

NIH Pain Consortium

Centers of Excellence in Pain Education



An Older Adult with Chronic Low Back Pain

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Introduction

This module covers an older adult with chronic low back pain.

After completing this module, you should be able to:

- Differentiate the weak link and the treatment targets in older adults with chronic low back pain.
- Articulate realistic treatment expectations for chronic non-cancer pain.
- Describe a rational stepped care treatment approach for older patients with chronic low back pain.

This course has been designed for:

- Medical students in years 1 through 3.
- Advanced undergraduate and years one to two masters degree nursing students.
- Dental students in year 3.
- Students in year 2 of a doctoral physical therapy degree.
- Pharmacy students in year 3.

The module features four main categories:

- Case study
- Learning Resources
- Additional Reading
- Testing Center

Module Section Summaries:

Case Study:

Through the case study, you follow Edna, a seventy-year-old woman with chronic low back pain. You'll learn questions for health history, and physical exams to perform. You'll discover setbacks commonly found with chronic pain patients.

You'll be quizzed throughout the case study to help you retain the information, although the questions are not scored. ¹

Learning Resources

All supporting materials to understand the case study are included in the Learning Resources section.

Additional Reading:

The Additional Reading sections includes links to the Cochrane Review, which covers the efficacy of spinal injections for chronic low back pain, the Beer Criteria, which looks at medication risk in older adults, and an article titled, "Pain Medicine in Older Adults: How Should it Differ?"

Testing Center

The Testing Center features an unscored practice pre-test and the scored final test.

Navigate through the module whichever way you prefer.

¹ Note: all questions asked through the Case Study may have more than one correct answer. Questions are not scored.

Case Study

Edna is a seventy-year-old woman who just moved to Pittsburgh. She lives by herself, and suffers from chronic low back pain.

Health History

Edna's general health is good, with no weight loss, fever, or chills. She experiences normal urination and bowel movements.

The following cover areas of Edna's health history:

- Lower back pain for three years. She says she was able to manage her pain at first and was able to do what she needed to do. However, over the past six months, the pain has gotten much worse.
- Sitting, lying down, and taking warm baths help relieve her pain, although not for very long.
- Denies weakness with her pain, although she says the pain does make her feel tired.
- In addition to her back pain, she experiences pain in her right leg, but not both legs.

Question: You need to know more about Edna's pain. How should you have her rate it?

1. Overall, on a scale of 1 to 10, with 10 being the worst pain you've ever felt.
2. On a scale of 1 to 10, how bad pain is at its worst, as well as its best.
3. On a scale of 1 to 10, how bad is pain during three specific activities you used to enjoy?

Question: A patient's "pain signature is defined by limitations set by pain during specific activities. Pain might limit which of the following for Edna?²

1. [Housework](#)
2. [Spending time with friends](#)
3. [Shopping](#)

Question: Edna's chronic pain isn't constant pain all the time. If it were, it could indicate which of the following?

1. [Cancer](#)
2. [Somatization disorder](#)
3. [Central Sensitization](#)
4. [Really bad back pain](#)

Question: Edna doesn't complain of night pain, but many older adults do. If a patient says they wake up to night pain, what might be the cause?³

1. [Older adults often have fragmented sleep.](#)
2. [Something other than pain wakes them up, then they notice it.](#)
3. [They're sleeping in a certain position that aggravates a chronic pain condition.](#)

² Note: Be specific when asking how pain limits a patient's function. Ask for examples of before/after comparisons.

³ Note: Night pain in older adults doesn't necessarily mean pain wakes them up.

Physical Exam

Locate Area of Pain

To locate the area of pain, Edna needs to show you where she hurts.

The following describe potential diagnoses depending on the location of the pain:

- *Leg pain:* if pain shoots down the leg, or if the patient has numbness or paresthesias down the leg to the foot, it could be a radiculopathy.
- *Diffuse thigh pain:* if there's diffuse pain in the thigh that doesn't radiate past the knee, it might be a hip problem.
- *Lateral thigh pain:* if pain is the lateral aspect of the thigh, it could be an iliotibial band problem.
- *Pain in buttocks:* if pain is in the buttocks, it could be the hip, manifestation of radiculopathy, or a sacroiliac joint problem.
- *Waist pain:* if pain is localized to waist level, it could be either a muscular, a paralumbar myofascial pain problem, or degenerative disc or facet problem.
- *Pain below waist:* if pain is below the waist, it's more likely a sacroiliac problem.

Standing Exam

The following describe physical exams performed while Edna stands:

- *Gait:* Dr. Weiner asks Edna to walk back and forth across the examining room. Edna can be seen to clearly favor her right leg as she walks.

Dr. Weiner describes the following as Edna walks:

“Notice Edna’s gait. She’s protecting that right leg. We call this an ‘antalgic gait.’ And so already we’re getting some good clues as to why her back might hurt, because there’s a connection in the biomechanics of the spine, pelvis, and hip.”

- *Spinal Alignment:* to check Edna’s spinal alignment, Dr. Weiner positions Edna standing with her back facing the viewer.

First, she pulls aside Edna’s exam gown to expose her back and notes that the exam should always be performed without clothing covering the patient’s back.

Second, Dr. Weiner visually examines Edna’s back and spine.

Third, Dr. Weiner places her left hand on Edna’s left scapula and her right hand on Edna’s right scapula and notes that Edna’s left scapula sits a little higher than her right scapula.

