

Acute Intervertebral Disc Herniation (IVDD) in Dogs

Quick take

An **acute disc herniation** happens when the jelly-like centre of a spinal disc suddenly **bursts through its outer layer** and **compresses** the spinal cord.

It's one of the **most common causes of sudden paralysis or severe back pain** in dogs.

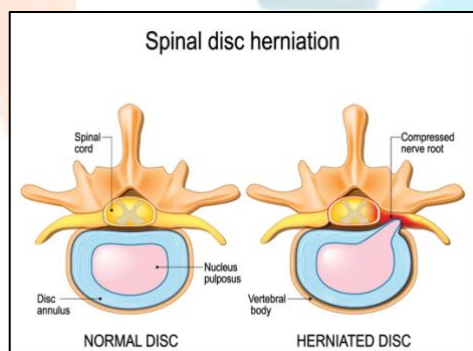
- **Chondrodystrophic breeds** (Dachshunds, French Bulldogs, Beagles, Corgis, Shih Tzus, Pekingese) are at highest risk.
- Severity ranges from pain only to complete paralysis and loss of deep pain sensation.
- **Surgery (decompression)** offers the best chance of recovery, especially if done within 24–48 hours of severe signs.

1) What's going on inside?

Between each pair of vertebrae sits a cushiony **intervertebral disc**, made of a **gel centre** (nucleus pulposus) and a **tough fibrous ring** (annulus fibrosus).

In acute disc extrusion:

- The inner gel shoots outward into the spinal canal (like toothpaste under pressure).
- It compresses the spinal cord, cutting off blood flow and damaging nerve tissue.
- The spinal cord swelling and inflammation worsen the injury over hours to days.



Why it happens?

- **Degeneration:** In certain breeds, discs **calcify and dry out early**, making rupture more likely even with mild activity (jumping off a couch).
- **Trauma** can also trigger rupture in any dog.
- Location: **~85%** occur in the **mid-back (thoracolumbar)** region; others in the **neck (cervical)** or lower back (lumbosacral).

2) What owners notice

- Sudden back or neck pain: crying, trembling, hunched posture, reluctance to move
- Wobbliness or dragging of hind legs
- Knuckling of paws
- Difficulty standing, walking, or climbing stairs
- In severe cases: paralysis and loss of bladder/bowel control



- May worsen rapidly within hours

Emergency tip: Dogs that suddenly can't walk or feel their toes need **immediate veterinary or neurosurgical care** — ideally **within 24 hours**.

3) Grading severity (neurologic status)

Grade	Signs	Typical treatment
1	Pain only	Strict rest, meds
2	Wobbly gait	Often surgery or medical management
3	Can't walk but can move legs	Surgery recommended
4	Paralysis, still has deep pain	Surgery urgent
5	Paralysis, no deep pain	Emergency surgery ASAP; guarded prognosis

4) Diagnosis

Tests used

- **Neurologic exam** — determines lesion location and severity
- **MRI** (gold standard) — shows compressed spinal cord and which disc is ruptured. Gives a better definition of the damage to the spine in patients with the worst (grade 5) stage.
- **CT myelogram or CT** — faster and cheaper than MRI scan, good sensitivity when combined with myelogram.
- **Bloodwork, urinalysis** — anaesthesia screening
- **X-rays** alone usually insufficient but can show disc calcification

Diagnosis and **timing** are crucial: the longer compression persists, the more irreversible nerve damage occurs.

5) Treatment options

A) Conservative (for mild cases only)

For Grade 1–2 dogs or surgery-ineligible cases:

- **Strict cage rest** (4–6 weeks)
- **Pain meds** (NSAIDs ± gabapentin, opioids)
- **Muscle relaxants** (methocarbamol)
- **Bladder care** if needed
- **Rehab/physiotherapy** after rest

May improve if only mild compression

Recurrence risk ~30–50%, and some progress to worse grades

B) Surgery — the gold standard for moderate to severe IVDH

Goal: Remove the disc material compressing the spinal cord.

Common techniques

Procedure	Location	Description
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Hemilaminectomy	Thoracolumbar (mid-back)	Removes part of vertebral bone to relieve pressure (most common)
Ventral slot	Cervical (neck)	Removes disc material through underside of neck
Mini-hemilaminectomy / dorsal laminectomy	Various	Variations for specific access or stability
Fenestration	Preventive- removes material from other discs to reduce recurrence	

Timing

- **Within 24–48 hours** for best outcomes, especially if losing motor function
- Dogs **without deep pain** for >48 hours have a guarded (~30–50%) recovery rate, even with surgery

6) Prognosis after surgery

Neurologic Grade	Surgery success rate	Notes
1–2	>95%	Excellent outcome
3–4	85–95%	Most regain ability to walk
5 (no deep pain <24h)**	50–60%	Guarded
5 (no deep pain >48h)**	<30–40%	Poor, though some still recover

Cats: outcomes similar when treated promptly, though acute herniation is rarer.

7) Complications & expected rates

Complication	Approx. rate	Notes
Pain/slow recovery	Common (10–20%)	Often resolves with rehab
Wound infection	3–8%	Usually superficial
Seroma/swelling	5–10%	Self-limiting
Recurrent disc herniation (same or another site)	10–20%	Fenestration reduces risk
Progressive myelomalacia (spinal cord “softening”)	<5%	Rare but fatal; early detection key
Urinary/fecal incontinence	Variable	Often improves with time/therapy
Permanent paralysis	Depends on pre-op grade	Most severe pre-op cases



8) Recovery & home care

Hospital

- Hospital stay: 2–5 days
- Pain control, urinary care, physiotherapy initiation
- Some need bladder expression at home initially

Home care (typical plan)

Time	What to do
Weeks 0–2	Strict crate rest, short harness walks for potty; pain meds
Weeks 2–4	Gentle rehab (passive range of motion, assisted standing)
Weeks 4–6	Gradual increase in activity; walking exercises
Weeks 6–8	Recheck exam ± imaging; many dogs walking independently
After 8 weeks	Resume normal life gradually; long-term conditioning & weight control

Rehabilitation (hydrotherapy, balance exercises) speeds recovery and strengthens core muscles.

9) Long-term management & prevention

- Keep weight lean
- Avoid high-impact jumps/stairs
- Use ramps and harnesses instead of neck collars
- Regular core strengthening exercises
- Consider preventive disc fenestration if multiple calcified discs

10) Questions to ask your surgeon

- What neurologic grade is my dog right now?
- How soon should surgery be done?
- Which surgical technique is best for this location?
- What is your success rate for dogs with this grade?
- Will you do preventive fenestration on other discs?
- What's the rehab protocol after discharge?
- What are signs of complications (esp. myelomalacia)?

11) Trusted veterinary references (English)

- ACVS (American College of Veterinary Surgeons): Intervertebral Disc Disease in Dogs
- VCA Hospitals: Disc Disease and Surgery in Dogs
- Cornell University Vet Hospital: IVDH client resources
- Veterinary Evidence (2022): Outcomes after decompressive surgery
- Brisson, BA, 2010, J Vet Intern Med: Review of disc disease classification & outcomes
- Jeffery et al., 2016, Vet Rec: Evidence-based management of canine disc extrusion
- Bottom line
- Acute disc herniation is a true neurologic emergency.

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- Prompt diagnosis and decompression surgery give the best chance for walking again — often >90% success if deep pain is present.
- Even severe paralysis can improve with timely surgery and rehab.
- Long-term, weight control, muscle conditioning, and jump avoidance are your dog's best protection.

