HIP & KNEE

Vanessa JS Smith, PA-C

THE HIP, THE KNEE, AND THE ARTHRITIS TOOLBOX: MAKING SENSE OF LOWER EXTREMITY PAIN

HIP & KNEE

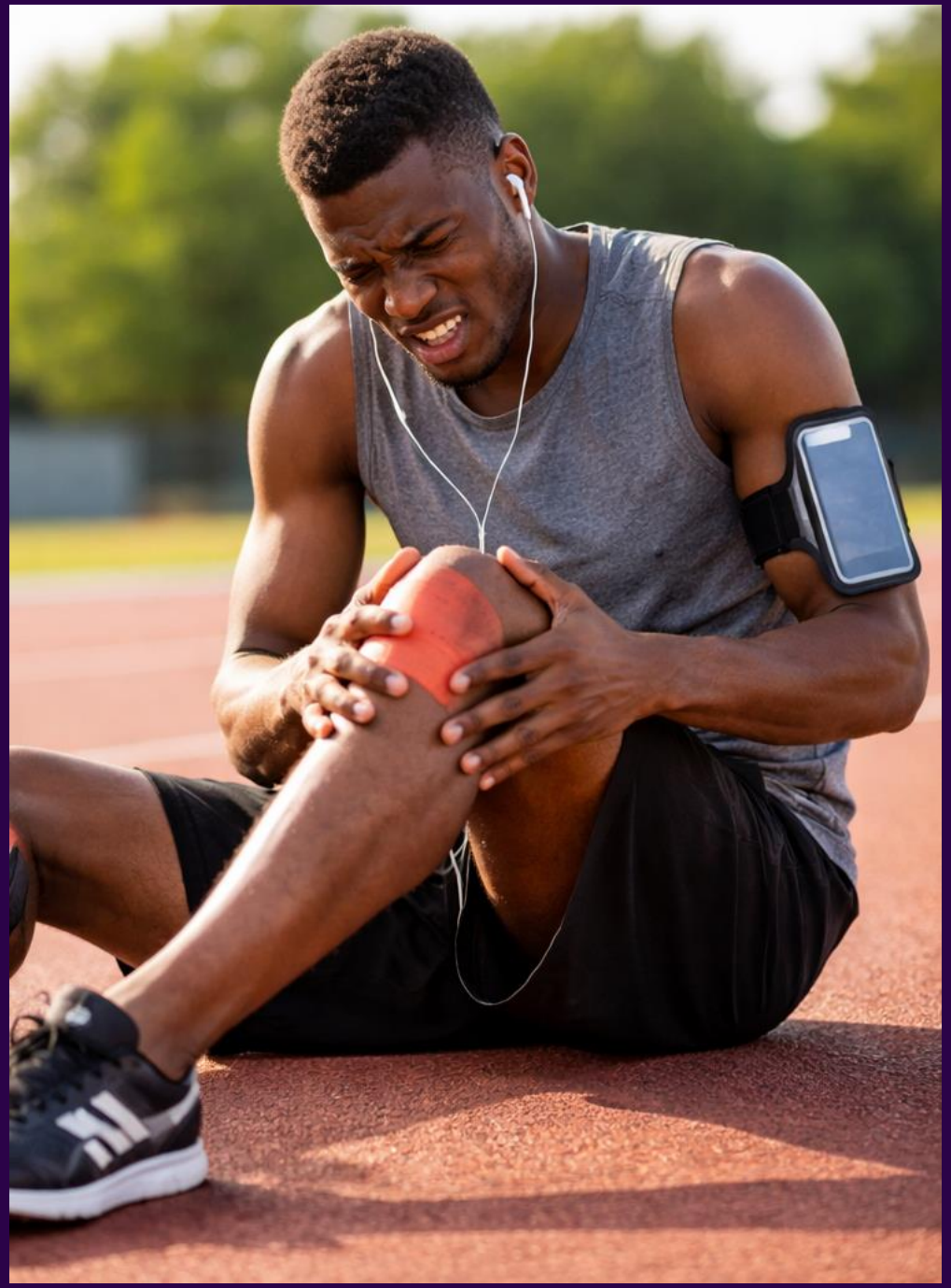
Vanessa JS Smith, PA-C

OBJECTIVES

At the conclusion of this session, participants will be able to:

1. **Perform** a focused physical examination of the hip and knee to assess gait, range of motion, joint stability, and functional impairment.
2. **Differentiate** hip pathology, knee pathology, and referred pain using targeted examination findings and clinical patterns.
3. **Apply** physical examination findings to guide imaging decisions and initial, non-surgical management strategies for lower extremity pain.
4. **Initiate** an *evidence-informed, stepwise approach* to managing arthritis-related hip and knee pain prior to specialty referral.
5. **Determine** appropriate timing for referral or escalation of care based on symptom progression, functional decline, and response to initial treatment.







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KNEE ALGORITHM



HPI

XRAY

WEIGHTBEARING!

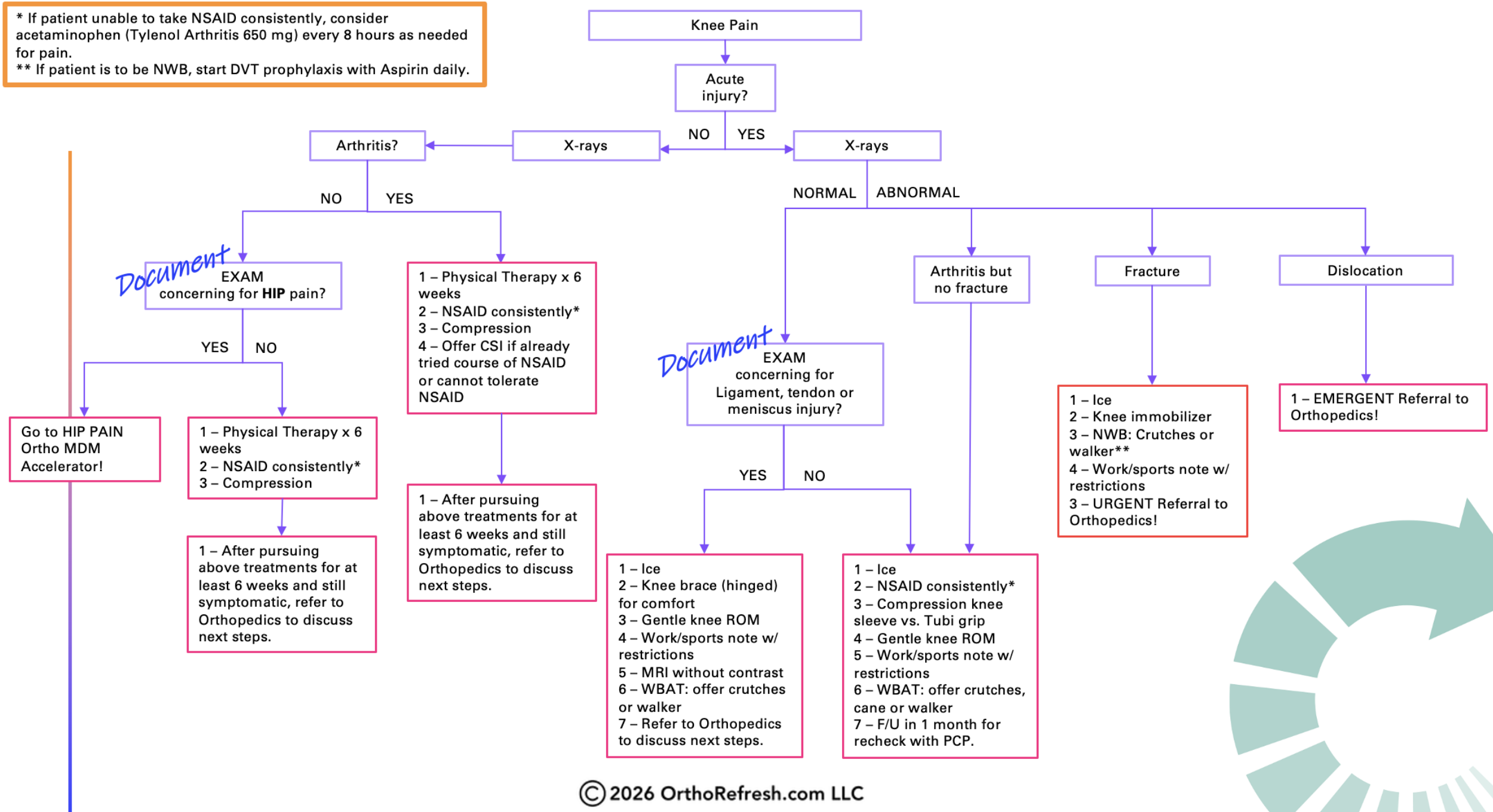
PHYSICAL EXAM

PLAN

ORTHO MDM ACCELERATOR™

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* If patient unable to take NSAID consistently, consider acetaminophen (Tylenol Arthritis 650 mg) every 8 hours as needed for pain.
** If patient is to be NWB, start DVT prophylaxis with Aspirin daily.



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HPI CLUES + KEY QUESTIONS

? Pain, swelling
? Knee gives way or buckles
? Affecting gait
? Injury
? Radiating pain
? Treatment tried
? Footwear

So that:
→ The patient feels heard
→ We get an idea how much this is bothering them
→ Insurance company and coders are happy!



→ Point with one finger where you're having the most pain.

KNEE CONDITIONS



SUBACUTE/CHRONIC

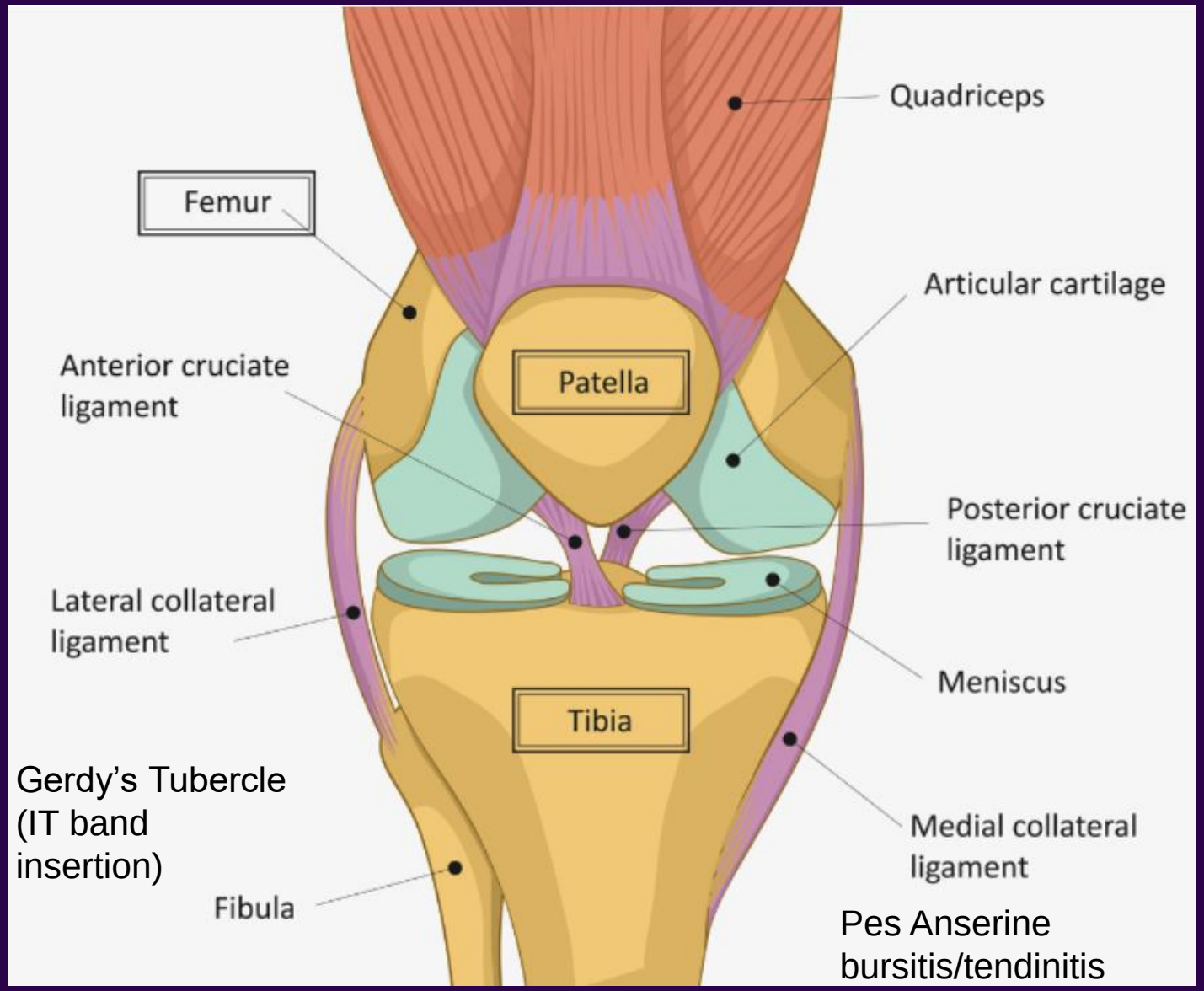
- IT Band Friction Syndrome
- Patellofemoral Syndrome
- Arthritis
- Bursitis
- Tendinitis
- Meniscal pathology

ACUTE

- Fracture
- Dislocation
- Ligamentous injury
- Meniscal injury
- Tendon rupture

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CC: KNEE PAIN



https://ortho-surgery.uk/index.php/the-anatomy-of-the-knee/



HIGH YIELD PHYSICAL EXAM

LOOK

Observation. Effusion or edema? Varus or valgus deformity?

