pain in a trial of 1,650 people.[1]	Safe at normal doses; liver at high doses.
Anti-inflammatories (ibuprofen, naproxen, meloxicam)	The pill with the best evidence and the first one guidelines recommend. Short courses, with food.[2]	Stomach ulcers, kidneys, blood pressure, bleeding. Not with blood thinners.
Muscle relaxants (cyclobenzaprine, methocarbamol)	A small effect in the first 2 weeks only, too small for most people to notice. Nothing after that.[3]	Drowsiness, dizziness, falls. Not for driving.
Gabapentin, pregabalin (Neurontin, Lyrica)	No better than a sugar pill for sciatica. For back pain, little benefit; about 1 in 6 gets brain fog, dizziness or blurred vision.[4]	Dangerous slowed breathing with opioids, in older adults, or with lung disease (FDA warning).[5]
Opioids (oxycodone, hydrocodone, tramadol)	Long-term back pain: no better than non-opioid pills after a year, with more side effects. New back or neck pain: no better than a sugar pill, and more people still in pain a year later.[6]	About 1 in 4 patients misuses them; about 1 in 10 becomes addicted.[7] Constipation, nausea, sleepiness.
Steroid pills (prednisone, Medrol pack)	For sciatica: a little better function, no better pain, no change in who needed surgery. Side effects in half.[8]	Blood sugar, sleep, mood, stomach; bone thinning with repeated courses.

Injections

Steroid injection (epidural)

Steroid placed next to the pinched nerve under X-ray. **Nerve pain down a leg or arm:** relief for a few weeks; no change a year later and no change in the chance of surgery.[9] **Stenosis walking pain:** no better than numbing medicine alone.[10] Best use: getting through a flare, or into physical therapy.

Test (diagnostic) injection

Numbing medicine only, on one facet joint nerve, the sacroiliac joint, or one nerve root, under X-ray. You keep a pain diary for the next few hours. If the pain switches off, that structure is the source. A single test is wrong about 1 time in 5, so we often confirm with a second before doing anything permanent.[11] It also tells us which level to operate on, if it comes to that.

Nerve ablation (radiofrequency)

Once a test injection proves a facet or sacroiliac joint is the source, its small pain nerves are heated through a needle. In well-chosen patients, half or more get at least 6 months of relief; the nerves regrow and it can be repeated.[11] Steroid put into the joint itself is no better than salt water.[12]

1 Williams, Lancet 2014;384:1586. · 2 Qaseem, Ann Intern Med 2017;166:514. · 3 Cashin, BMJ 2021;374:n1446. · 4 Mathieson, N Engl J Med 2017;376:1111; Shanthanna, PLoS Med 2017;14:e1002369. · 5 FDA Drug Safety Communication, Dec 2019. · 6 Krebs, JAMA 2018;319:872; Jones, Lancet 2023;402:394. · 7 Vowles, Pain 2015;156:569. · 8 Goldberg, JAMA 2015;313:1915. · 9 Chou, Ann Intern Med 2015;163:373. · 10 Friedly, N Engl J Med 2014;371:11. · 11 Bogduk (ed), ISIS Practice Guidelines 2013; Kennedy, Pain Med 2015;16:1500; MacVicar, Pain Med 2013;14:639. · 12 Kennedy, Pain Med 2019;20:246.

Pinched nerves in the low back

Sciatica from a disc, and spinal stenosis. Your doctor ticked the one that applies.

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☐ Sciatica from a disc (lumbar radiculopathy)

What it is. A disc in the low back has bulged or torn and is pressing on one nerve root. The nerve pain runs down one leg, often below the knee, with tingling, numbness or weakness. The leg pain is usually worse than the back pain.

