



From Pain to Practice: Practical Insights and New Strategies for Degenerative Disc Disease

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Why This Matters

- #1 cause of disability worldwide
- Burden of axial back pain in primary care
- Myth vs. reality: “Normal aging vs. pathology
- DDD isn’t just aging, a lifelong continuum
- Many unnecessary MRIs & referrals

Objectives



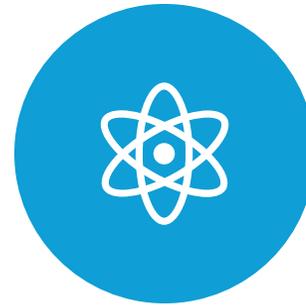
Anatomy Refresher



DISC



FACET JOINTS

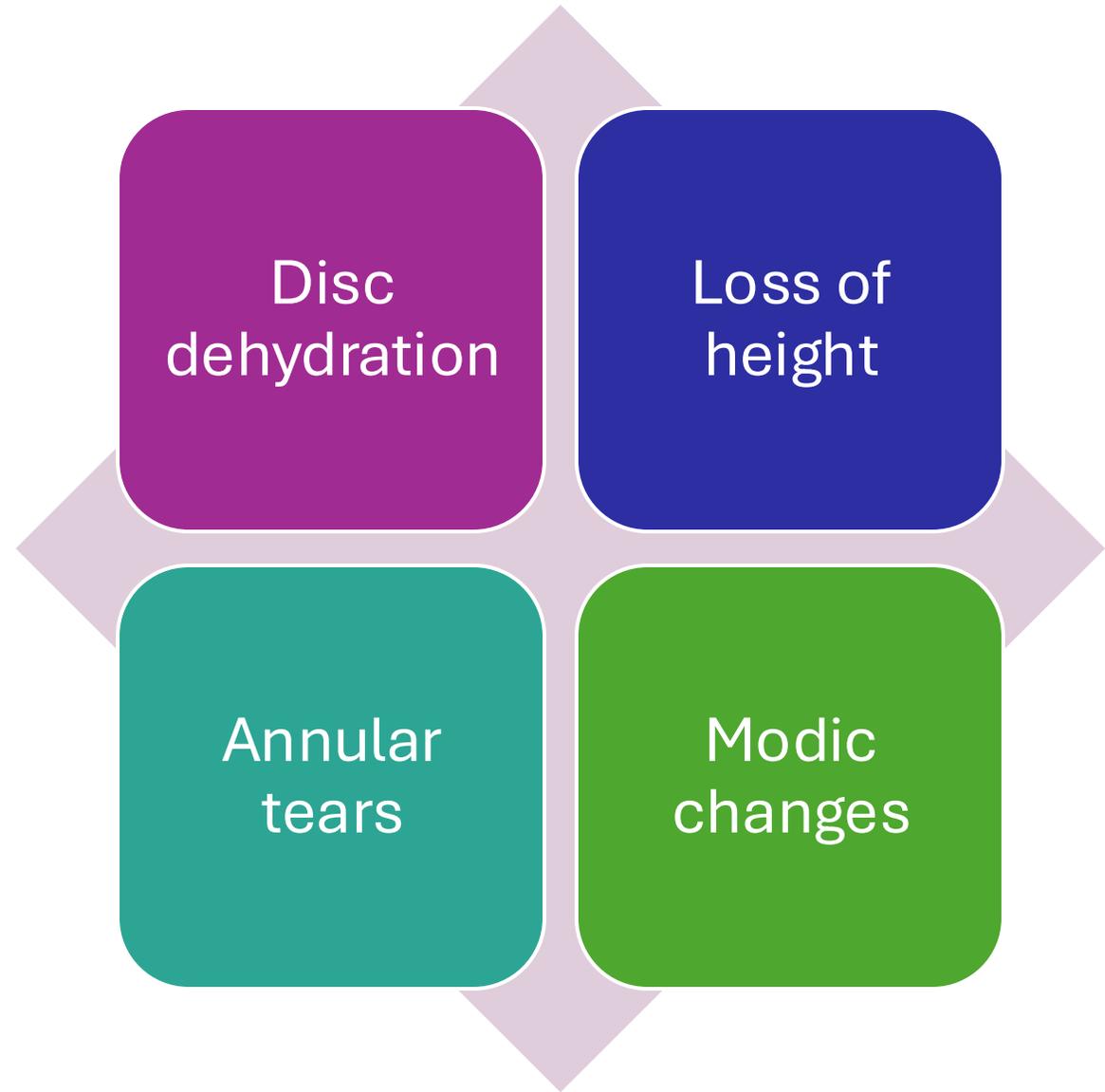


ANNULUS /
NUCLEUS



MOTION
SEGMENT

What Is DDD?