Fourth, Dr. Weiner positions her index finger and middle finger of her dominant hand, and physically traces Edna’s spine. Dr. Weiner notes Edna’s spine curves, an indication of scoliosis.

Dr. Weiner describes the following as she performs the exam for spinal alignment:

“Very important to look at the patient’s back without clothing covering the spine. So first, we just inspect, and you can see that there’s actually a little bit of asymmetry, so this scapula is riding a little bit higher, so already we have a clue that there may be some scoliosis. And then what you do, tell the patient you’re going to touch their back.

(Addressing Edna) ‘So Edna, I’m just going to run my two fingers along your spine very lightly.’

And then you can actually appreciate the scoliosis, okay? So it may not be obvious with inspection, but it may be more obvious with palpation.”

- **Kyphosis:** to check for symptoms of kyphosis, Dr. Weiner positions Edna in profile, perpendicular to the viewer, with her examining gown still exposing her back. Dr. Weiner sweeps her hand down Edna’s back in a straight line, starting from the top of Edna’s spine, to see if any portions of the spine project further outward from the plane of the spine and back. Dr. Weiner notes no protrusions to indicate kyphosis in Edna.

Dr. Weiner describes the following as she performs the exam for kyphosis:

“You want to examine if there’s any forward curvature of the thoracic spine, and you can see Edna has very nice posture.”

- **Leg length discrepancy:** to determine whether Edna has functional leg length discrepancy, Dr. Weiner positions Edna with her back facing the viewer. Edna’s examining gown exposes her bare back and buttocks covered with undergarments, and bare upper legs.

Dr. Weiner places her hands around Edna’s sides, grasping lightly just above the iliac crest, with her thumbs pointing toward each other. Dr. Weiner then kneels down behind the patient to visually observe the effect of where her hands sit on Edna’s iliac crest by lining up her field of vision to Edna’s waist level. Dr. Weiner observes that her hands line up along Edna’s iliac crest, thereby indicating that Edna has no functional leg length discrepancy.

Dr. Weiner describes the following as she performs the exam for kyphosis:

“Take our hands, put them atop the iliac crest bilaterally, and you want to kneel down so that your line of vision is parallel with patient’s waist. And you look and see if your fingers line up. And

mine do, so Edna has no functional leg length discrepancy. If, on the other hand, it would've been like this, for example (Dr. Weiner turns her hands to indicate that one side of the iliac crest rests higher than the other), that would've indicated a functional leg length discrepancy."

- *Sacroiliac joints:* to examine Edna's sacroiliac joints, Dr. Weiner positions her with her back to the viewer, with her back, waist, and buttocks exposed by the examining gown. Starting at eye level with Edna's waist, Dr. Weiner tugs down Edna's underwear about an inch to expose the sacral dimples, which are highlighted by the sacral dimples. Dr. Weiner explains that if the sacral dimples cannot be found visually, the practitioner can locate the sacroiliac joints by placing each hand above Edna's iliac crest on either side, with thumbs pointing toward each other. By rotating the thumbs forty five degrees down, the sacroiliac joints can be located.

To palpate the sacroiliac joints to discover whether the patient feels pain upon palpation, stand perpendicular to the patient, and brace them with an arm in front while using the opposite hand to palpate the sacroiliac joints. Edna shows no pain upon palpation.

Dr. Weiner describes the following as she performs the sacroiliac joint exam:

"You want to examine Edna's sacroiliac joints, and anatomically, you can see these are highlighted by the sacral dimples. If the sacral dimples were not obvious, you would again put your hands atop the iliac crest, turn about forty five degrees and it's where your thumb falls, but for palpation, say, 'Edna, I'm going to hug you from the front and press from behind. And so you press firmly over the sacroiliac joints.

(Addressing Edna) 'Does any of that you hurt you, Edna? No? Okay, very good.'"

- *Paraspinal musculature:* to examine Edna's paraspinal musculature, Dr. Weiner positions her with her back facing the viewer. Edna's back is exposed by her examining gown. Dr. Weiner positions her hand flat with the palm facing Edna's back, just below Edna's scapula. She uses the first two fingers of her hand to palpate the muscle along Edna's spine, while asking Edna if she feels any pain upon doing so. Edna denies any pain during palpation.

Dr. Weiner describes the following as she performs the paraspinal musculature exam:

“Place your hand perpendicular to the direction of the muscle fibers and firmly palpate, feeling for the texture of the muscle and asking the patient if they have any pain.”

(Addressing Edna) ‘Any discomfort when I palpate, Edna? No? Okay, very good.’”

Lying Exam

The following describe exams performed while Edna lies supine on an examining table:

- *Hip range of motion:* to perform the hip range of motion physical exam, Dr. Weiner has Edna lie down on an examining table. She walks to Edna's left side to perform the test first on Edna's non-painful left leg. Dr. Weiner lifts a light blanket that covers Edna and her examining gown to the knee to expose Edna's left leg to the upper thigh. Then Dr. Weiner grasps Edna's upper calf, just under the knee with her left hand, supporting Edna's calf with her left lower arm, while she bends Edna's leg into a ninety degree angle at the knee and the hip. Once positioned so, Dr. Weiner then gently pushes Edna's lower leg toward the center of her body and asks if she feels any pain. Edna denies any pain. When Dr. Weiner repeats the same test on Edna's right leg, Edna admits to pain within ten degrees of internal rotation, and cannot have the test continued.