What helps. Most people get better without surgery: the body shrinks the disc fragment over 6 to 12 weeks.[1] Keep moving, use an anti-inflammatory, and start physical therapy. A steroid injection can shorten a bad flare but does not change where you end up.[2]

Surgery (microdiscectomy). A small operation that removes the piece of disc lying on the nerve. Leg pain relief is much faster with surgery; at one year the surgery and wait-and-see groups look similar, and surgery patients keep a small edge in leg pain and function out to 8 years.[1,3]

Timing. Surgery is reasonable once leg pain is still severe after 6 to 12 weeks of non-surgical care. It is urged before symptoms pass 6 months: after that, recovery is worse with or without surgery.[4] Weakness that is getting worse moves the timeline up.

☐ Spinal stenosis (neurogenic claudication)

What it is. With age, the canal in the low back narrows from thickened ligament, worn joints and bulging discs, and the nerves are squeezed. Legs ache, feel heavy or go numb when you stand or walk; sitting, bending forward or leaning on a shopping cart brings relief.

What helps. Physical therapy with a forward-bending (flexion) program and staying active. Steroid injections are no better than numbing medicine alone for stenosis and do not help in the long run.[5] Without surgery, most people stay about where they are rather than worsening quickly.

Surgery (decompression, sometimes with fusion). Removes the bone and ligament squeezing the nerves. In the largest trial, surgery gave clearly better pain and walking at 3 months, holding through 2 years.[6] A fusion is added only when a vertebra has slipped or the segment is loose. Surgery relieves leg symptoms; it is not designed to cure back pain.

Timing. This is an elective decision that is yours to make. The usual trigger is when walking distance or quality of life has become unacceptable after about 3 months of non-surgical care. Weakness or bladder trouble changes that to urgent.

What surgery can and cannot do. Freeing the nerve reliably relieves leg pain. It does not reverse arthritis, and back pain that was there before may still be there after. Numbness and weakness recover more slowly than pain, and sometimes only partly, which is another reason not to wait too long.

What to expect after. Microdiscectomy: home the same or next day, walking right away, desk work in about 2 weeks, no heavy lifting for 6 weeks. Decompression: 1 to 2 nights in hospital, similar recovery, a few weeks longer if fused.

1 Peul, N Engl J Med 2007;356:2245. · 2 Chou, Ann Intern Med 2015;163:373. · 3 Weinstein, JAMA 2006;296:2441; Lurie, Spine 2014;39:3 (SPORT, 8-year results). · 4 Rihn, J Bone Joint Surg Am 2011;93:1906. · 5 Friedly, N Engl J Med 2014;371:11. · 6 Weinstein, N Engl J Med 2008;358:794 (SPORT stenosis). Recovery timelines: standard surgical experience.

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Neck nerve and spinal cord

Arm pain from a nerve root, or pressure on the spinal cord itself.

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☐ Pinched nerve in the neck (cervical radiculopathy)

What it is. A disc or bone spur in the neck is pressing on one nerve root. Pain, tingling or weakness runs down one arm, sometimes into the shoulder blade or a few fingers.

What helps. About 80 to 90 of every 100 people improve without surgery.[1] Physical therapy, an anti-inflammatory and time. A neck steroid injection helps roughly half of patients for 1 to 6 months.[1]

Surgery (ACDF, disc replacement, or foraminotomy). Frees the nerve from the front or the back of the neck. Arm pain relief is reliable and faster than waiting; by one year the surgery and non-surgery groups look similar.[2]

Timing. Surgery is offered when arm pain or weakness is still there after 6 to 12 weeks of non-surgical care, sooner if weakness is getting worse or the spinal cord is also being squeezed.

☐ Spinal cord compression (myelopathy)

What it is. Arthritis in the neck (or, less often, the mid-back) is squeezing the spinal cord itself, not just one nerve. Signs: clumsy hands, dropping things, trouble with buttons or handwriting, unsteady walking, numb legs, bladder urgency. Pain may be mild or absent, which is why it is easy to miss.

Why it is different. This is the one condition where waiting is the risk. Treated without surgery, 20 to 62 of every 100 patients get neurologically worse within 3 to 6 years, and lost function often does not come back.[3] Pills and injections do nothing for the cord.