FEEL

Palpation. "What's under the skin?"

MOVE

Active range of motion. Is it symmetric?

STRESS

Special tests. "If this causes pain, what could be the reason?"

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PHYSICAL EXAM - KNEE

- ❑ Gait evaluation
- ❑ Range of motion: knee AND hip
- ❑ Muscle strength: hip, knee, ankle
- ❑ Surface palpation: medial, anterior, lateral and posterior structures
- ❑ Patellofemoral exam
- ❑ Special tests
  - Valgus (MCL)
  - Varus (LCL)
  - Anterior Drawer (ACL)
  - Posterior Drawer (PCL)
  - McMurray's (meniscus)

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PHYSICAL EXAM - KNEE

- ❑ Special tests → One ligament, one test.

Knee hyperextension → cruciate ligaments lock the joint

TEST IN TWO POSITIONS:

Knee EXTENSION (0°) → collateral ligs + capsule

Knee FLEXION (30°) → collateral ligs

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PHYSICAL EXAM - KNEE

Degree of Ligament Injury

SPRAIN	1°	2°	3°
SYMPTOM	Mild	Moderate	Severe
SIGNS		Slight abn motion	Abn motion (3-15mm)
TEAR FIBERS	Minor		Complete
		Partial	

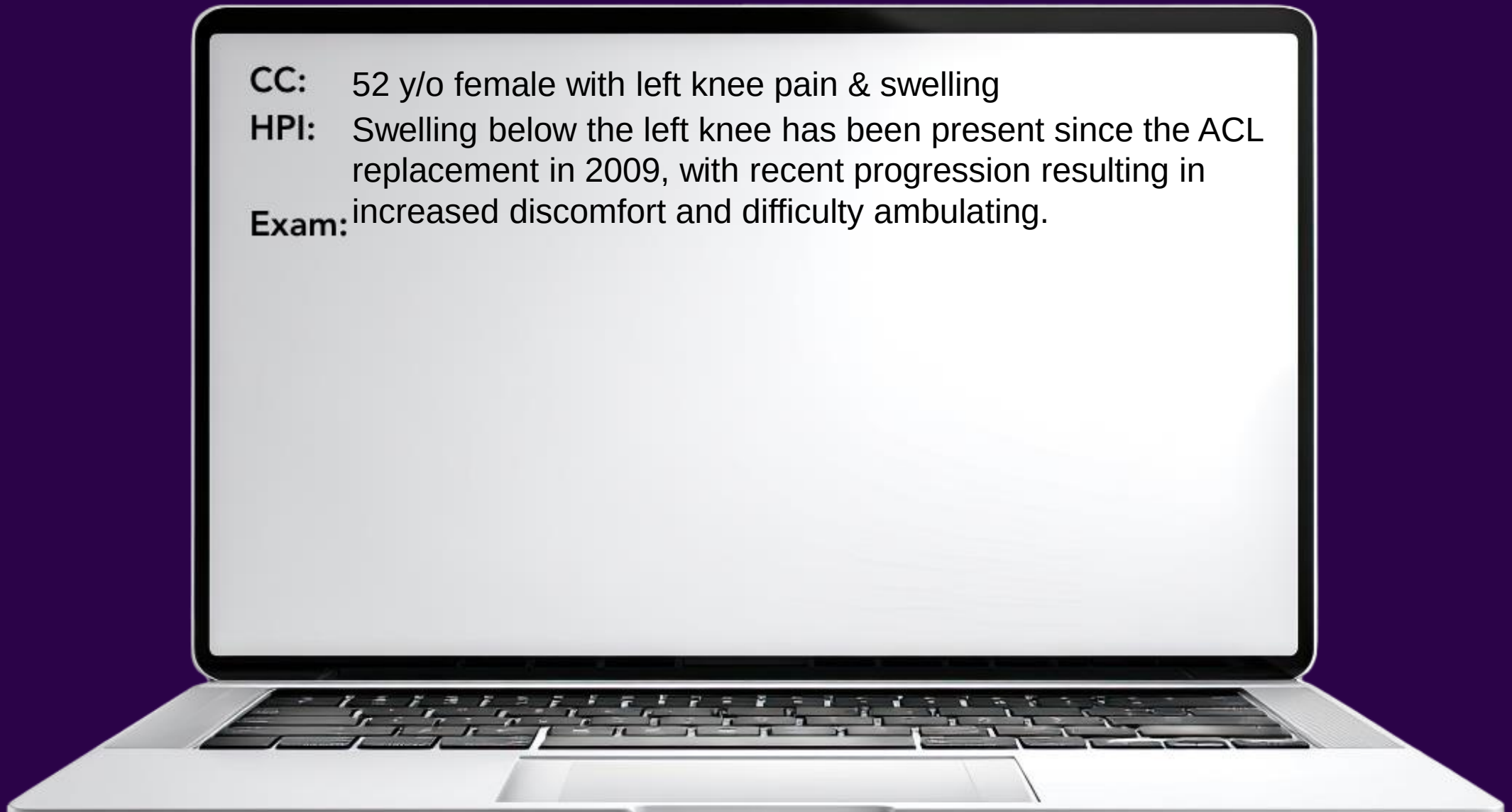
KNEE – RED FLAGS

- Inability to extend the knee
- Notable laxity
- Inability to bear weight

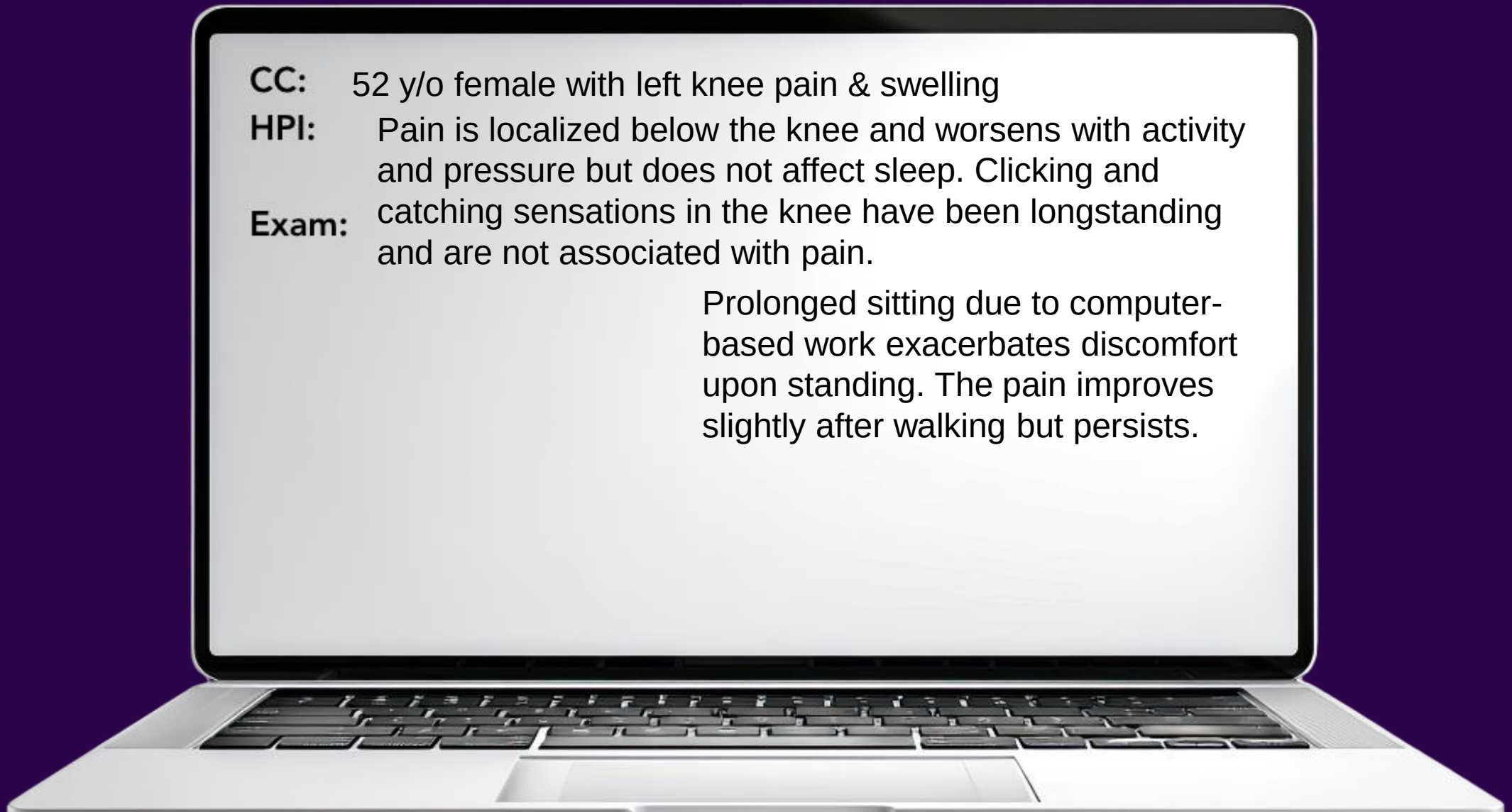
PHYSICAL EXAM - KNEE



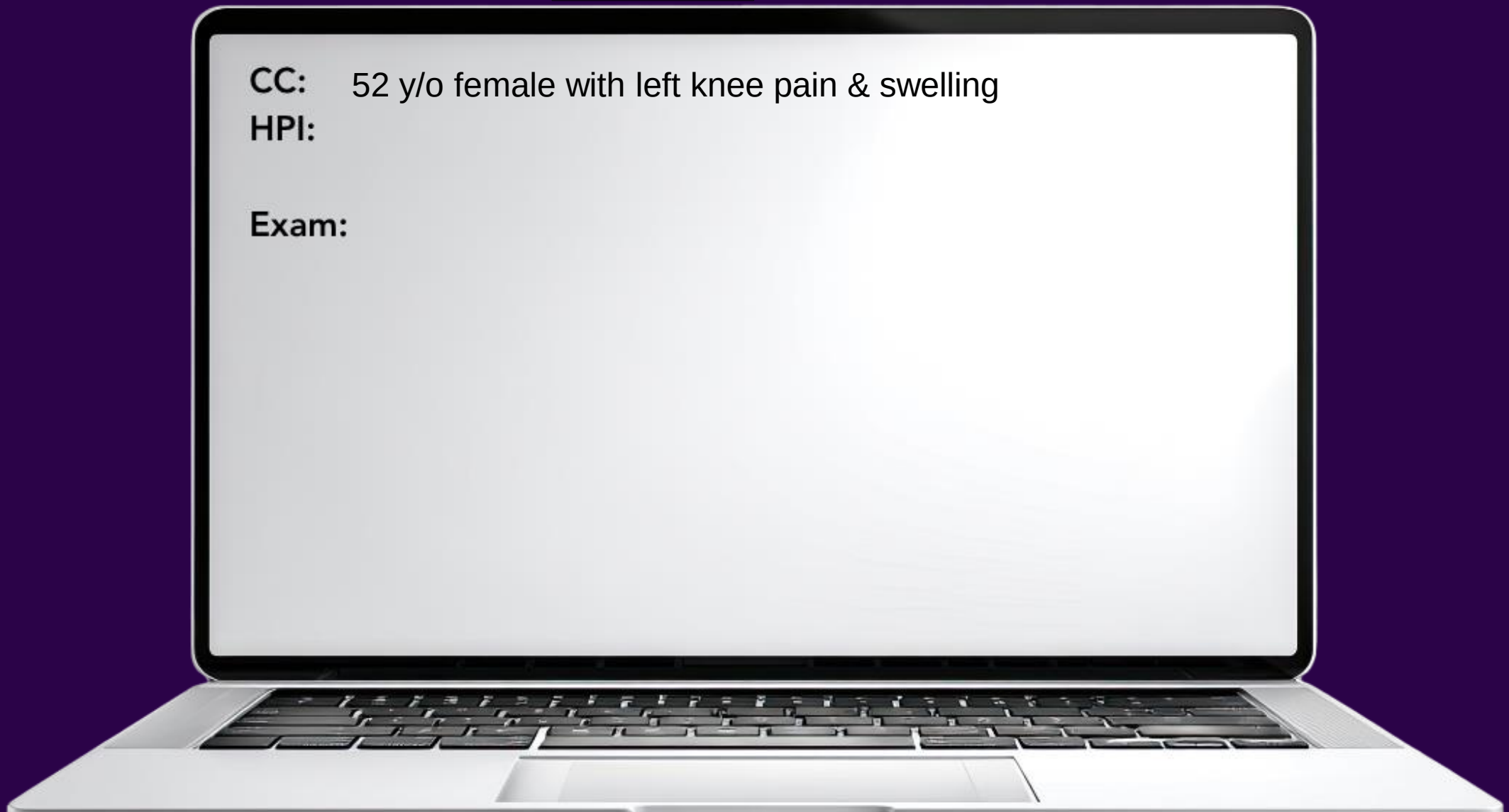
CASE STUDY - KNEE

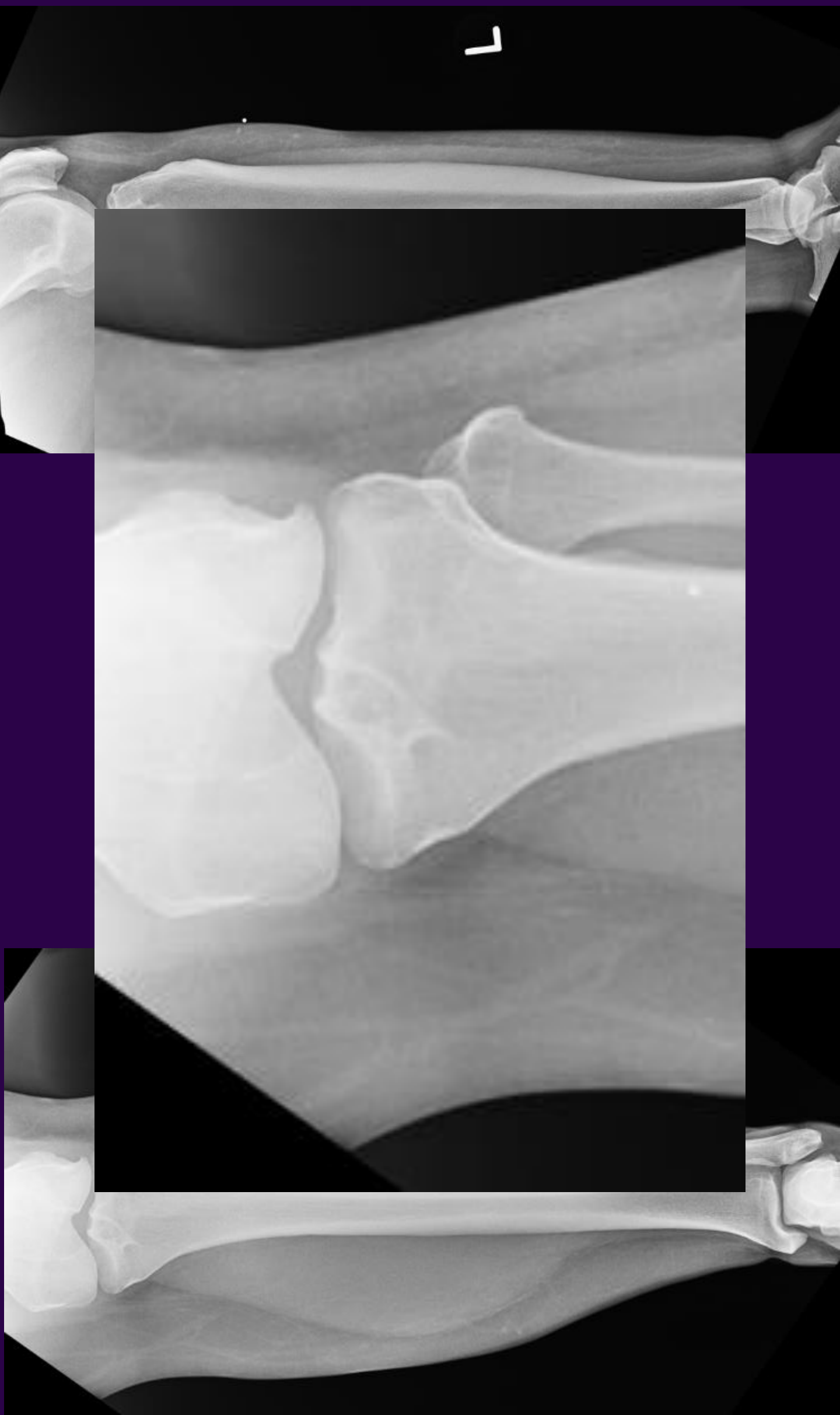


CASE STUDY - KNEE



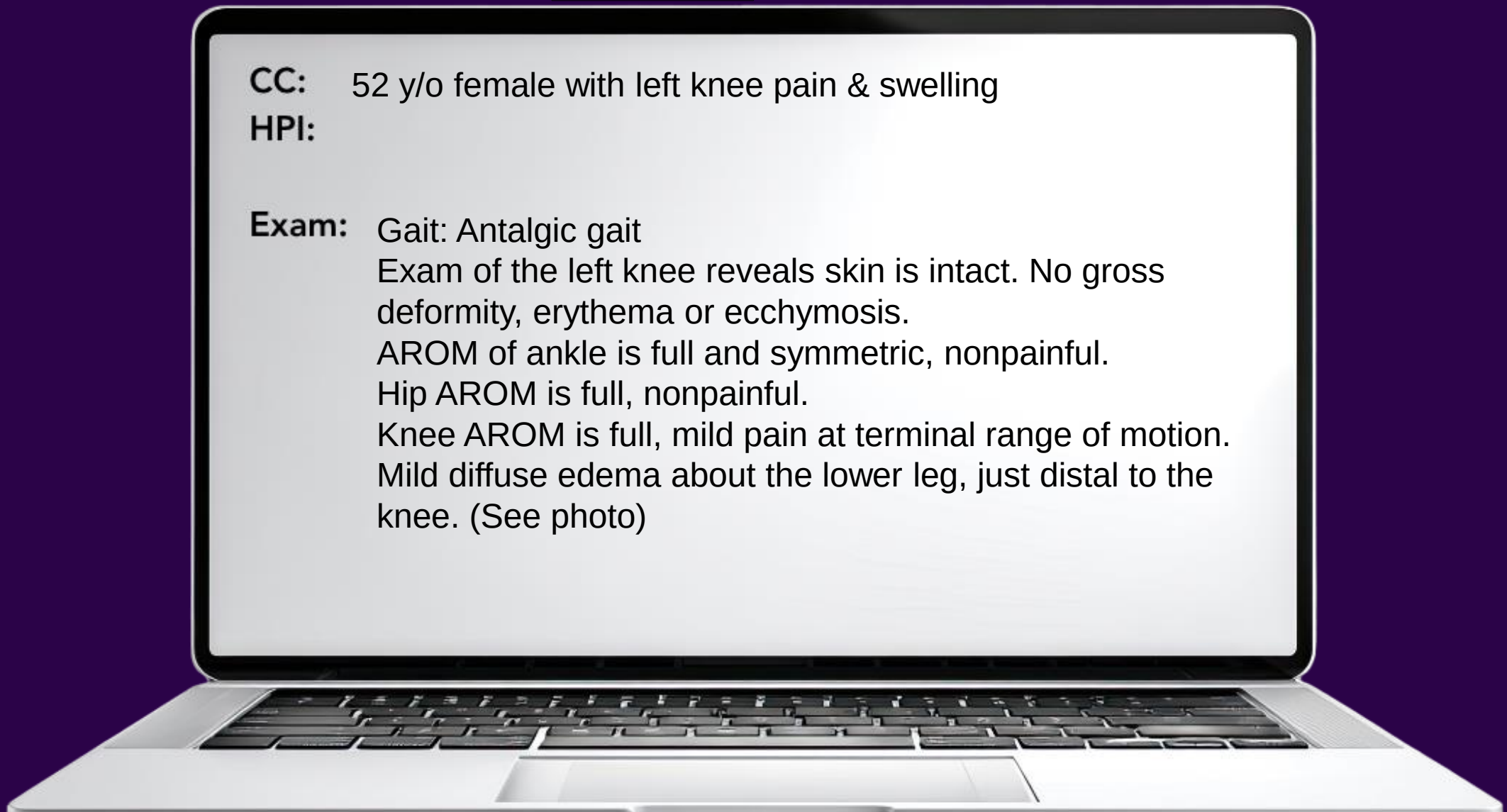
CASE STUDY - KNEE



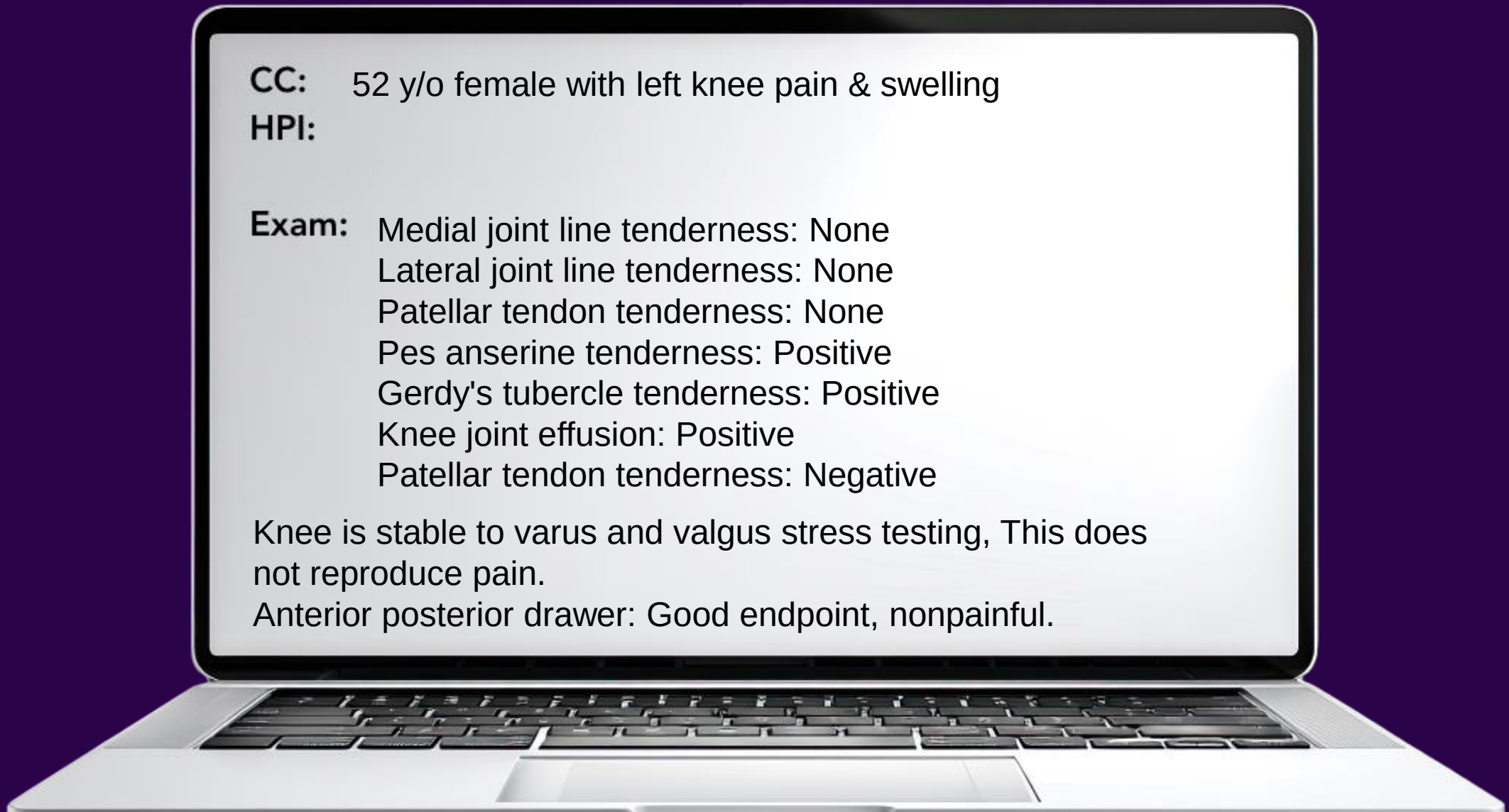




CASE STUDY - KNEE

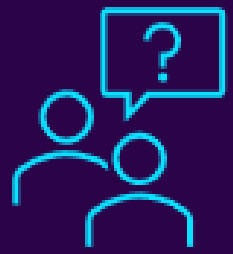


CASE STUDY - KNEE



CASE STUDY - KNEE





IMPRESSION

1. Left knee tendinitis with underlying arthritis

PLAN

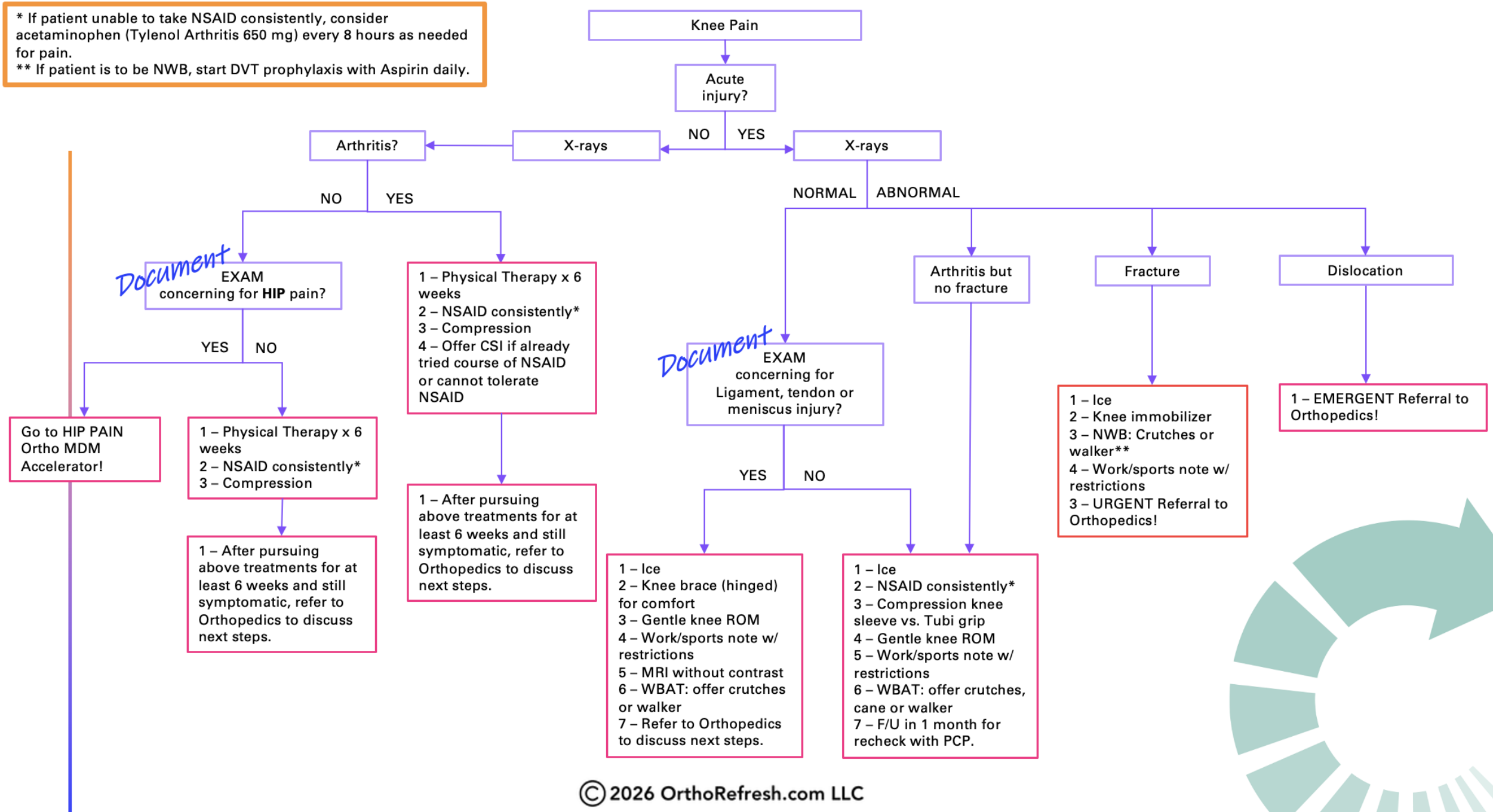
1. Patient education regarding the impression was discussed. Radiographs reviewed with the patient.
2. Conservative care options including physical therapy, NSAIDs, ice and activity modification were discussed.
3. The indications for corticosteroid injections were discussed.
4. Physical therapy for formal therapy for the next 4 weeks. Orders provided. She will call to schedule.