Dr. Weiner describes the following as she performs the hip range of motion exam:

“Since it’s Edna’s right leg that’s painful, we’re going to start with the non-painful leg.

(Addressing Edna) ‘So you just relax and let me have your leg, okay?’

So, ninety degrees here, and ninety degrees here, okay? And then you want to internally rotate.

(Addressing Edna) ‘Any pain there, Edna? No? Okay, that’s great. Okay, now I’m going to examine your hip on the other side. Again, just let me have your leg. That’s great. Okay, and oh, are you having pain there?’

Okay, so she has very limited range, about ten degrees of internal rotation, and pain with internal rotation. Okay.”

- **Faber’s Test:** to perform the exam for Faber’s test, Dr. Weiner tells Edna to use her non-painful leg, which in this case is her left. Edna is directed to take her left heel and place it just above her right knee, while she lies on an examining table. Then, Dr. Weiner tells Edna to let her leg fall back toward the examining table while her left heel still rests above her right knee. Dr. Weiner asks Edna if she feels any pain while doing so. Edna denies any pain. Therefore, Faber’s Test is negative.

Dr. Weiner describes the following as she performs the exam for Faber’s Test:

“(Video Caption) ‘Faber’s test performed on Edna’s non-painful left leg.’

(Addressing Edna) ‘Take this heel and put it on this knee. Right. And just let your leg fall toward the table. Does that cause you any

discomfort? No? So Faber's Test is negative there. Okay, that's good."

- *Piriformis musculature*: to perform the exam for piriformis musculature, Dr. Weiner asks Edna to bend her left knee as she lies on an examining table, and cross her left leg over her right after she bends the knee. While Edna stays in this position, Dr. Weiner places her right hand on Edna's pelvis to stabilize it, and using her left hand, gently pushes Edna's left knee toward the right to prepare for palpation by stretching out the piriformis musculature.

Once the piriformis musculature has been stretched, Dr. Weiner explains that piriformis musculature runs in the direction of the greater trochanter to the sacrum. Using the fingers of her right hand, while her left hand keeps the pressure on Edna's left knee to stretch the piriformis musculature, Dr. Weiner palpates in the same direction she just described. She asks Edna if she feels any pain while doing so. Edna denies any pain, giving a negative result for pain in the piriformis musculature.

Dr. Weiner describes the following as she performs the exam for piriformis musculature pain:

"(Video caption) 'Perform on non-painful leg.'

(Addressing Edna) 'Bend your knee for me, like that. And now I'm going to have you take your foot and cross it over here. Okay, you okay? All right.' We make the pelvis stable, we put a little bit of stretch on the piriformis and we palpate it so (addressing Edna) 'Let's see, Edna, can you lift your bottom up just a bit. That's great.'

So the piriformis is running from the greater trochanter to the sacrum, so it's running in this direction so I'm going to palpate in this direction.

(Addressing Edna) 'Any tenderness here, Edna? No? Okay.'"

- *Iliotibial band*: to perform the iliotibial band exam, Dr. Weiner examines Edna's non-painful left leg while Edna lies on an examining table. She places both hands, palms down, on the lateral aspect of Edna's thigh. Using her thumbs, Dr. Weiner firmly presses down along the iliotibial band for the entire length of the lateral aspect of Edna's thigh. She asks Edna if she feels any pain while doing so. Edna denies any pain, giving a negative result for iliotibial band pain.

Dr. Weiner describes the following as she performs the exam for iliotibial band pain:

"All we have to do is put our hands atop the thigh and then firmly roll across the iliotibial band all down the lateral aspect of the thigh. (Addressing Edna) 'Any tenderness anywhere here, Edna? No.'"

Question: How would you diagnose Edna?

1. [Hip osteoarthritis](#)
2. [Sacroiliac pain](#)
3. [Kyphosis](#)
4. [Myofascial pain of the piriformis](#)

Diagnosis

Dr. Weiner diagnosed Edna with hip osteoarthritis, which causes Edna's chronic low back pain. Dr. Weiner describes the following to explain the diagnosis of hip osteoarthritis to Edna:

"What we have to think of is the way the spine functions. And by that I mean the spine, the pelvis, and the hip move together as a unit. And so because your hip isn't moving normally it's irritating your spine. But if you didn't have that hip arthritis and your hip moved normally, that arthritis in your back and the stenosis in your back likely wouldn't be causing you any symptoms at all. So the way you can think of it is the back is your weak link, but it's not the treatment target. The thing that we need to target with treatment is your hip."

Question: What options would you offer Edna for treatment?

1. [Physical therapy](#)
2. [Medication](#)
3. [Anti-inflammatory shot](#)
4. [An option not listed](#)

Treatment

Patients should be allowed to choose among available treatments. After being offered the treatment options of physical therapy, pain medication, and an anti-inflammatory shot, Edna tells Dr. Weiner the following about her choice of treatment:

“Well, I’m not interested in any pain medication. But I would to try that shot. As far as physical therapy is concerned, I tried that a couple times and it didn’t help.”

Question: Edna told you her treatment preferences. Do you think you should encourage her to try anything specific?

1. [Medication](#)
2. [Anti-inflammatory shot](#)
3. [Physical therapy](#)

Physical Therapy Target

Dr. Weiner wants to encourage Edna to try physical therapy that targets her hip. In the past, Edna tried physical therapy targeting her back. Below, Dr. Weiner discusses with Edna the difference between a treatment target of the hip and the past treatment target of the back.