Surgery (decompression, usually with fusion). Takes the pressure off the cord to stop the decline; most patients also improve. International guidelines *recommend surgery* for moderate or severe myelopathy, and surgery or closely supervised rehab for mild cases.[4] In a large multi-centre study, hand use and walking improved after surgery.[5]

Timing. Sooner is better: the longer the cord has been compressed, the less it recovers.[4,6] There is no 6-week trial here. A fall or minor neck injury on a compressed cord can cause sudden paralysis, so we also talk about protecting your neck while you wait.

What surgery can and cannot do. Freeing a nerve reliably relieves arm pain. Freeing the cord stops things getting worse and usually gives some recovery, but the goal is to stop the decline; what has already been lost may only partly return. Neck pain that was there before may still be there after.

What to expect after. Front-of-neck surgery: 1 night in hospital, a sore throat and some trouble swallowing for a few days, desk work in 2 to 3 weeks. Back-of-neck surgery: 1 to 3 nights, more muscle soreness, similar return to work. Driving once you are off strong painkillers and can turn to check mirrors.

1 AAOS OKU Spine 6, injections chapter; Engel, Pain Med 2014;15:386. · 2 AO Spine Comprehensive Overview 2020, cervical radiculopathy chapter. · 3 Karadimas, Spine 2013;38:S21; Nouri, Global Spine J 2022;12:39S. · 4 Fehlings, Global Spine J 2017;7:70S (AO Spine/CSRS guideline). · 5 Fehlings, J Bone Joint Surg Am 2013;95:1651. · 6 AO Spine 2020, myelopathy chapter. Recovery timelines: standard surgical experience.

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Wear-and-tear and alignment

Worn discs and joints, or a spine that has lost its shape.

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☐ Degenerative spine: disc, facet joint, sacroiliac joint, arthritis

What it is. Back or neck pain without a pinched nerve. The usual sources are the discs (about 4 in 10 cases), the small facet joints at the back of the spine (3 in 10) and the sacroiliac joints where the spine meets the pelvis (2 in 10).[1] Scans show the wear but cannot tell us which part hurts; most worn parts do not hurt at all.[2]

How we find the painful part. Test injections (Sheet 2): numbing medicine on a facet nerve or into the sacroiliac joint. If the pain switches off, that joint is the source. One test is wrong about 1 time in 5, so we often confirm with a second.[3]

What helps. Exercise, core strengthening and staying active have the best evidence; short courses of an anti-inflammatory if needed.[4] If a test injection proves a facet or sacroiliac joint is the source, nerve ablation gives 6 months or more of relief in half or more of well-chosen patients.[3] Steroid into the joint itself is no better than salt water.[5]

Surgery. Fusion for back pain alone is less predictable than surgery for nerve pain. It helps most when there is a clear target: a slipped vertebra, a loose segment, or one proven painful level.[6] For diffuse wear at many levels, surgery is usually not the answer.

☐ Deformity: scoliosis, kyphosis, flat back

What it is. The spine has lost its normal curves or line-up, usually after decades of disc wear. You lean forward or to one side, tire quickly standing, and pain builds through the day. Standing full-length X-rays measure it.

What helps. Physical therapy, conditioning and pain control keep you functioning. On average, non-surgical care holds pain and function where they are; it does not straighten the spine.[7]

Surgery (realignment and fusion). Big surgery with real benefit. In a multi-centre study, operated patients improved clearly in pain, function and quality of life at 2 years; the non-surgical group stayed the same.[7] About 7 in 10 had at least one complication, most minor, so we weigh fitness, bone strength and your goals carefully first.[7]

Timing. Not urgent unless nerves are involved. Surgery is chosen when disability is unacceptable despite a real trial of non-surgical care, and while you are still fit enough to recover well.

Being honest about back pain. Nerve surgery has a clear target and a predictable result. Back pain from wear does not. So we work harder to prove the source before operating, and the honest answer is sometimes "keep exercising, and let us manage the flares."

Before a fusion we will ask you to: stop smoking and nicotine, get blood sugar under control, have bone density checked and treated if low, and build up walking. Each one lowers the chance the fusion fails or gets infected.[8]

1 DePalma, Pain Med 2011;12:224. · 2 Brinjikji, AJNR 2015;36:811. · 3 Bogduk (ed), ISIS Guidelines 2013; Kennedy, Pain Med 2015;16:1500; MacVicar, Pain Med 2013;14:639. · 4 Qaseem, Ann Intern Med 2017;166:514. · 5 Kennedy, Pain Med 2019;20:246. · 6 Fritzell, Spine 2001;26:2521; Weinstein, N Engl J Med 2007;356:2257. · 7 Smith, Neurosurgery 2016;78:851. · 8 Jackson & Devine, Global Spine J 2016;6:695.

Spine fractures

Broken bones in the spine: when they heal on their own, and when they need surgery.

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☐ Compression fracture from thin bone (osteoporosis)

What it is. The front of a vertebra has crumpled, often with little or no injury, because the bone is thin. Sudden back pain, worse standing and walking, better lying down. The nerves are almost never involved.

What helps. Pain control and staying mobile. In most people the pain eases a great deal within 6 to 12 weeks as the bone heals, with the most improvement by 3 months.[1] A brace is for comfort only; it does not change healing. Short walks every day prevent the stiffness and weakness that bed rest causes.

Cement (vertebroplasty, kyphoplasty). If pain is still disabling after 3 to 6 weeks of this, bone cement can be injected into the fractured vertebra through a needle to stabilize it.[1] Most people go home the same day.

The most important treatment is for the bone itself. One osteoporotic fracture is the strongest warning of the next. We will check bone density and start or adjust osteoporosis treatment, plus calcium, vitamin D and balance work, so the next bone does not break.

☐ Fracture from an injury (fall, crash, burst fracture)

What decides the treatment. Two questions. Are the nerves or spinal cord injured? And is the fracture *stable*: are the strong ligaments at the back of the spine intact, so the spine will hold its shape while the bone heals? The CT answers the first part; the MRI shows the ligaments.

Stable fracture, normal nerve function. Heals without surgery. In a randomized trial, results were as good as surgery, and at 16 to 22 years the non-surgical group reported less pain and better function.[2] Bracing versus no brace makes no difference to healing; a brace is for comfort.[3]

When a fracture needs surgery. Any nerve or spinal cord injury; an unstable pattern (torn back ligaments, a dislocation); or collapse and bending forward (kyphosis) that keeps getting worse on follow-up X-rays. Screws and rods hold the spine still so it can heal, and the nerves are freed at the same time if needed.

Timing. Nerve injury is treated urgently. Unstable fractures are fixed within days. Stable fractures are watched: X-rays at about 2, 6 and 12 weeks to make sure nothing is shifting; if it does, the plan changes to surgery.

What to expect while healing. Bone takes about 3 months to knit. Pain fades well before that. Walk daily, avoid heavy lifting and twisting, and keep your follow-up X-ray visits even if you feel better: a fracture that is collapsing can be painless at first.

After surgery. Usually 2 to 4 nights in hospital, walking from day one, a brace only if we ask for it. Desk work in 4 to 6 weeks, heavier work after 3 months. The screws stay in; they rarely need to come out.

Call us or go to the emergency room for new numbness or weakness in the legs or arms, new bladder or bowel trouble, or pain that suddenly gets much worse.

1 McCarthy & Davis, Am Fam Physician 2016;94:44. · 2 Wood, J Bone Joint Surg Am 2003;85:773 and 2015;97:3. · 3 Bailey, Spine J 2014;14:2557. Healing and recovery timelines: standard surgical experience.

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