5. Prescription for meloxicam is sent to pharmacy. She has had adverse responses to the high doses of NSAIDs in the past. She will be started on a half dose of meloxicam but after observing for any reaction for 1 week, she can increase to 15 mg once daily with food. Discussed.
6. Follow-up in 4 to 6 weeks with nonoperative sports medicine team for recheck.

PT EVAL – SO THOROUGH!

OBJECTIVE DATA: This is a very pleasant 52-year-old female who presents to physical therapy this day in mild distress due to her pain. She is alert oriented cooperative and follows commands. The patient stands independently is walking with a gait pattern that demonstrates decreased left hip shifting in mid stance, favoring her left lower extremity, increased pronation with decreased trunk rotation. She has level iliac crest and PSIS in standing position. Trunk range of motion is full in all planes in standing. She displays neutral femoral acetabular and tibiofemoral orientation in standing. In the seated position she displays limited femoral acetabular internal rotation bilaterally at 30 degrees, external rotation asymmetrical at 60 degrees right, 68 degrees left. She displays 5 out of 5 strength for her femoral acetabular internal and external rotators, hip extensors. She has 5 out of 5 strength for bilateral knee flexion and extension, 3-4 out of 10 pain for left knee flexion and extension experienced below the knee. She is able to obtain 0 degrees of knee extension bilaterally in sitting with normal patellar tracking, bilateral crepitus. **Tenderness to palpation noted over the patellar tendon, pes anserine, Gertie's tubercle and IT band left.** In the supine position she has an equal leg length. Straight leg raises negative for typical symptoms at 90 degrees bilaterally. She displays bilateral active knee range of motion 0 to 130 degrees. She has a good quadriceps contraction, is able to perform an independent straight leg raise without extension lag. Ligamentous exam is unremarkable. Clark's, Apley, McMurray's tests are negative. Ober's testing is positive bilaterally as is modified Thomas testing indicating positionally short overactive hip flexors pulling the left greater than right hemipelvis into a forwardly tipped anteriorly rotated position. This is notable due to to decreased bilateral femoral acetabular internal rotation and significant increase lumbar lordosis.