“(Dr. Weiner) Do you remember exactly what they did with the physical therapy? Did they focus kind of on making your back more flexible?”

(Edna) I think so.

(Dr. Weiner) Yeah, so it may have been that instead of focusing on making your hip more flexible so that your back wouldn't become irritated when you walk, they focused on just your back, and that may not have provided the best potential relief for you. So I think, I mean if you're not opposed to trying it again, I would like to send you to a physical therapist that I know could do the right kind of treatment on your hip.

(Edna) Okay."

Previous Medical Advice

A previous doctor told Edna she might need spinal surgery if her pain didn't improve. Edna's now suffered from back pain for three years. As she speaks with Dr. Weiner, she describes the following about the medical advice given to her by a previous doctor.

"Well, the doctor that I went to before had taken an MRI. He said that I have arthritis and spinal stenosis. And he said that if the pain didn't improve, that I was going to have to...might have to have spinal surgery."

Question: Which of the following features in Edna's case support a diagnosis of lumbar spinal stenosis?

1. [No pain when sitting](#)
2. [Antalgic gait](#)
3. [One painful leg](#)
4. [Pain worse when walking](#)

Question: True or False? If Edna's MRI showed spinal stenosis, it should be treated along with her hip osteoarthritis.

1. [True](#)
2. [False](#)

When to Treat Stenosis

If you see spinal stenosis on an MRI, it doesn't mean it's causing symptoms. Studies show twenty percent of older adults will have evidence of spinal stenosis on MRI, but be asymptomatic.

Even if a patient has symptomatic stenosis, an adequate course of pharmacological and non-pharmacological treatment options should be considered before making a surgical referral. However, the 2008 Cochrane Review shows no strong evidence that an epidural spinal injection would help symptomatic stenosis.

Imaging isn't routinely recommended to diagnose the cause of low back pain. It may be needed if red flags come up, but you should rely instead on the history and physical for diagnosis.

Followup 1

It's been a few weeks, and Edna's back for a follow up visit. Dr. Weiner asks Edna if the anti-inflammatory shot help her pain. Edna replies with the following:

"It did help a little bit, but it, you know, only lasted a few weeks. And now the pain's right back to where it was."

The inflammatory shot didn't help Edna's pain for very long. Next, Dr. Weiner asks Edna about the outcome of her physical therapy. Edna replies with the following:

"I've gone a couple of times. I don't think it's helping."

Question: Edna said physical therapy isn't helping with her pain. You should suggest which of the following?

1. [Continue with physical therapy](#)
2. [Discontinue physical therapy](#)

Physical Therapy

Below, Dr. Weiner discusses with Edna the benefits to continuing with physical therapy.

“(Dr. Weiner) It would be a good idea to give it a little bit longer. Remember, you’ve had pain now for quite some time and it’s a process to get better. And the other really important thing to remember is that what I want you to mainly focus on, is improving your function, rather than getting rid of your pain. You’re going to continue having some pain, but even though you do have some pain you will be able to function significantly better. Would you be willing to try physical therapy a little bit longer?”

(Edna) Yes, but I would like something to help with the pain.”

Question: Edna wants medication to relieve pain as she attempts to improve function through physical therapy. You recommend which of the following?

1. [Acetaminophen, as needed](#)
2. [Regular schedule of acetaminophen](#)
3. [Ibuprofen, as needed](#)
4. [Regular schedule of ibuprofen](#)

Question: Maintaining a constant presence of analgesic (pain relieving) medication can help prevent pain crises. However, which over the counter medication should you avoid prescribing to older adults?

1. [Ibuprofen](#)
2. [Aspirin greater than 325 mg/d](#)
3. [Naproxen](#)

Question: Physical therapy is part of Edna's treatment plan. As a physical therapist, you should be concerned if which of the following occurs?

1. Edna doesn't respond to treatment as quickly as similar patients.
2. Edna cancels a lot of appointments.
3. Edna doesn't adhere to the home exercise program.
4. None of the options listed.

Question: Additionally, as Edna's physical therapist, you should be concerned if which of the following occurs?

1. Edna shows no emotion when you try to cheer her up, talk to, or motivate her.
2. Edna asks, "Why bother working hard? I'll probably never get better."
3. None of the options listed.

Question: True or false? Physical therapy outcomes can be affected by mood disorders?

1. True
2. False

Question: As the physical therapist, what should you do about your concerns about Edna?

1. Give her easier exercises.
2. Tell her primary care physician.
3. Increase the length of time for her appointments.

Question: During Edna's next primary care appointment, how can you determine if she suffers from a mood disorder?

1. Ask screening questions.
2. Because the physical therapist told you.
3. She looks really down.

Mood Disorders

Depression

As Edna's primary care provider, you've decided to screen Edna for possible mood disorders. Below are screening questions for depression, followed by Edna's response.

- Over the past two weeks, how often have you felt little interest or pleasure in doing things?

"Most of the time."

- Over the past two weeks, how often have you felt down, depressed, or hopeless?

"At least half the time."

Question: Yes or no? Is Edna depressed, based on her answers to the questions you asked?

1. Yes
2. No

Treating Depression

You've determined Edna suffers from depression. Dr. Weiner asks Edna if she would consider taking an antidepressant to combat her depression. Edna says she'll try it.

Anxiety

Edna agreed to take an anti-depressant. However, you also want to screen for additional mood disorders, like anxiety. Below are screening questions for anxiety, followed by Edna's response.

- Are you afraid being active will make the pain worse?

"I'm pretty sure it'll make it worse. In fact it might actually damage my back. Which is why I haven't been doing anything."

- Would it be helpful to have someone to be active with?

"Yeah. I think so. I mean I, I feel very alone living with this pain. And I'm really fearful about my future."

Question: Yes or no? Does Edna exhibit anxiety through fear avoidance behavior, based on her answers to the questions you asked?

1. Yes
2. No

Pain Behavior

Question: You now know about Edna's mood, health history, and physical exam results. Which of the following pain behaviors does Edna display?

1. [Suffering](#)
2. [Pain](#)
3. [Emotional response to pain](#)

Question: Edna said she felt alone. Remember, she just moved to town, and she lives by herself. Do you have any recommendations for her?

1. [Talk to other patients at physical therapy sessions.](#)
2. [Do more shopping.](#)
3. [Look up area senior centers.](#)

Social Isolation

Edna said she felt alone. To combat her social isolation, Dr. Weiner suggests Edna join a senior center and offers to give her information on senior centers in her area. Below is Edna's response to Dr. Weiner's suggestion of joining a senior center.

"Yeah, I think that's a good idea. Thank you."

Outcomes

Edna now takes regularly scheduled acetaminophen and an antidepressant. She attends physical therapy and just joined a senior center. Below, she talks with Dr. Weiner about her progress.

"(Edna) I feel so much better."

(Dr. Weiner) Wonderful.

(Edna) I made some new friends at the senior center. I go for walks every day.

(Dr. Weiner) Terrific!

(Edna) I mean, it is so good to get out of the house. I want to thank you for everything you have done for me."

Learning Resources

Pain Processing

Pain processing involves nociception, which begins with signals from stimulated nerves in the skin, muscles, joints, and viscera. This sensory-discriminative information then travels to the brain to convey information about potential tissue damage, and to create the sensation of pain.

The sensory discriminative information sent to the brain through the nociceptive channel generates a motivational affective emotional reaction, mostly mid-brain based. Cognitions attach meaning to the emotional experience, and these thoughts about pain can then trigger additional emotional reactions.

The descending modulatory influences from emotion and thoughts about pain can amplify the overall experience of pain, and contribute to a vicious cycle of nociception, pain, distress, and disability. Those influences include glutamate, GABA, NMDA, norepinephrine, and serotonin.

Amplified pain signaling in the central nervous system can result in a phenomenon known as central sensitization. A growing body of evidence suggests that central sensitization plays an important role in patients with a variety of pain disorders, including those of the musculoskeletal system, like low back pain.

Treatment Targets

Pain processing is complex and multifactorial, just like its consequences and treatment targets. Treatment targets include three broad domains: physical, psychological, and social. Each patient has a unique set of pain contributors and manifestations that make up their unique pain signature.

The physical pain generator, such as arthritis initiates the sensation of pain, also known as nociception.

Psychological treatment targets include fear avoidance beliefs that manifest in fear of self-injury related to activity, depression, and low self-efficacy. Low self-efficacy involves a lack of belief in getting better, and poor coping skills.

Catastrophizing is a specific kind of maladaptive pain coping style, characterized by the tendency to magnify the threat value of pain, and to feel helpless in the context of pain. Patients who catastrophize can't inhibit pain-related thoughts.

Fear avoidance beliefs, depression, anxiety, low self-efficacy, and catastrophizing all represent important treatment targets for chronic pain patients. Not treating these results in sub optimal outcomes.

Social factors that intensify the pain experience may include lack of social support, and social isolation. These factors should also be addressed as part of a comprehensive treatment plan for chronic pain.

Pain Behaviors

In 1982, Loeser⁴ originally designed a general model that outlined four dimensions associated with the concept of pain. The dimensions include nociception and pain, suffering, and the emotional responses triggered by pain, or some other aversive event associated with pain, like fear, or depression.

Pain behavior encompasses things people say or do when they're suffering or in pain, such as avoiding activities or exercise for fear of re-injury. Pain behaviors are overt communications of pain, distress, and suffering.

⁴ Loeser, J. Concepts of Pain. In: Stanton-Hicks M, Boas R, editors. Chronic low-back pain. New York: Raven Press; 1982.. p. 145-8.

Mood Screening Questionnaires

Mood disorders often accompany chronic pain conditions. The following represent screening questionnaires to test for depression and anxiety.

Depression

The Patient Health Questionnaire-2 (PHQ-2) Scale

Score the patient's responses by using the following metrics:

0 – not at all

1 – several days

2 – more than half the days

3 – nearly every day

A higher score represents higher levels of depression.

Using the above scoring metric, ask the patient the following to screen for depression:

Over the past two weeks, how often have you been bothered by any of the following problems? Little interest or pleasure in doing things.

Over the past two weeks, how often have you been bothered by any of the following problems? Feeling down, depressed, or hopeless.

Anxiety

The Generalized Anxiety Disorder (GAD-2) Scale

Score the patient's responses by using the following metrics:

0 – not at all

1 – several days

2 – more than half the days

3 – nearly every day

A higher score represents higher levels of anxiety.

Using the above scoring metric, ask the patient the following to screen for anxiety:

Over the past two weeks, how often have you been bothered by any of the following problems? Feeling nervous, anxious, or on the edge.

Over the past two weeks, how often have you been bothered by any of the following problems? Not being able to stop or control worrying.

Stepped Treatment Approach to Chronic Pain

Step 1: Non-Pharmacologic Options

The stepped treatment approach to chronic pain starts with the non-pharmacologic options least likely to cause harmful side effects, such as exercise and manual therapies, weight loss, and assistive devices. Potential accompanying treatments can include cognitive behavioral therapy, meditation, massage, acupuncture, and yoga.

Self-management is also included in non-pharmacologic options. If the use of hot packs, thermal wraps, or ice packs helps relieve a patient's chronic low back pain, encourage their continued use.

TENS units, transcutaneous electrical nerve stimulation, are safe to use, but there's no strong evidence that shows them to be effective for chronic low back pain.

Assistive devices may also be a choice for non-pharmacologic options. For instance, an older adult with kyphosis who uses a walker to reduce the strain on the paraspinal musculature may be satisfied with the assistive device. Or a painful lower extremity that causes altered gait and dysfunction of the spine that contributes to lower back pain may be sufficiently relieved by the use of a cane.

Step 2: Topical Treatments

Step 2 in the stepped treatment approach to chronic pain includes topical treatments. They're safe, but there's no strong evidence for efficacy in treating low back pain. If you prescribe capsaicin, let the patient know they'll feel a burning sensation that should pass in about a week or so.

Patients also need to know to apply the medication several times a day, and to remember to wash their hands thoroughly after application.

Step 3: Local and Minimally Invasive Prescription

Step 3 of the stepped treatment approach for chronic pain includes local and minimally invasive prescription, like local injections. A trigger point injection may help an area of especially excruciating myofascial pain.

Corticosteroid knee or hip injections can be considered for patients with knee or hip arthritis contributing to low back pain.

Step 4: Local and More Invasive Prescription

Step 4 of the stepped treatment approach for chronic pain includes spine injections, like sacroiliac, epidural, or facet joint injections.

Spine injections like sacroiliac, epidural, or facet joint injections are considered safe as long as they're administered by a pain medicine specialist.

Spine injections may provide enough short term pain relief, or analgesia, to encourage the patient's interest in rehabilitation through exercise or physical therapy.

Because of mixed evidence on whether spine injections effectively relieve lower back pain, you should take the time to go through the [2008 Cochrane Review](#) to come to your own conclusions.

Step 5: Systemic Oral Analgesics

Level 1: Acetaminophen/NSAIDS

Among systemic oral analgesics, acetaminophen is considered safe, but it can be toxic for patients with significant alcohol intake, and those with preexisting liver disease. Also, many over the counter medications have acetaminophen in them, so when you take a patient's medication history, be sure to include over the counter products to avoid over-prescribing. The recommended daily maximum dose of acetaminophen is 3,000mg.

Systemic oral analgesics also include NSAIDS. Non-steroidal anti-inflammatory drugs. They shouldn't be used for an extended amount of time because of a number of harmful side effects. Side effects from NSAIDS can include gastrointestinal bleeding, renal insufficiency, beginning or worsening of hypertension and congestive heart failure. Find out more about why these medications need to be used with caution, especially in older adults, by examining the [Beers Criteria](#).

Level 2: Non-acetylated Salicylates

Another form of systemic oral analgesics are non-acetylated salicylates. They can potentially be used for patients who do not respond to acetaminophen, like salsalate, and choline magnesium trisalicylate. These have the added benefit of being less potent prostaglandin inhibitors, which makes them safer to use.

Level 3:-4: Opioids

Opioids are another option within systemic oral analgesics, but they should be used with caution due to a number of harmful side effects. Patients should be aware about the potential harms when using opioids before they start taking them. Patients should also start with less potent doses of opioids, before potentially graduating to a higher dosage.

Duloxetine

Among systemic oral analgesics, Duloxetine has no specific slot. Duloxetine is a serotonin norepinephrine reuptake inhibitor that is approved for use in the treatment of musculoskeletal pain, including chronic low back pain. It most likely works because of the role central sensitization plays in chronic pain patients.

Step 6: Surgery

Step 6 in the stepped treatment approach for chronic pain is surgery. Invasive spinal surgery is the most drastic treatment for chronic low back. Spinal surgery isn't recommended for patients with multiple factors that contribute to their low back pain.

Lumbar Spine Range of Motion

Features that support a clinical diagnosis of lumbar spinal stenosis include:

- no pain when sitting
- pain that may occur with or without paresthesias and/or weakness with prolonged standing or walking
- symptoms are relieved with rest
- symptoms are present in bilateral lower extremities
- upon examination, pain is better with spinal flexion, and worse with spinal extension

Examining Spinal Flexion

Dr. Weiner positions the patient standing perpendicular to the viewer, and asks her to bend from the waist as far forward as she can.

Dr. Weiner conducts the following conversation with the patient as she performs the spinal flexion exam:

“(Dr. Weiner) What I’d like to do is have you face this way and bend as far forward as you can. Okay. Does that cause any discomfort?”

(Patient) No.

Examining Spinal Extension

Dr. Weiner positions the patient standing perpendicular to the viewer and directs the patient to bend backward from the waist as far as she can.

Dr. Weiner conducts the following conversation with the patient as she performs the spinal extension exam:

“(Dr. Weiner) Now, let’s have you bend backward as far as you can. Does that cause you any discomfort?”

(Patient) A little.

(Dr. Weiner) Okay.”

Examining Lateral Side Bending

Dr. Weiner positions the patient facing the viewer. She directs the patient to first run her right hand down her right side as she bends in the same direction from the waist. The same is repeated for the opposite side.

Dr. Weiner conducts the following conversation with the patient as she performs the lateral side bending exam:

“(Dr. Weiner) Face this way again. And I’m going to have you bend side to side. So, first take your right arm and slide it down your right leg and bend as far to the side as you can. Does that cause any discomfort?”

(Patient) No.

(Dr. Weiner) Okay. Now, go ahead and do the same thing on the opposite side. Does that cause any discomfort?”

(Patient) No.

(Dr. Weiner) Okay.”

Examining Rotation

Dr. Weiner seats the patient in a chair, facing the viewer. She directs the patient to either cross her arms across her chest, or to hold her arms up enough so they won't impede her motions. Dr. Weiner then tells the patient to first twist at the waist as far as she can to the right, then to the left.

Dr. Weiner conducts the following conversation with the patient as she performs the rotation exam:

“(Dr. Weiner) Sit in this chair, and I’m going to have you twist from side to side. So you can either put your arms across your chest or just hold them up. Twist to the right as far as you can. Does that cause any discomfort?”

(Patient) A little bit.

(Dr. Weiner) And then now the same thing to the left as far as you can. Does that cause any discomfort?”

(Patient) A little bit.”

Additional Reading

The links below can be accessed for more information related to treating chronic low back pain in older adults⁵:

- [Cochrane Review: efficacy of spinal injections](#)
- [Beers Criteria: medication risk in older adults](#)
- [Pain Medicine in Older Adults: How Should it Differ?](#)

⁵ Note that links point to external sites that may not be accessible via 508 compliance standards.

Testing Center

Practice Pre-Test

Pre-Test Question 1: In the older adult with chronic low back pain, which of the following may NOT represent a weak link rather than a treatment target?

1. MRI-identified central stenosis of the lumbar spine.
2. Radiographic evidence of hip osteoarthritis seen on an AP film of the pelvis.
3. Degenerative facet disease of L2 through L5.
4. A positive clinical interview for depression.

Pre-Test Question 2: Physical examination of a patient with tentative diagnosis of lumbar spinal stenosis may help to confirm, refute, or modify the diagnosis. Which of the following statements is INCORRECT?

1. The patient with symptomatic lumbar spinal stenosis typically has pain at night that is relieved with lying supine.
2. Passive internal rotation and flexion of the hip joints may provoke familiar buttock/leg pain and uncover comorbid hip osteoarthritis.
3. The patient with symptomatic lumbar spinal stenosis typically feels relief with lumbar flexion and sitting, but is provoked by lumbar extension and walking.
4. Palpation may elicit paralumbar tenderness, but leg symptoms may not be reproduced unless the patients is asked to walk.

Pre-Test Question 3:

Read the following case study to answer the question:

You are seeing a seventy-four-year-old woman in your office for the first time. She's had low back pain present for two years.

Pain is present most days of the week, and is localized to the right lower back, does not radiate, and is relieved with rest.

The patient would like to know what can be done to get rid of the pain.

What do you recommend for the seventy-four-year-old Caucasian woman?

1. You prescribe ibuprofen and physical therapy.
2. You explain to the patient that complete pain relief is not possible and that minimal improvement in her function is realistic.
3. You refer her to a pain clinic for a local injection.
4. You explain to the patient that complete pain relief is not possible and that a thirty percent reduction in pain and significant in her function is realistic.

Pre-Test Question 4: Clinical management of chronic low back pain should follow a stepped care approach that begins with which of the following?

1. Referral to a spine surgeon to rule out the need for decompressive surgery.
2. Non-pharmacologic treatments, including manual therapy, weight loss, and exercise.
3. Non-opioid analgesics

4. Diagnostic imaging, such as plain films, MRI, or CT, to determine the extent of spinal degeneration.

Pre-Test Question 5:

Read the following case study to answer the question:

A ninety-two-year-old married woman presents with worsening chronic low back pain and radiating right leg pain that she describes as achy and sickening when she walks more than one block.

She describes her sleep as very poor, as she tosses and turns “worrying that she is going to become disabled because of her pain.”

Her back and leg pain became worse when her sister died three months ago. Around that time, she stopped taking her pain medications (which had been effective and caused only minor constipation, which she treated with prune juice) because she worried about “becoming addicted.”

What should be included in the first step in your treatment plan?

1. Restarting the patient on her regularly scheduled analgesic.
2. Starting the patient on an antidepressant and her regularly scheduled analgesic.
3. Referral to psychology for treatment of catastrophizing and evaluation of depression.
4. Starting the patient on regularly scheduled acetaminophen and an antidepressant.

Scored Test

Scored Test Question 1: Which of these is a realistic treatment expectation for patients with chronic non-cancer pain?

1. At least thirty percent reduction in pain and significant improvement in function.
2. At least thirty percent reduction in pain and restoration of pre-morbid function.
3. At least fifty percent reduction in pain and minimal improvement in function.
4. Complete resolution of pain and significant improvement in function.

Scored Test Question 2:

Read the following case study to answer the question:

A seventy-five-year-old woman presents with low back pain for the past ten years that has gradually increased restriction in her function. She describes her pain as averaging 7 out of 10, or 10 out of 10 twice a month if she “does too much.”

She takes acetaminophen 650mg prior to an activity she knows will exacerbate her pain. She admits to feeling down and not enjoying one pleasurable activities and states, “I know I will feel better once my pain is adequately treated.”

She has seen a physical therapist in the past and says the therapy “didn’t work.”

She denies fever, weight loss, inability to control her bowels/bladder, or lower extremity weakness. Physical examination reveals normal muscle strength, absent ankle jerks bilaterally, and a depressed affect.

What treatment do you recommend for the seventy-five year old woman?

1. Physical therapy from a therapist expert in treating older patients with chronic pain.
2. Salsalate with meals taken on a regular schedule.
3. Regularly scheduled acetaminophen, antidepressant therapy, and physical therapy.
4. Regularly scheduled ibuprofen along with follow-up in four weeks.

Scored Test Question 3: After consulting with a patient with chronic low back pain about their treatment preferences, which of the following does NOT represent the first step in the rational stepped care approach to treatment?

1. Assistive device and physical therapy
2. Regularly scheduled ibuprofen
3. Weight loss

Scored Test Question 4:

Read the following case study to answer the question:

An eighty-three-year-old man with low back pain and bilateral leg pain with ambulation alleviated with rest. He reports increasing difficulty with ambulation and performing activities of daily living.

Lumbar MRI reveals moderate to severe central canal stenosis at L3 to L4. Physical examination is remarkable for normal lower extremity strength and reflexes.

He does not believe that he will be able to regain meaningful function as a result of treatment, and he is afraid of doing any form of exercise because he believes that it will harm him.

The first thing you should do is recommend is consultation with which specialist(s)?

1. A spine surgeon, to educate the patient about risks and benefits of decompressive laminectomy.
2. A health care provider, to treat the patient's low self-efficacy and fear-avoidance beliefs.
3. A physical therapist, to prescribe ultrasound, heat, and massage.

4. A pain medicine physician, for a diagnostic epidural corticosteroid injection.

Scored Test Question 5:

Read the following case study and video description of accompanying physical exam to answer the question:

A seventy-year-old woman presents with low back pain for three years that has gotten progressively worse.

She has evidence of diffuse degenerative disc and facet disease on plain films of the lumbar spine.

Physical examination is notable for a normal neurological examination, including reflex and strength testing.

She walks with a limp and denies leg pain or paresthesias.

The following describes the physical exam video:

The patient stands with her back to the viewer. Her back, buttocks, and legs are exposed by the examining gown. The physician traces down the patient's spine with two fingers, starting from shoulder level. Doing so reveals a slight curvature of the spine.

The physician turns the patient to the side, and sweeps her hand down the patient's back from shoulder level to waist level. This reveals no protrusions extending from the back.

The physician turns the patient so her back faces the viewer one more. Placing her hands above the patient's iliac crest, the physician locates the sacral dimples with her thumbs. Once located, the physician braces the patient with her left arm, and uses her right hand to palpate the area around the sacral dimples. She then palpates the musculature to either side of the spine of the mid-back.

The physician directs the patient to lie down on an examining table. Once lying down on her back, the physician has the patient cross her right knee over her left leg, and then pushes the patient's right knee back toward her right side. The physician then repeats this same test with the patient's left knee.

The physical exam described above can ascertain the presence of each of the following treatment targets EXCEPT which of the following?

1. Leg length discrepancy
2. Kyphosis
3. Scoliosis
4. Hip Osteoarthritis
5. Sacroiliac joint pain

Answer Key

In this section, you will find the answers to questions posed during all parts of the module, including the Case Study, Practice Pre-Test, and Scored Test portions.

You will find each answer in the same order in which it was presented in the corresponding question.

Answers to Case Study Questions:

Question: You need to know more about Edna's pain. How should you have her rate it?

1. Overall, on a scale of 1 to 10, with 10 being the worst pain you've ever felt. *(Incorrect)*
2. On a scale of 1 to 10, how bad pain is at its worst, as well as its best. *(Correct)*
3. On a scale of 1 to 10, how bad is pain during three specific activities you used to enjoy? *(Correct)*

Jump back to rating pain question in Case Study section.

Question: A patient's "pain signature is defined by limitations set by pain during specific activities. Pain might limit which of the following for Edna?

1. Housework *(Correct)*
2. Spending time with friends *(Correct)*
3. Shopping *(Correct)*

Jump back to pain signature question in Case Study section.

Question: Edna's chronic pain isn't constant pain all the time. If it were, it could indicate which of the following?

1. Cancer *(Correct)*
2. Somatization disorder *(Correct)*
3. Central Sensitization *(Correct)*
4. Really bad back pain *(Incorrect)*

[Jump back to constant pain question in Case Study section.](#)

Question: Edna doesn't complain of night pain, but many older adults do. If a patient says they wake up to night pain, what might be the cause?

1. Older adults often have fragmented sleep. *(Correct)*
2. Something other than pain wakes them up, then they notice it. *(Correct)*
3. They're sleeping in a certain position that aggravates a chronic pain condition. *(Correct)*

[Jump back to night pain question in Case Study section in Case Study section.](#)

Question: How would you diagnose Edna?

1. Hip osteoarthritis *(Correct)*
2. Sacroiliac pain *(Incorrect)*
3. Kyphosis *(Incorrect)*
4. