MADISON NEUROLOGY · NEUROLOGY SYMPTOM GUIDE

Back pain

Structured history, interpretation & clinical review

Symptom 6 of 94
Clinical educational workbook
Version 1.0 · October 2026

Not for clinical use. This guide cannot diagnose, triage, or exclude an emergency. Seek emergency care for severe, sudden, or worsening symptoms.

Contents

Scope and safe use 3

Section 1: Input form 4

- 1A. Immediate safety screen 4
- 1B. Timeline 4
- 1C. Discriminating features 5
- 1D. Associated findings 5
- 1E. Clinical context 5

Section 2: Interpreting the input form 7

Section 3: Clinical review 9

Selected references 11

> **Document purpose**
> A structured educational history and diagnostic-reasoning workbook. Treatment is outside its scope.

Scope and safe use

Back or radiating limb pain is classified by neurological distribution, cord or cauda-equina warnings, infection risk, trauma, and mechanical behavior.

Not for clinical use.
This educational workbook does not diagnose, triage, estimate probability, replace examination, or exclude an emergency. If a safety-screen answer is Yes or uncertain, follow the stated action rather than continuing routine interpretation.

How to complete the workbook

- Record the current episode and the person’s usual baseline; use a witness account for events with impaired awareness.
- Check one option per question unless a clinician documents a different combination. “Not sure” is unresolved information, not a negative answer.
- Complete the safety screen before all other sections. Record exact onset or last-known-well time for sudden deficits.
- Use Section 2 only after the form is complete. More than one pattern may be relevant; urgency takes precedence.
- Use Section 3 to plan focused examination and clinician-selected investigations. No test is automatic or universally required.

Specific escalation rule

New severe headache, new focal weakness or numbness, new speech/language difficulty, reduced consciousness, a prolonged seizure, severe breathing or swallowing difficulty, sudden visual loss, or rapidly progressive weakness requires emergency assessment. Call 911 in the United States.

Section 1: Input form

Checkbox history for Back pain

1A. Immediate safety screen

Is there new urinary retention, loss of bladder or bowel control, saddle numbness, or new sexual dysfunction?

☐ No ☐ Yes ☐ Not sure

If Yes: Go to an emergency department now for cauda-equina assessment; do not wait for routine imaging.

Is there rapidly progressing weakness in one or more limbs, a sensory level, or new inability to walk?

☐ No ☐ Yes ☐ Not sure

If Yes: Seek emergency assessment now for possible spinal-cord compression or another acute cord process.

Is there fever, immune suppression, recent spinal procedure, injection-drug use, cancer, or severe unremitting night pain?

☐ No ☐ Yes ☐ Not sure

If Yes: Arrange same-day assessment; fever or progressive neurological deficits require emergency care.

Did significant trauma precede the pain, or is there new deformity or immediate neurological loss?

☐ No ☐ Yes ☐ Not sure

If Yes: Seek emergency assessment now and avoid unnecessary movement of the spine.

> **Stop rule:** Any Yes answer triggers the action printed under that question. Any Not sure answer requires prompt in-person clarification; do not treat it as No.

1B. Timeline

How did the symptom begin?

☐ Suddenly, over seconds or minutes ☐ Over hours to days ☐ Gradually over weeks or months ☐ Longstanding or since childhood ☐ Not sure

Use the first occurrence for recurrent episodes; use the current episode for a changing symptom.

What is the overall course?

☐ One persistent episode ☐ Separate recurrent episodes ☐ Steadily worsening ☐ Fluctuating or variable ☐ Currently resolved

Has this exact pattern been assessed before?

☐ Definitely new ☐ The same pattern occurred before ☐ Present and stable for a long time ☐ Not sure

1C. Discriminating features

Where does the pain travel?

☐ Back or neck only ☐ Into one arm or leg ☐ Into both legs or around the trunk ☐ Variable or widespread

Is there numbness, weakness, or reflex-like change in the limb?

☐ No ☐ Numbness or tingling ☐ Weakness or giving way ☐ Both sensory and motor symptoms

What most clearly changes the pain?

☐ Movement, lifting, or posture ☐ Walking/standing; relieved by sitting or flexion ☐ Night/rest; not mechanically related ☐ Not sure

Is there cancer, osteoporosis, steroid use, recent infection, or significant trauma?

☐ No known factor ☐ Yes ☐ Not sure

1D. Associated findings

Are there other neurological symptoms—weakness, numbness, speech change, double vision, swallowing difficulty, or severe imbalance?

☐ Yes ☐ No ☐ Not sure

Are there systemic clues—fever, weight loss, cancer, infection risk, pregnancy/postpartum status, or a new medication?

☐ Yes ☐ No ☐ Not sure

How much does this affect daily activity?

☐ Noticeable but activities continue ☐ Some activities are limited ☐ Cannot perform usual activities ☐ Not sure

1E. Clinical context

Who is being assessed?

☐ Adult or adolescent ☐ Child under 12 ☐ Adult aged 65 or older

Could a medicine, substance, withdrawal, or recent dose change be relevant?

☐ No plausible contributor ☐ Yes or possibly ☐ Not reviewed

Include sedatives, dopamine-blocking drugs, stimulants, decongestants, anticholinergics, alcohol, and non-prescribed substances when relevant.

Is there a relevant neurological, muscular, metabolic, cardiovascular, autoimmune, or sleep disorder?

☐ No known relevant condition ☐ Yes ☐ Not sure

What prior information is available?

☐ A previous examination or investigation ☐ Prior records but no clear explanation ☐ No useful prior assessment ☐ Not sure

Additional history and documentation

Record exact dates/times, witness details, relevant medication doses and changes, prior investigation reports, and the person’s baseline function.

Section 2: Interpreting the input form

Answer combinations generate a differential and an assessment pathway—not a diagnosis.

> **Precedence:** Emergency safety answers override every pattern below. Otherwise, the highest-urgency fully matched pattern takes precedence. If entries are incomplete, contradictory, or match no pattern, use the unresolved-information pathway.

Pattern 1: Radiating nerve-root pattern

Where does the pain travel? Into one arm or leg
Is there numbness, weakness, or reflex-like change in the limb? Numbness or tingling / Weakness or giving way / Both sensory and motor symptoms

Prompt clinical review pattern — Promptly

Pain radiating into one limb with sensory or motor features follows a radiculopathy pathway.

Differential to review:

- Radiculopathy or nerve-root compression
- Fracture, infection, malignancy, or inflammatory spinal disease

Action: Arrange an in-person medical or neurological review promptly, usually within days. Seek sooner care if the pattern changes.

Pattern 2: Walking-related stenosis pattern

What most clearly changes the pain? Walking/standing; relieved by sitting or flexion
Where does the pain travel? Into both legs or around the trunk

Prompt clinical review pattern — Promptly

Walking-related bilateral leg symptoms raise spinal stenosis after vascular circulation and other mimics are considered.

Differential to review:

- Spinal stenosis or cord compression

Action: Arrange an in-person medical or neurological review promptly, usually within days. Seek sooner care if the pattern changes.

Pattern 3: Systemic or fracture-risk context

Is there cancer, osteoporosis, steroid use, recent infection, or significant trauma? Yes

Urgent assessment pattern — Same day

Cancer, infection, osteoporosis, steroid use, or trauma changes the threshold for targeted investigation.

Differential to review:

- Fracture, infection, malignancy, or inflammatory spinal disease

Action: Arrange same-day medical assessment. If symptoms are rapidly worsening or severe, call 911.

Pattern 4: Mechanical local pattern

Where does the pain travel? Back or neck only
What most clearly changes the pain? Movement, lifting, or posture
Is there numbness, weakness, or reflex-like change in the limb? No

Structured clinical review pattern — Routine review

Local movement-related pain without reported neurological or systemic warnings fits a mechanical pattern.

Differential to review:

- Mechanical spinal pain

Action: Arrange a routine in-person clinical review. New, severe, or worsening symptoms change this pathway.

Unresolved-information pathway: The entries need structured in-person characterization.

Prompt clinical review pattern — Promptly

Do not guess missing answers or convert uncertainty into reassurance. Document what is unknown, perform an in-person examination, clarify the timeline with a witness or records when available, and reassess if any new feature appears.

Action: Arrange an in-person medical or neurological review promptly, usually within days. Seek sooner care if the pattern changes.

Section 3: Clinical review

Diagnostic modules and focused investigation logic

The examination comes before a test list. Select investigations only after localization, urgency, comorbidity, pregnancy status, renal function, anticoagulation, and prior results have been considered.

3.1 Mechanical spinal pain

Discriminating features: Pain linked to movement or load without a progressive neurological deficit or systemic red flag.

Logical investigations: Neurological and musculoskeletal examination; early imaging is not routine when no red flags or objective deficits are present.

3.2 Radiculopathy or nerve-root compression

Discriminating features: Radiating limb pain with dermatomal sensory symptoms, myotomal weakness, or reflex change.

Logical investigations: Root-level examination; MRI and/or electrodiagnostic studies when severe, progressive, persistent, or anatomically uncertain.

3.3 Spinal stenosis or cord compression

Discriminating features: Walking-related leg symptoms, bilateral findings, gait change, corticospinal signs, or sphincter dysfunction.

Logical investigations: Focused cord and vascular examination; urgent MRI when compression or progressive deficit is suspected.

3.4 Fracture, infection, malignancy, or inflammatory spinal disease

Discriminating features: Trauma/osteoporosis, fever/infection risk, cancer, night pain, or systemic illness.

Logical investigations: Targeted laboratory and imaging evaluation based on the warning context; neurological deterioration is urgent.

Reassessment and documentation

- If the symptom pattern changes, repeat the safety screen and timeline rather than carrying forward an earlier interpretation.
- If a test is unrevealing but the deficit persists or progresses, revisit localization and seek specialist review; a normal result does not automatically end assessment.
- If symptoms resolve, document duration, completeness of recovery, recurrence, and any residual deficit. Resolved sudden focal symptoms can still require urgent vascular assessment.
- If the history and examination conflict, obtain collateral information and in-person review rather than forcing a single diagnostic label.

Selected references

Sources provide background standards and do not replace local emergency pathways or current specialist guidance. Accessed October 2026.

1. National Institute for Health and Care Excellence. (2019, updated 2023). *Suspected neurological conditions: recognition and referral (NG127)*. https://www.nice.org.uk/guidance/ng127
2. National Institute for Health and Care Excellence. (2016, updated 2020). *Low back pain and sciatica in over 16s: assessment and management (NG59)*. https://www.nice.org.uk/guidance/ng59