INITIAL TREATMENT: Initial evaluation completed this date. The patient was educated in anatomy, physiology of diagnosis and recommendations/POC. Initiated a home exercise program for lumbopelvic femoral repositioning and retraining in preparation for concomitant gluteal and quadriceps training on the left. Patient does well with the exercises. ASSESSMENT: Patient presents to therapy with a chief complaint of left knee/lower leg pain. She demonstrates underlying lumbopelvic femoral pathomechanics as described above affecting lower quarter myokinematics. IMPAIRMENTS: Overactive hip flexors, back extensors, weak abdominals, limited femoral acetabular internal rotation, asymmetrical external rotation, pain. FUNCTIONAL LIMITATIONS: Patient reports extreme difficulty or unable to perform heavy activities around the home, quite a bit of difficulty with any of her usual housework, performing light activities around the home, walking between rooms. Moderate difficulty lifting an object like a bag of groceries from the floor.

* If patient unable to take NSAID consistently, consider acetaminophen (Tylenol Arthritis 650 mg) every 8 hours as needed for pain.
** If patient is to be NWB, start DVT prophylaxis with Aspirin daily.



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HIP ALGORITHM



HPI

XRAY

WEIGHTBEARING!

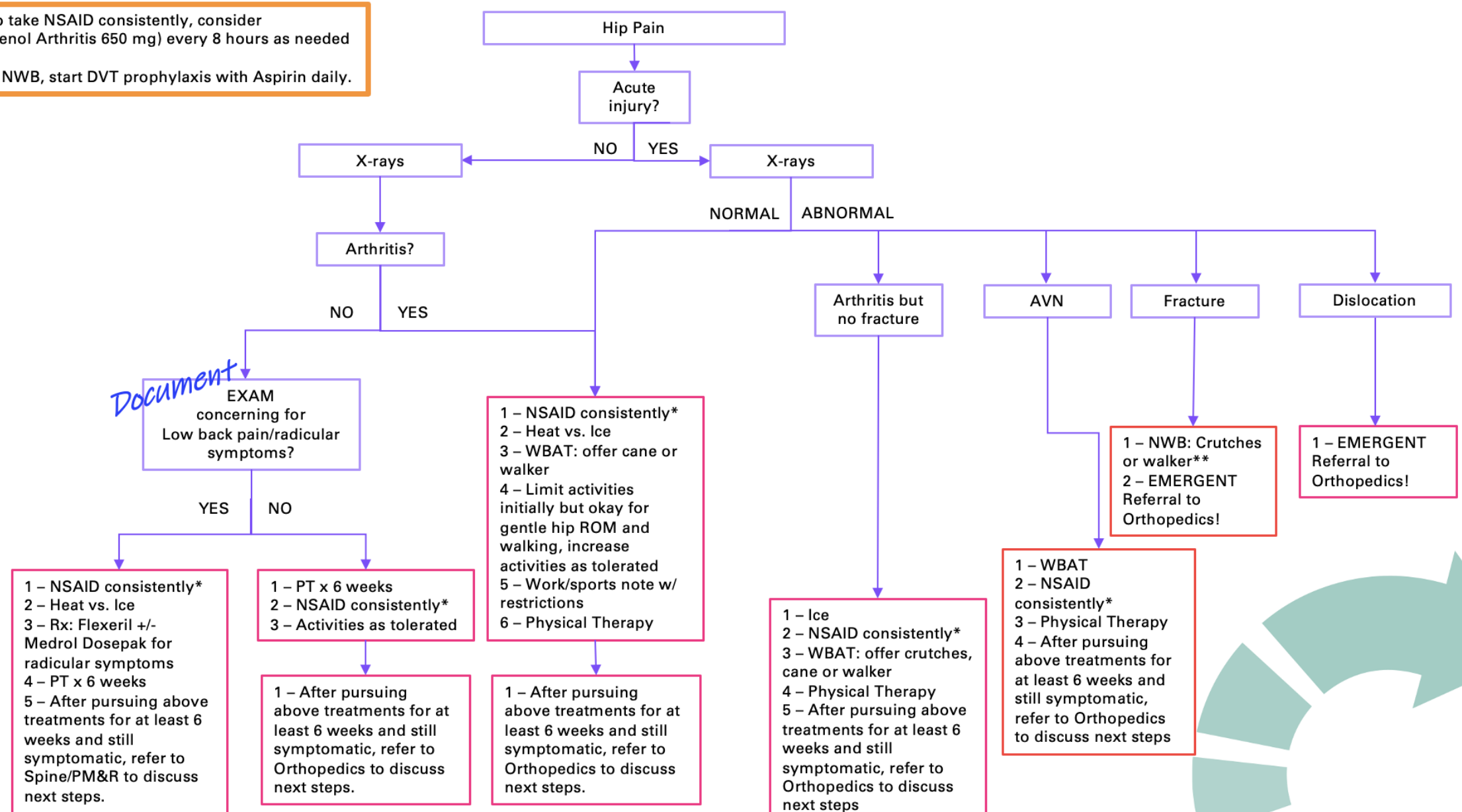
PHYSICAL EXAM

PLAN

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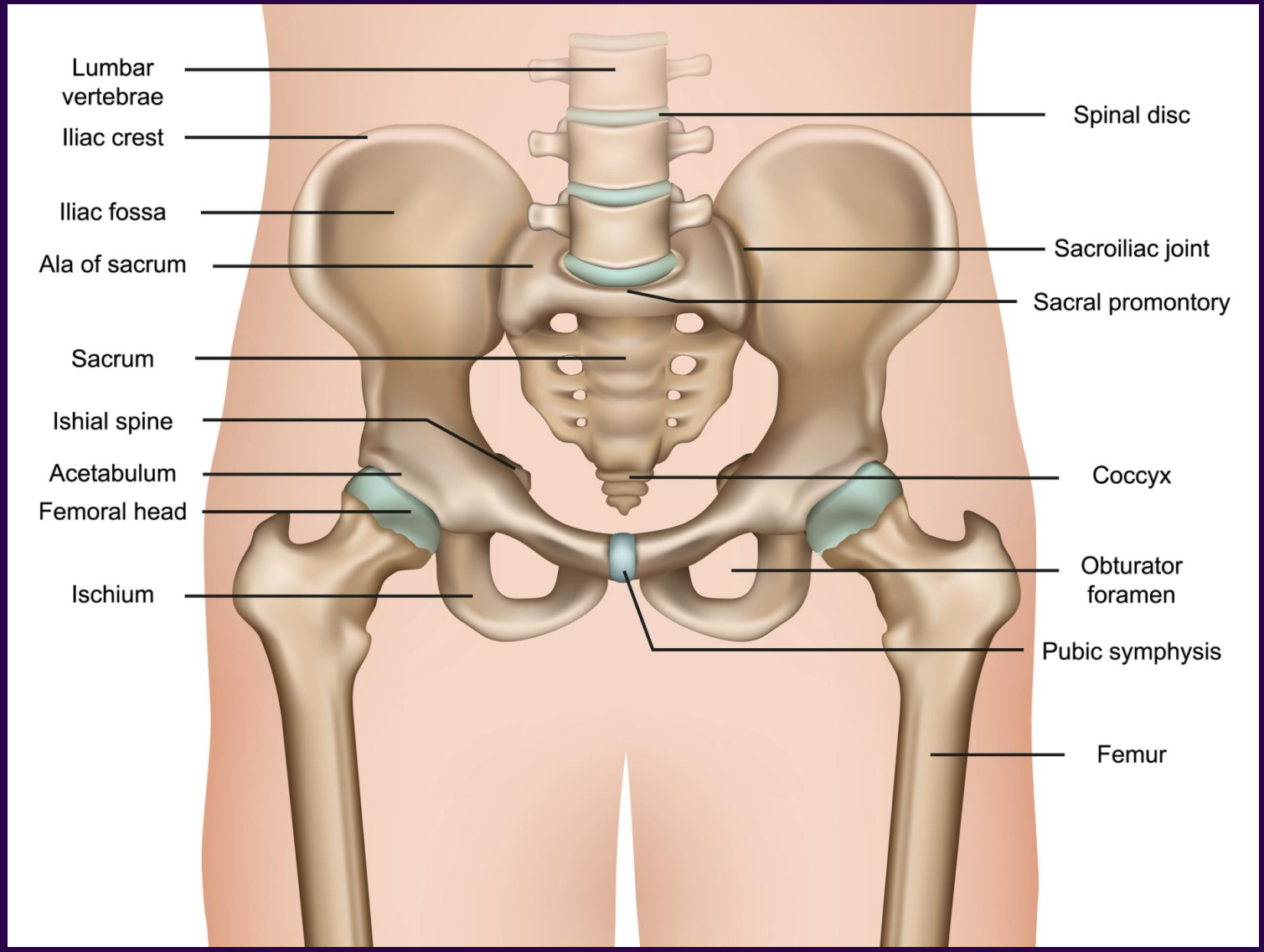
HPI CLUES + KEY QUESTIONS

? Pain location – "Use your hand to show me."
? Worse with standing, stairs, laying, etc.
? Affecting gait
? Injury
? Radiating pain
? Treatments tried

So that:
→ The patient feels heard
→ We get an idea how much this is bothering them
→ Insurance company and coders are happy!