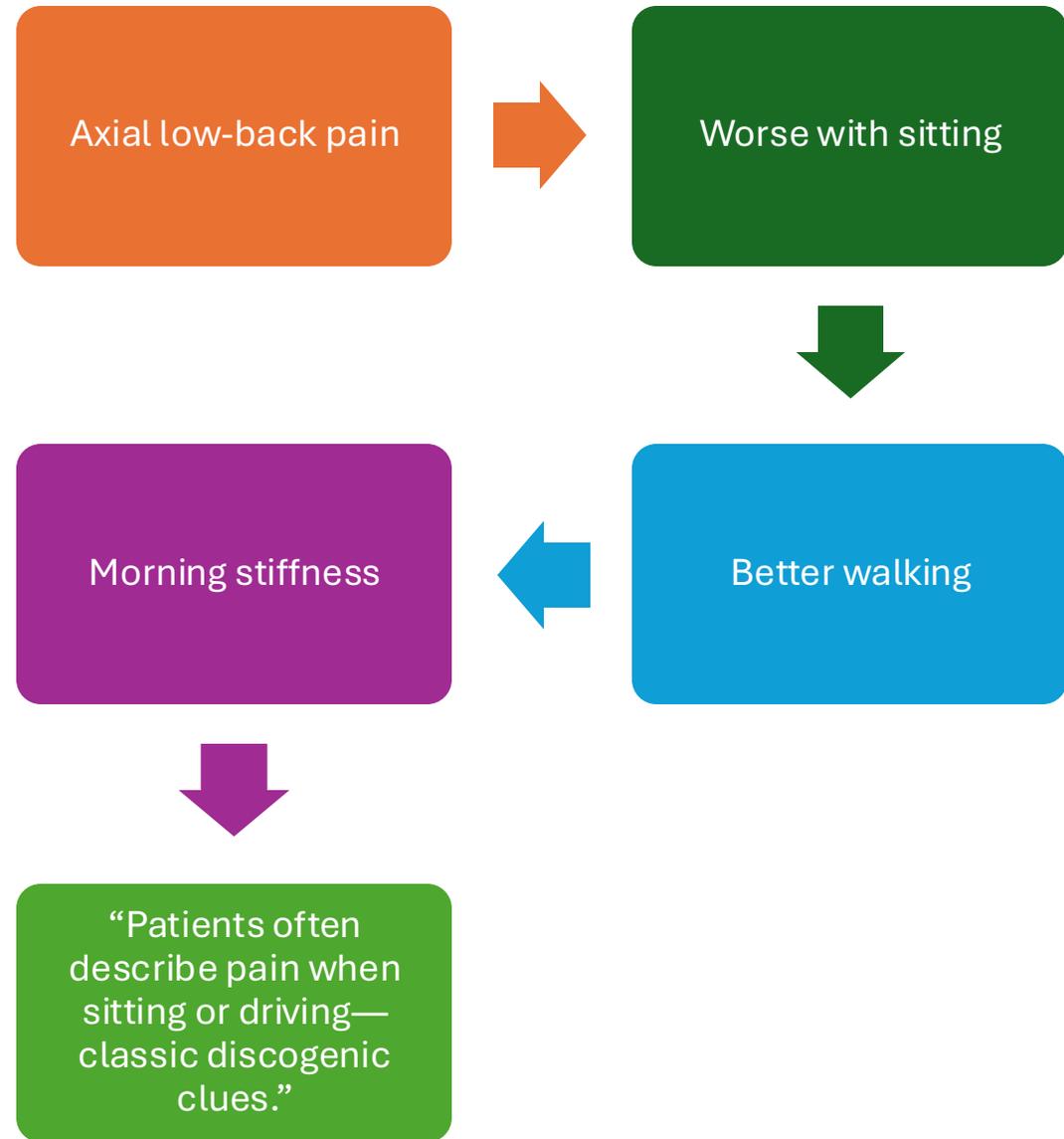


MRI Spectrum of DDD

Mild →
Moderate →
Severe

Modic 1, 2, 3

Early Symptoms



Mechanical vs Inflammatory Pain



Mechanical: activity-linked



Inflammatory: morning > 1 hour



Night pain?