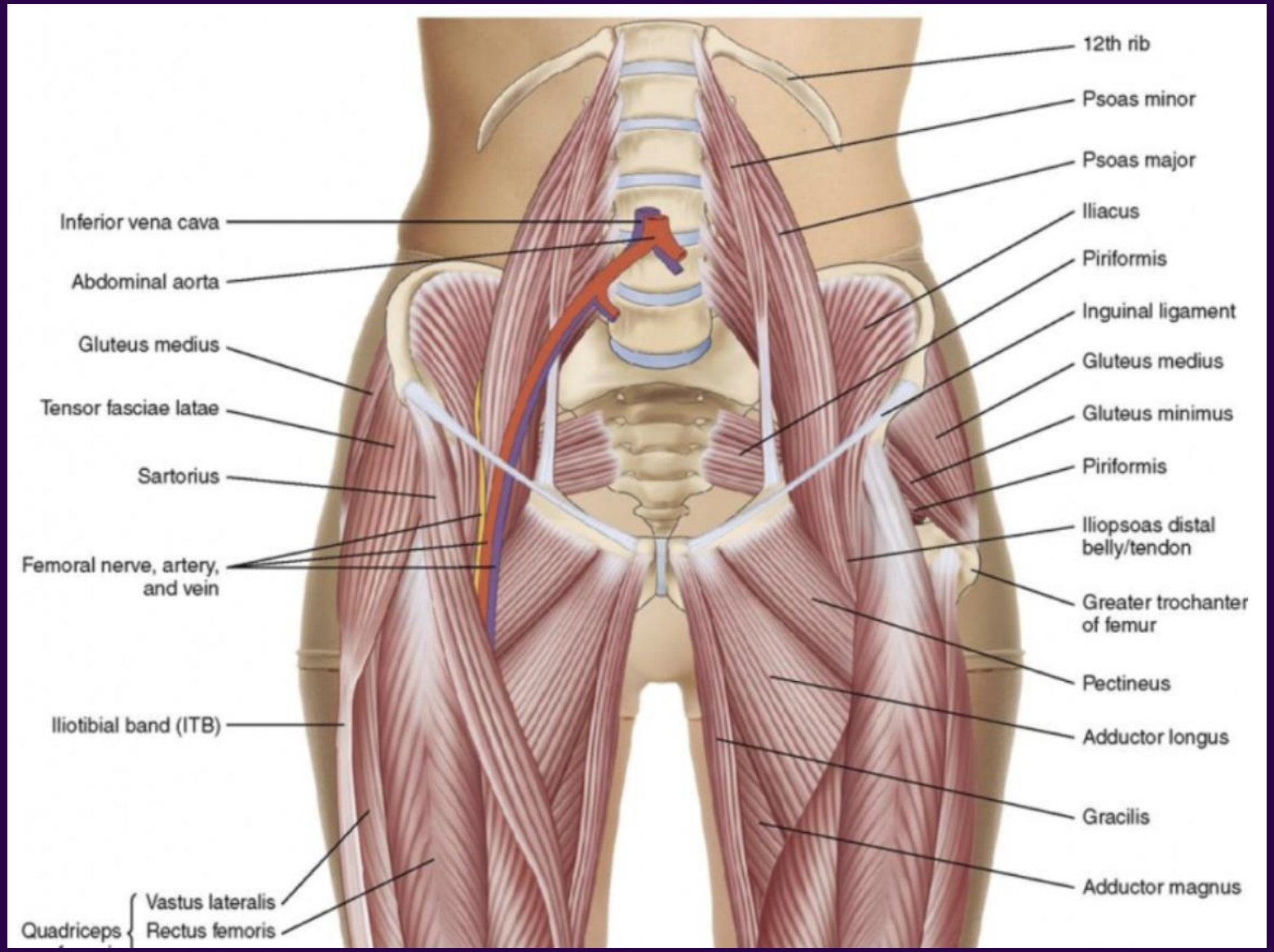


ANATOMY & DIRECTIONAL TERMINOLOGY



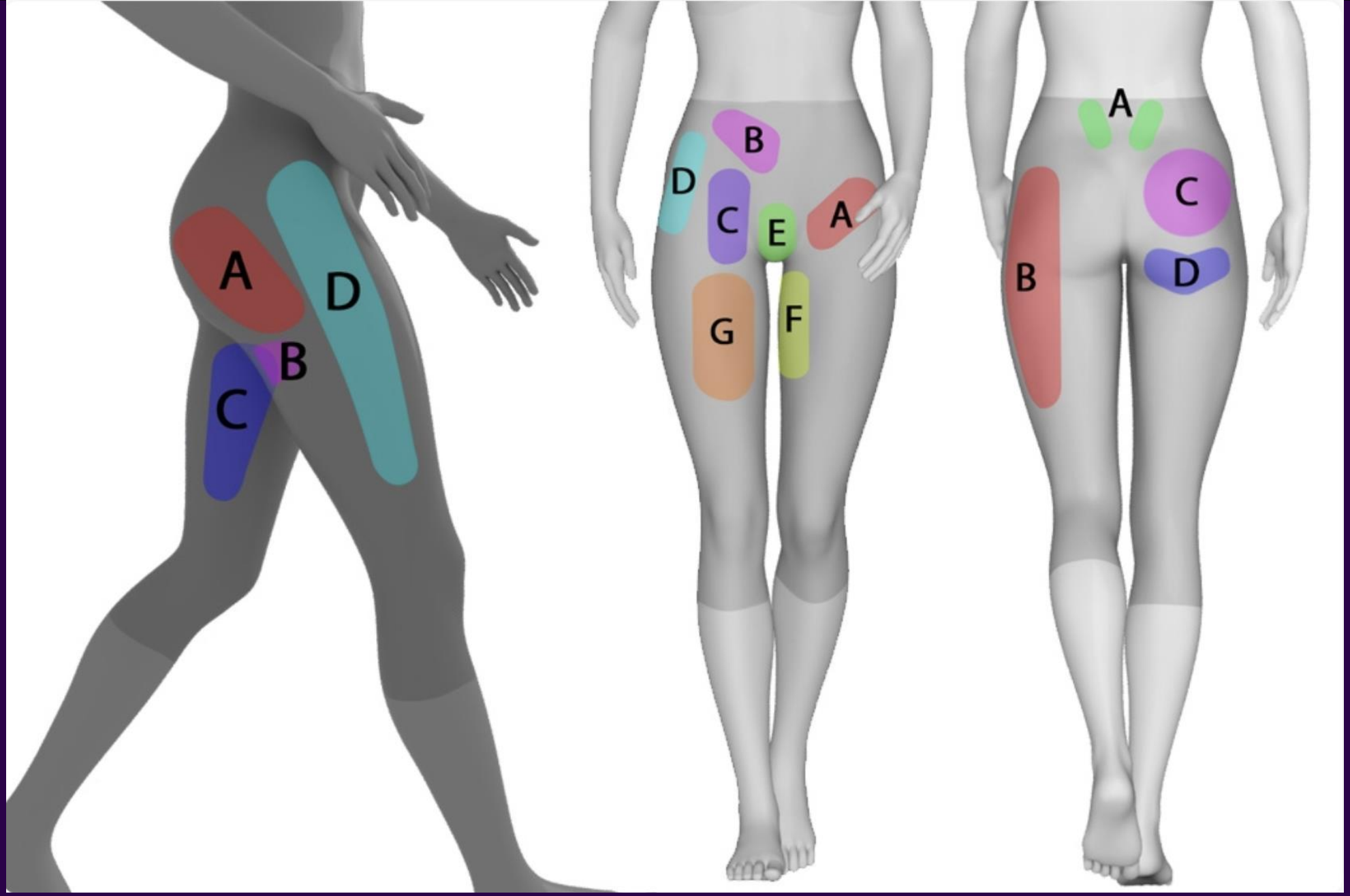
https://www.whitehouse-clinic.co.uk/articles-and-advice/anatomy-pathology-treatment-of-the-hip-joint

ANATOMY & DIRECTIONAL TERMINOLOGY



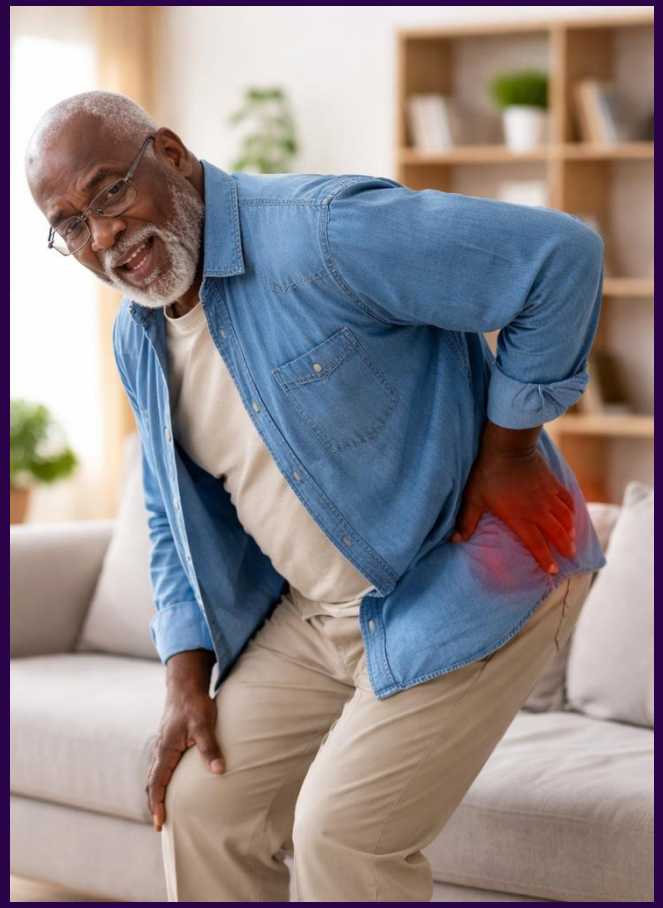
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https://www.towncenterortho.com/blog/where-does-it-hurt-use-our-hip-pain-location-diagram/?bp=47256

CONDITIONS – ANTERIOR HIP



A. Femoroacetabular Impingement (FAI) or ARTHRITIS!

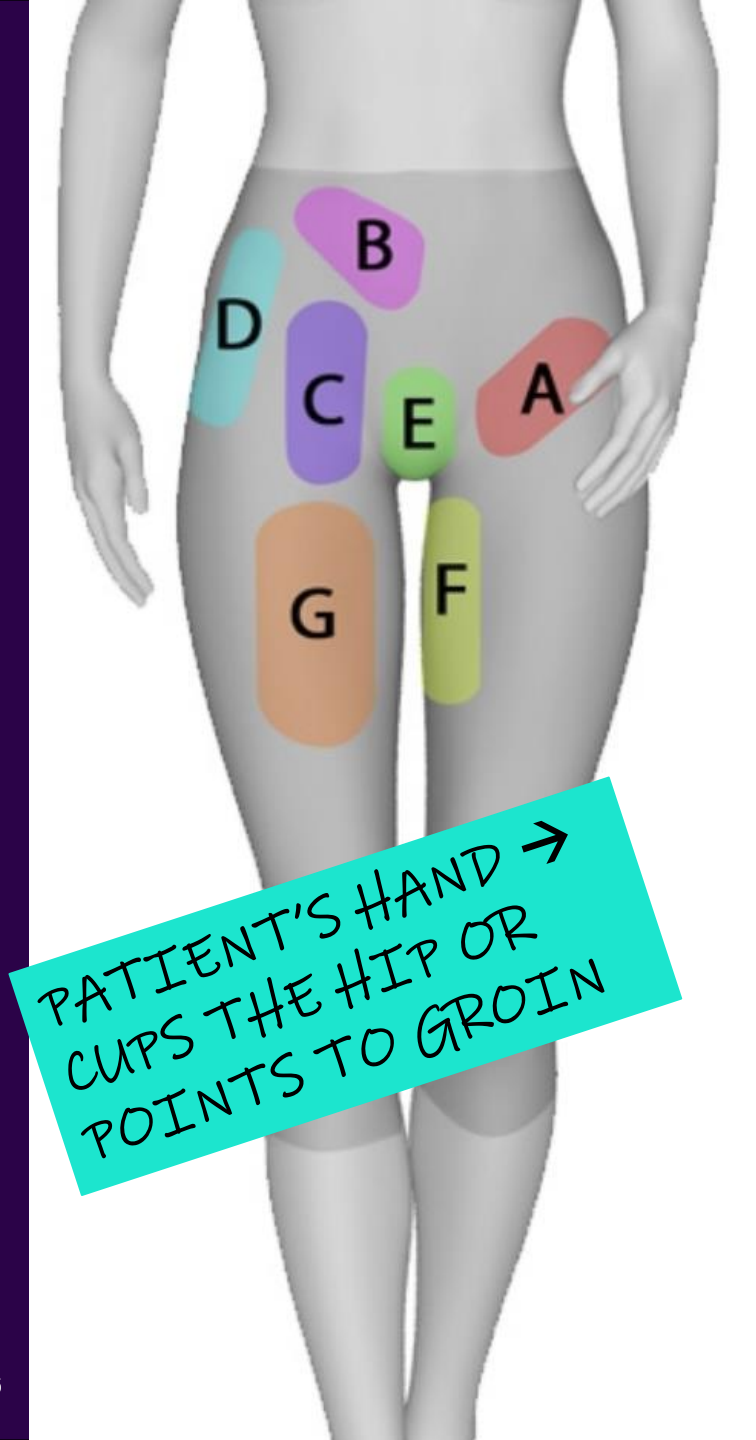
B. Sports Hernia, Inguinal Hernia, Inguinal Nerve Entrapment

C. Hip flexor tendonitis

D. ITB syndrome, Trochanteric Bursitis, Gluteal Tendinitis

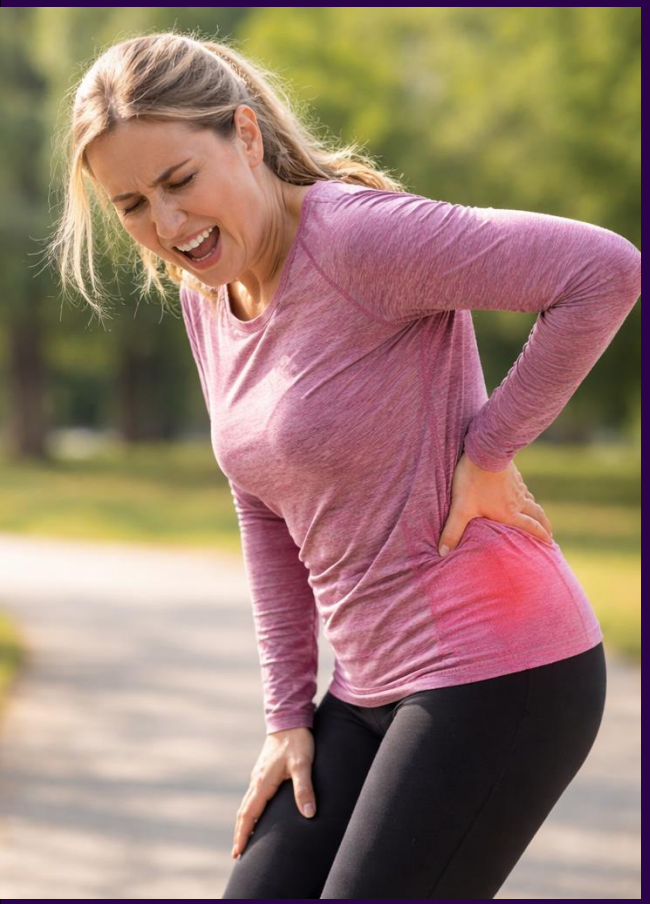
E. Osteitis Pubis, Athletic Pubalgia

F. Adductor Strain



https://www.atozmedicine.com/blog/where-does-it-hurt-use-our-hip-pain-location-diagram/?bp=47256

CONDITIONS – LATERAL HIP

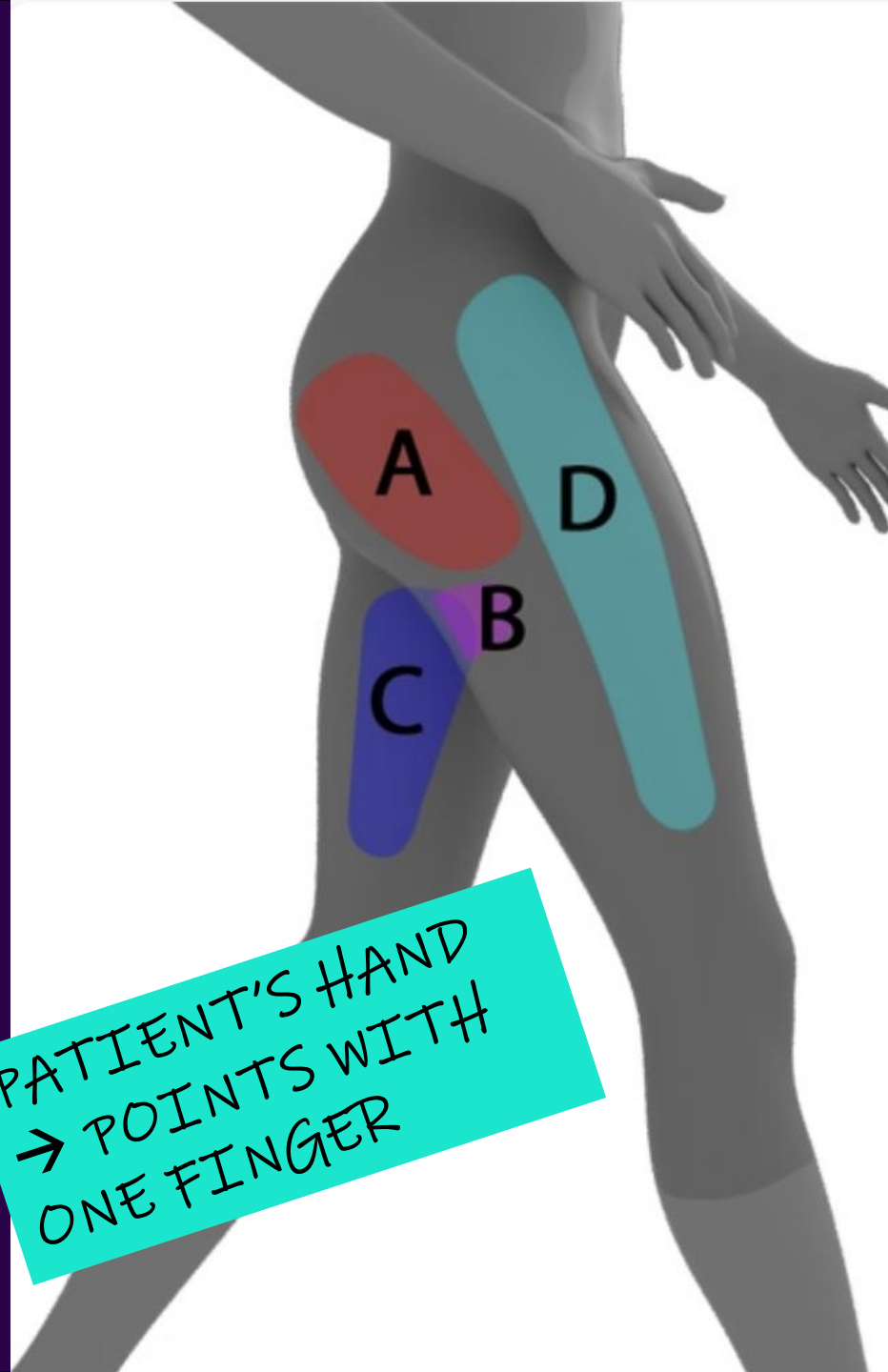


A. ITB Syndrome, Trochanteric Bursitis, Gluteal Tendinitis

B. Hamstring Tendinitis

C. Groin Strain

D. Meralgia Parasthetica, Quad Strain

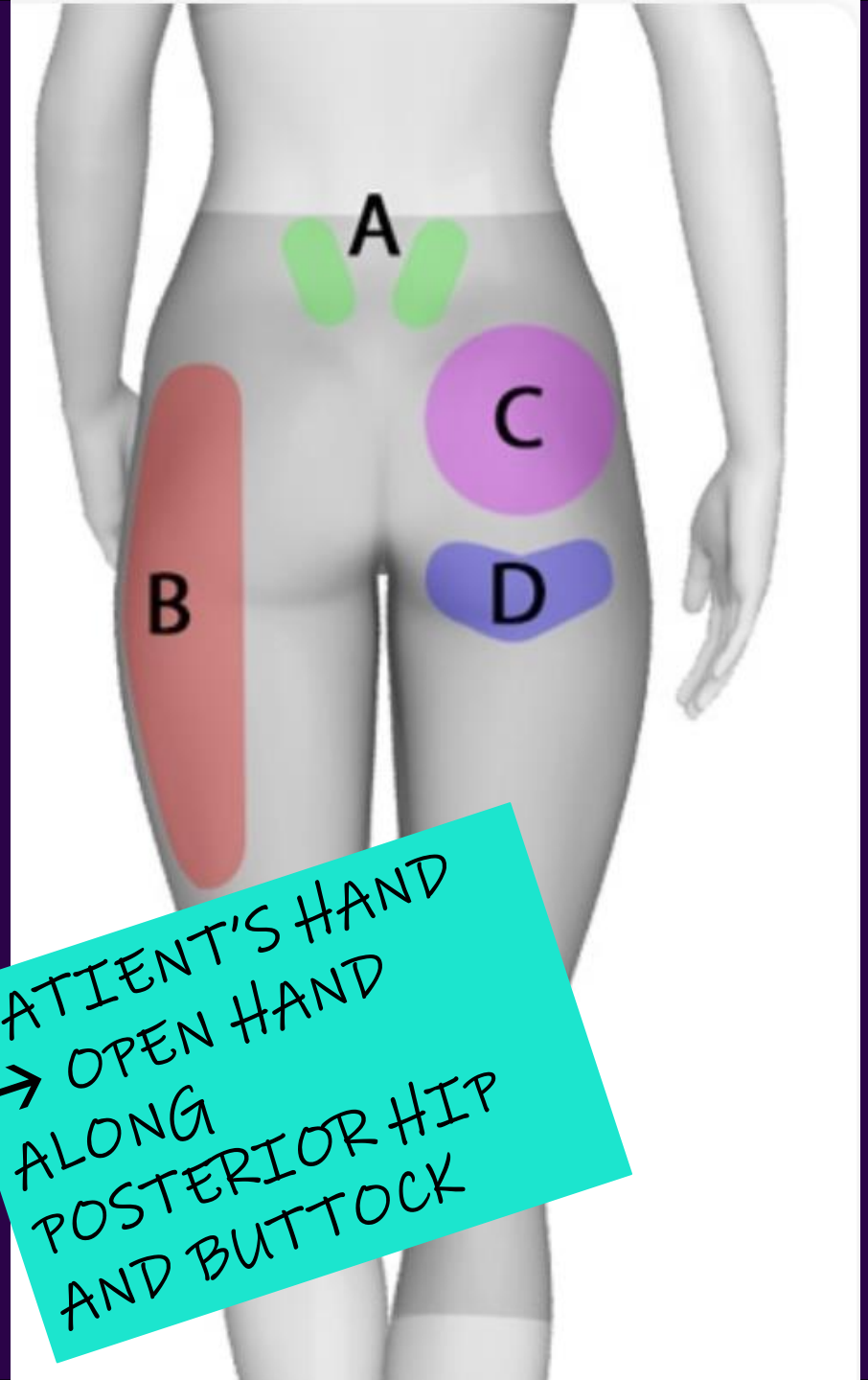


https://www.towncenterortho.com/blog/where-does-it-hurt-use-our-hip-pain-location-diagram/?bp=47256

CONDITIONS – POSTERIOR HIP



A. Sacroiliac Joint Pain
B. Lumbar Radiculopathy/Sciatica
C. Piriformis Pain, Deep Gluteal Syndrome
D. Proximal Hamstring Tendinopathy, Pudendal Nerve Entrapment



https://www.towncenterortho.com/blog/where-does-it-hurt-use-our-hip-pain-location-diagram/?bp=47256

HIGH YIELD PHYSICAL EXAM



LOOK

Observation. Gait. Stance/posture.

FEEL

Palpation. "What's under the skin?"

MOVE

Active AND PASSIVE range of motion. Is it symmetric? Where is the pain?

STRESS

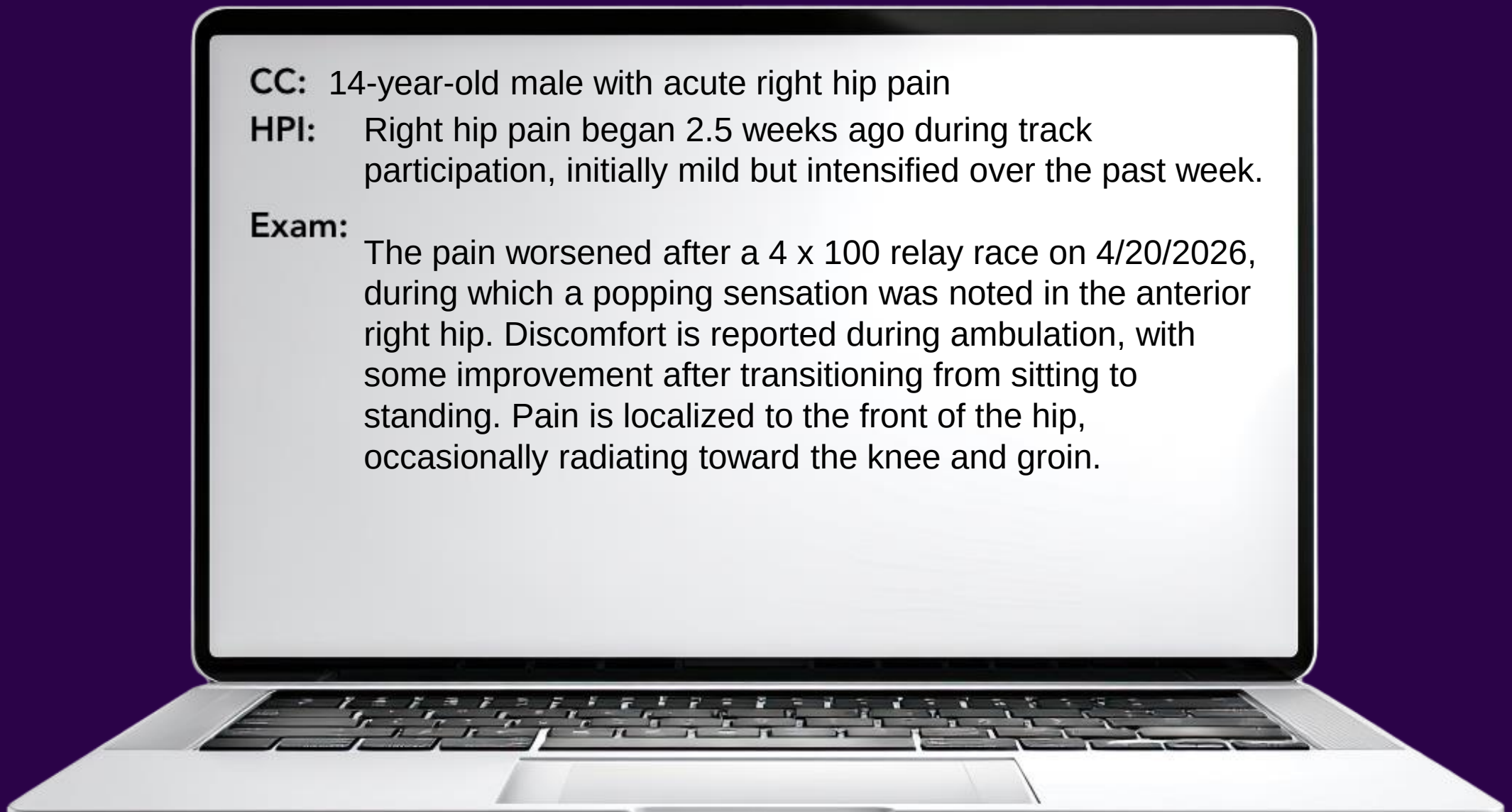
Special tests. "If this causes pain, what could be the reason?"

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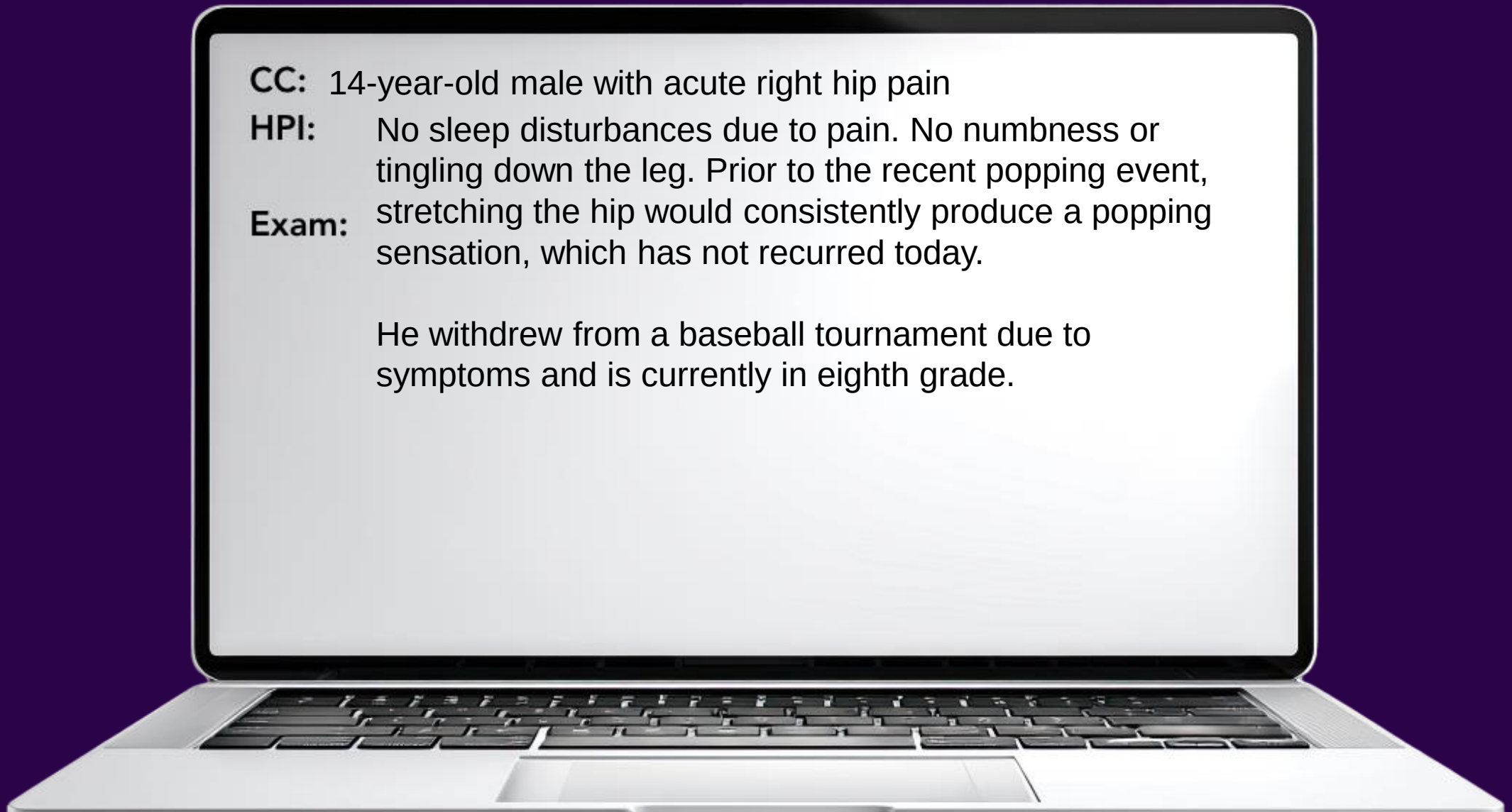
PHYSICAL EXAM – HIP

- ❑ Gait evaluation
- ❑ Range of motion: hip AND spine
- ❑ Muscle strength: hip, knee, ankle
- ❑ Surface palpation: Greater Trochanter, SI joint, lumbar spine (and groin if necessary)
- ❑ Special tests: Trendelenburg's Test for Gluteus Medius, assess for AI

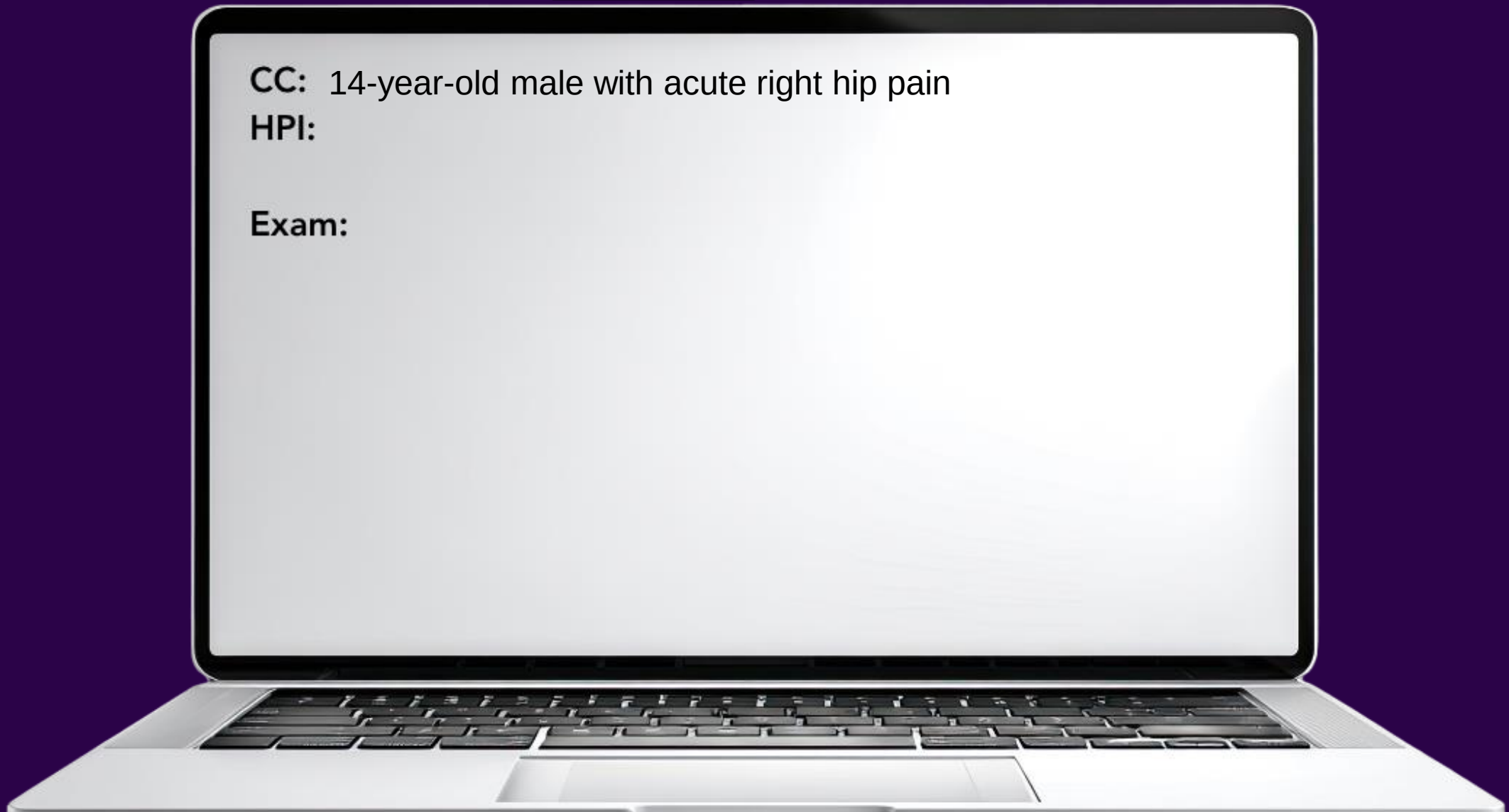
CASE STUDY - HIP



CASE STUDY - HIP



PHYSICAL EXAM - HIP

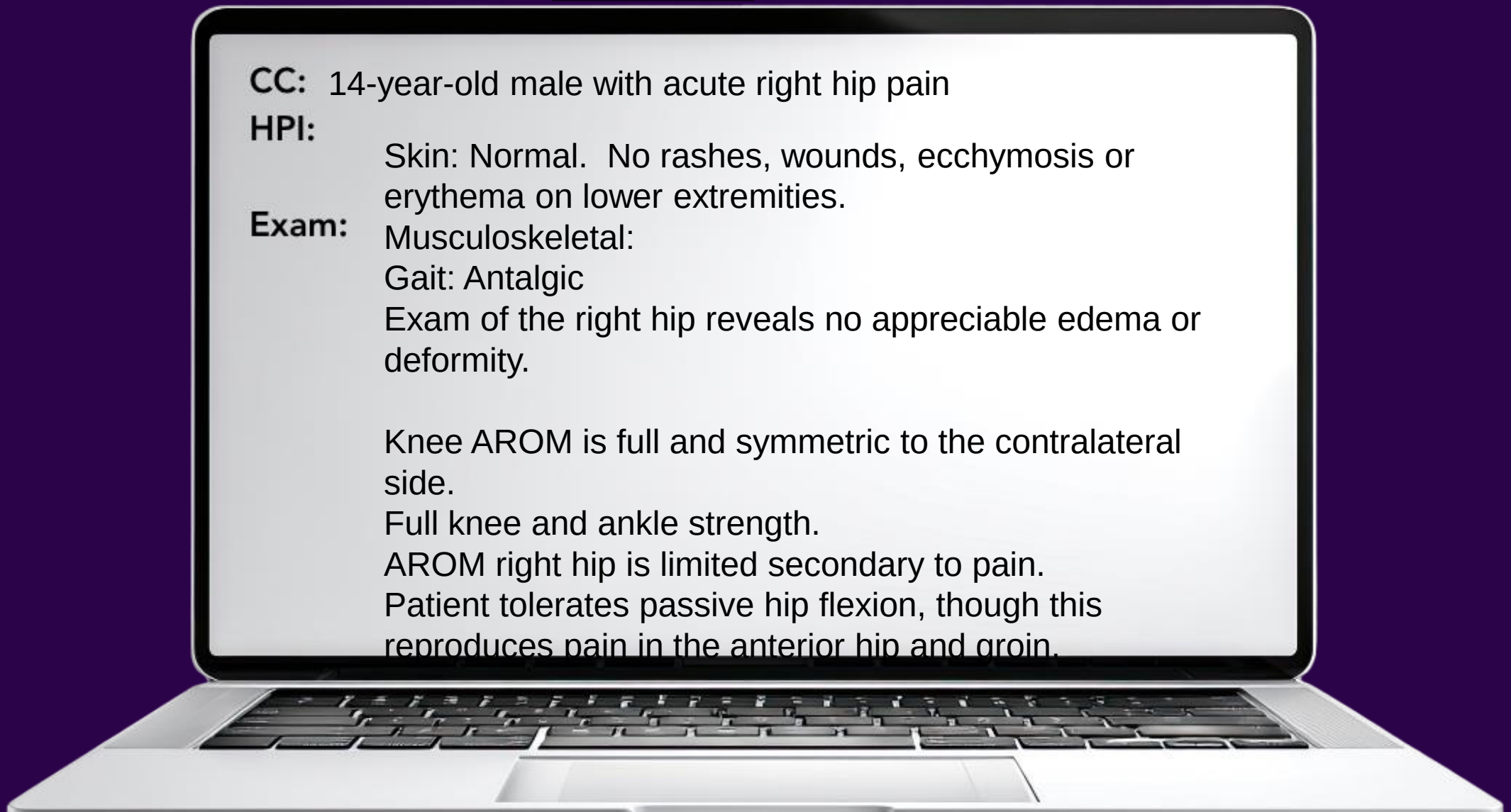


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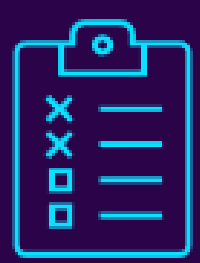