Pain referral patterns

Risk Factors



- Age
- Smoking
- Obesity
- Genetics
- Repetitive load
- Prior injury

Differential Diagnosis

- *SI joint pain*
- *Facet arthropathy*
- *Hip OA*
- *Myofascial syndrome*
- *Red flags*

SI joint pain and hip OA can mimic disc disease remarkably well—especially in older adults

Red Flags

Cancer history

Weight loss

Fever, IV drug use

Trauma

Neurologic deficit

Bowel/bladder issues

Physical Exam Checklist

- *Neuro exam*
- *SLR*
- *Hip exam*
- *Palpation traps*

“Don’t forget the hip. Many ‘back pain patients’ actually have hip pathology.”

When NOT to Order an MRI



Acute pain <6 weeks



No red flags



No neuro deficit

When to Order an MRI

Red flags

Progressive neuro
deficits

Radiculopathy
>6–12 weeks

Pre-intervention
planning

Use MRI
strategically. It's a
tool, not a
screening test.”

X-Ray Utility in Primary Care

Alignment

Instability

Spondylolisthesis

Disc space collapse

X-rays are cheap and surprisingly useful. They provide mechanical insights MRI cannot

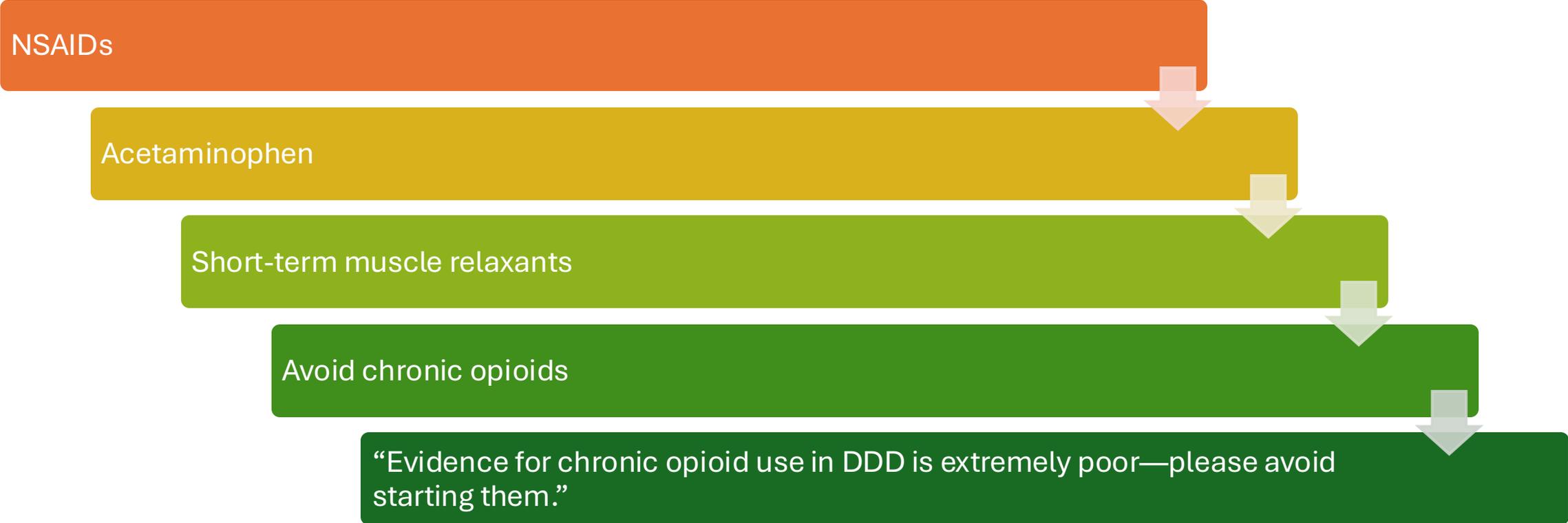
First-Line Management Overview

- Education
- Activity modification
- PT
- NSAIDs
- Heat/ice

- The majority of DDD improves with conservative therapy. Set expectations early.

Medications

NSAIDs



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graph TD; A[NSAIDs] --> B[Acetaminophen]; B --> C[Short-term muscle relaxants]; C --> D[Avoid chronic opioids]; D --> E["Evidence for chronic opioid use in DDD is extremely poor—please avoid starting them."];
```

Acetaminophen

Short-term muscle relaxants

Avoid chronic opioids

“Evidence for chronic opioid use in DDD is extremely poor—please avoid starting them.”

Role of Physical Therapy

Core strengthening

Flexibility

McKenzie approach

Education

“Therapy is the backbone of DDD treatment. Early PT improves outcomes significantly.”

Exercise Prescription

Walking

Swimming

Pilates/core

20–30 min/day

“A simple walking program is often more effective than medications.”

Ergonomics & Daily Habits

Sitting posture

Driving

Lifting

Work setup

“Small daily changes often reduce pain more than imaging or medications.”

Patient Counseling

Prognosis: good

Function > imaging

Avoid medicalization

Pain does not always equal damage

“Patients feel relieved when we normalize the condition and focus on function.”

Lifestyle Optimization

Weight loss

Anti-inflammatory diet

Smoking cessation

“Weight and smoking are powerful modifiable factors—measurable wins for patients.”

When to Escalate Care

- Persistent pain >12 weeks
- Failed PT
- Radiculopathy
- Functional loss

“This is when injections or specialist referrals become reasonable.”



Epidural Injections

Radicular pain

Temporary relief

Bridge to rehab

Not a cure

“Think of injections as a window to help patients engage in PT better

Facet Interventions

• *“Axial low back pain”*

- Medial branch blocks
- RFA

“Facet pain is extremely common and often misunderstood

When to Refer to Spine Surgery

Progressive neuro deficits

Refractory radiculopathy

Instability

DDD with severe functional impairment

“Surgery is not for every DDD patient—only for those who fail conservative care or have neurologic compromise.”

Surgical Options You Can Counsel Patients About

Microdiscectomy (for disc herniation/radiculopathy)

Decompression (stenosis)

Fusion (instability or severe DDD)

Disc replacement (select younger patients)

Endoscopic & minimally invasive options



Minimally Invasive Spine Surgery



Less blood loss



Faster recovery

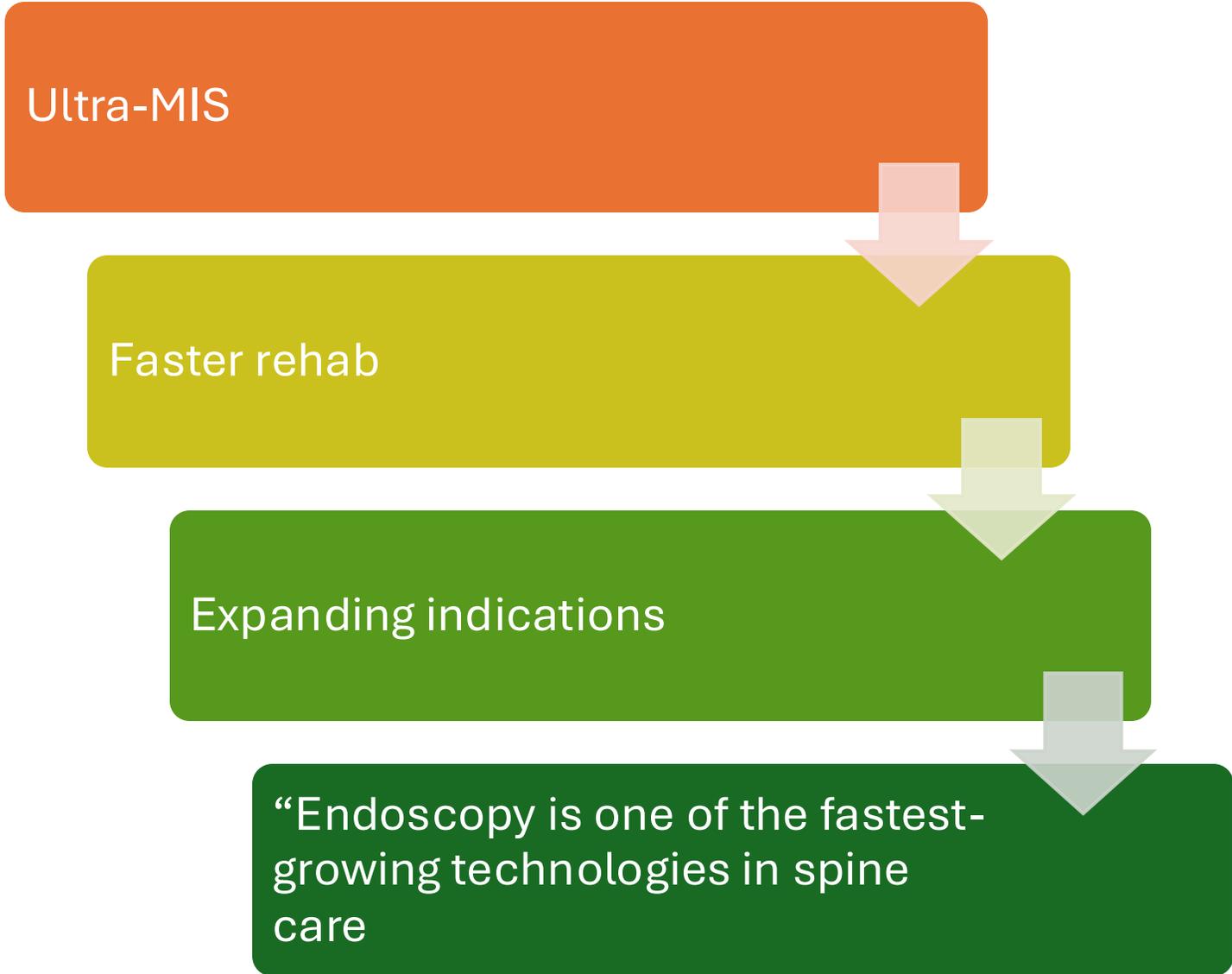


Outpatient options



Endoscopic Spine Surgery

Ultra-MIS



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graph TD; A[Ultra-MIS] --> B[Faster rehab]; B --> C[Expanding indications]; C --> D["Endoscopy is one of the fastest-growing technologies in spine care"]
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Faster rehab

Expanding indications

“Endoscopy is one of the fastest-growing technologies in spine care



Biologic Therapies

PRP

Stem cell

Evidence evolving

Not first-line

Right now, evidence is mixed—set realistic expectations.”

Patient-Specific Interbody Devices

Personalized fit

```
graph TD; A[Personalized fit] --> B[Better alignment]; B --> C[Precision planning]; C --> D["improve outcomes when used appropriately—but they don't replace surgical skill."];
```

Better alignment

Precision planning

improve outcomes when used appropriately—but they don't replace surgical skill.”

AI in Spine Care

Predictive analytics



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graph TD; A[Predictive analytics] --> B[Imaging interpretation]; B --> C[Decision support]; C --> D["AI helps us identify risk earlier and plan better—  
but it's a tool, not a decision-maker"]
```

Imaging interpretation

Decision support

“AI helps us identify risk earlier and plan better—
but it’s a tool, not a decision-maker

Case 1: Acute Axial Pain

45-year-old driver

No red flags

Conservative care

“ Typical DDD patient.
Conservative care solves >70%.”

Case 2: Radiculopathy

52-year-old

Leg pain > back pain

MRI justified

“A good example where imaging and possible injection help.”

Case 3: Chronic Pain

60-year-old

Long-standing pain

Multifactorial

“Chronic DDD often includes deconditioning; multidisciplinary care works best.”

Top 5 Mistakes to Avoid

- *Early MRI*
- *Overdiagnosing*
- *Relying only on meds*
- *Ignoring lifestyle*
- *Premature referrals*

“These are the pitfalls that complicate patient outcomes

Key Take- Home Messages

Most improve conservatively

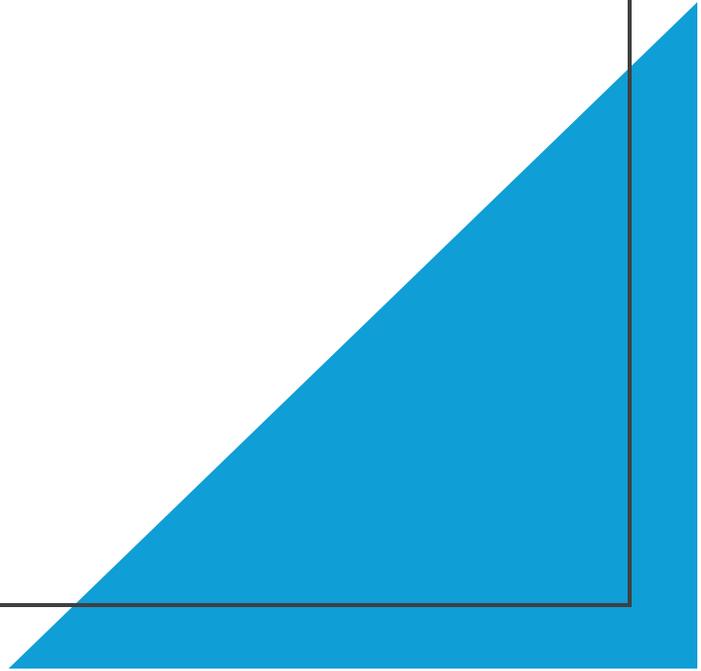
Treat the patient, not the MRI

Lifestyle matters

Escalate when appropriate

Technology enhances care — but never replaces clinical judgment and thoughtful planning.”

Tools help; judgment heals



Thank you