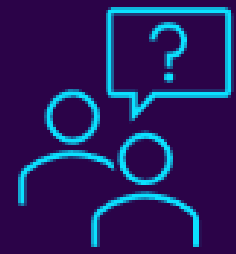

R

PHYSICAL EXAM - HIP



PHYSICAL EXAM - HIP





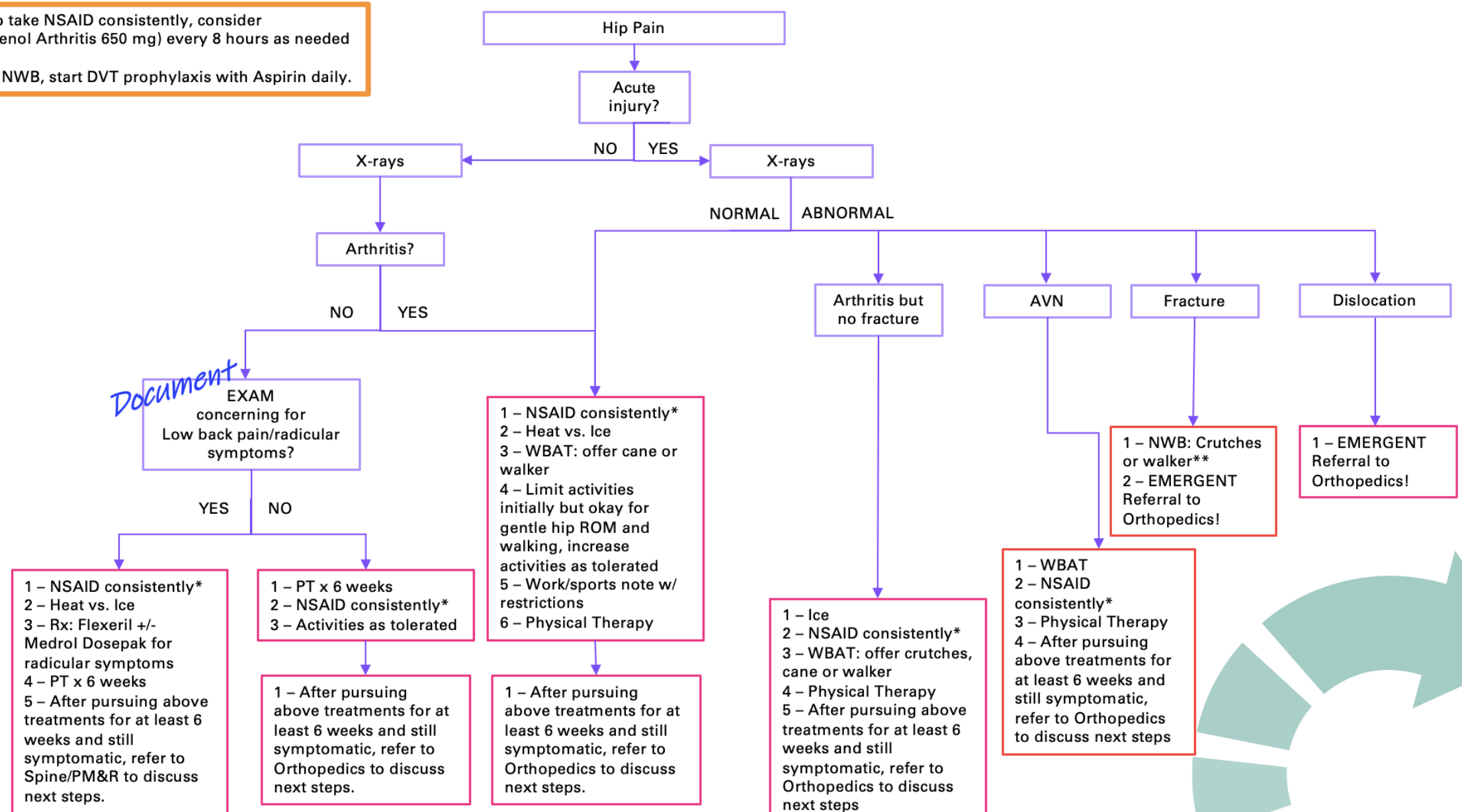
IMPRESSION

1. Right hip flexor strain

PLAN

1. Patient education regarding the impression was discussed. Radiographs reviewed with the patient.
2. Conservative care options including physical therapy, NSAIDs, ice and activity modification were discussed.
3. Hip spica Ace wrap: patient provided with 6 inch Ace wrap to utilize for hip spica Ace wrap for daily activities, okay to take off for hygiene and sleeping. Advised to look at YouTube video on how to apply this.
4. Physical therapy: An order for PT is provided. They will do this closer to home.
5. Activities: No running or sports at this time. When he is able to walk without pain then he can try running. When he is able to run without pain, and he can gradually return to sports.
6. Follow-up if symptoms worsen or fail to improve over the next couple months with our nonop sports medicine team. Otherwise follow-up as needed.

* If patient unable to take NSAID consistently, consider acetaminophen (Tylenol Arthritis 650 mg) every 8 hours as needed for pain.
** If patient is to be NWB, start DVT prophylaxis with Aspirin daily.



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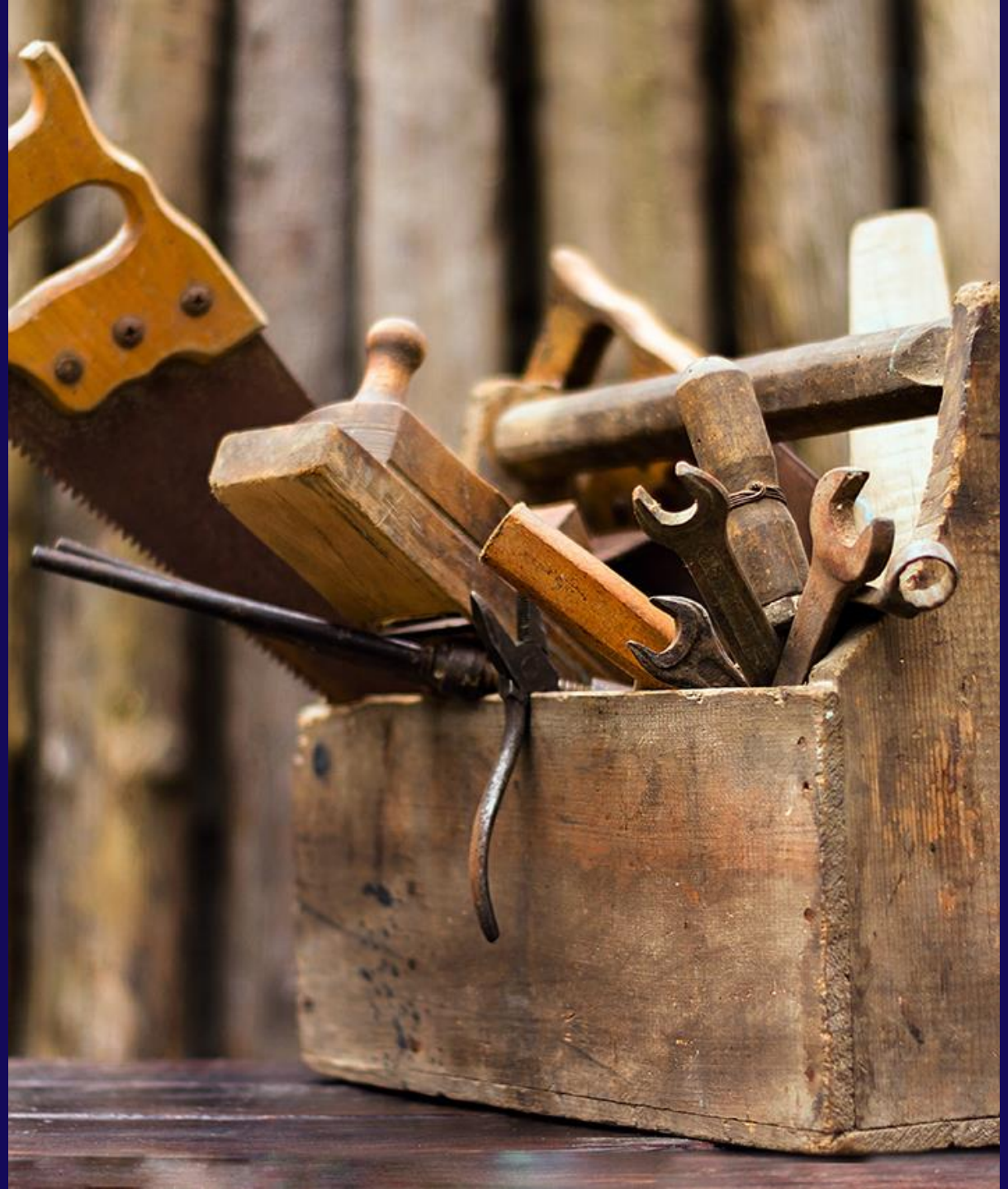
THE ARTHRITIS TOOLBOX

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THE ARTHRITIS TOOLBOX

NSAID

→ used consistently for short duration (+/- Tylenol Arthritis 650mg)*

*If patient is unable to take oral NSAIDs, consider topical diclofenac gel consistently for a period of time.



THE ARTHRITIS TOOLBOX

SPLINT or COMPRESSION

→Knee sleeve

→ Wrist cock-up brace or Modabber splint or short arm wrist orthosis for pain flares



THE ARTHRITIS TOOLBOX

ACTIVITY MODIFICATION

→ How can the patient avoid aggravating the painful joint?



THE ARTHRITIS TOOLBOX

PHYSICAL THERAPY

→ Refer to PT for eval and treat which could include active and passive motion, stretching muscles that are tight and strengthening muscles that are weak, assessing core strength, and modalities, etc.



THE ARTHRITIS TOOLBOX

ALTERNATIVE MEDICINE

→ age-old home remedies



ALTERNATIVE MEDICINE

1. **Warm Epsom Salt Soaks**

A long-time folk favorite.
Why people used it: Magnesium-rich salts were believed to ease muscle tension and calm achy joints.
How: Dissolve Epsom salts in warm (not hot) water and soak the hand/wrist 10–15 minutes.

2. **Warm Compresses & Moist Heat**

Grandma’s go-to.
Why: Warmth increases circulation and reduces stiffness, especially in the morning.
How: Warm towel, rice sock, or heating pad for 10–20 minutes.

ALTERNATIVE MEDICINE

 3. **Paraffin Wax Baths**
Used in physical therapy *and* old home settings.
Why: Deep, penetrating moist heat reduces stiffness in arthritic joints.
How: Warm paraffin bath → dip hand repeatedly to build a coating → wrap in towel 10–15 minutes

❄ 4. **Cold Therapy (for swelling flare-ups)**
The opposite of heat—but equally old-school.
Why: Helps calm inflammation when joints are puffy or throbbing.
How: Cold pack or bag of frozen peas for 10–15 minutes.

ALTERNATIVE MEDICINE

🌿 5. **Topical Herbal Rubs**
Traditional remedies included:
* **Arnica**
* **Comfrey salve**
* **Ginger paste/warm ginger compress**
* **Turmeric pastes**
  Some people used vinegar–herb rubs or menthol/mint preparations (precursors to modern creams).

🍒 6. **Cherry Juice or Tart Cherries**
A folk anti-inflammatory remedy.
Often used for gout but sometimes for arthritic symptoms.

ALTERNATIVE MEDICINE

7. **Old Remedies Using Heat-Producing Ingredients**
Historically: mustard plasters or capsicum (red pepper) rubs.
These work similarly to modern capsaicin cream — providing a “warming distraction” from joint pain.

ALTERNATIVE MEDICINE

“Gin-Soaked Raisins” — The Classic Remedy
This remedy typically involves:
- **Golden raisins (sometimes called white raisins)**
- **Soaked in gin** (traditionally gin made with juniper berries)
- People eat **7–9 raisins a day**

It became especially popular in the U.S. after being featured in newspapers and on talk shows in the 1980s and 1990s.

Why did people think it worked?
There’s **no scientific research proving** that gin-soaked raisins reduce arthritis pain, but here are the *theories* behind it:
- **Juniper berries**, used to flavor gin, have mild anti-inflammatory properties in lab settings.
- **Raisins** contain antioxidants.
- **Alcohol** may create a warm, vasodilating sensation.
- Some people simply experience a placebo benefit — which can be powerful for chronic pain.

THE ARTHRITIS TOOLBOX

1. NSAID used consistently for short duration (+/- Tylenol Arthritis 650mg)
2. Splint or compression
3. Activity modification
4. Therapy
5. Alternative medicine with less definitive support but may provide relief.
6. Corticosteroid injection



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ChatGPT – utilized for graphic creation and age-old home remedies for arthritis

FINAL TIPS & TAKEAWAYS

Always get an X-ray. Weightbearing!

What's under the skin?

Knee pain? Examine the hip too.

How do they 'describe' the pain with their hand?

Use the Ortho MDM Accelerator™ to determine initial treatment!

Use the Arthritis Toolbox to help patients manage the symptoms of arthritis!

THANK YOU

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I want to hear from you!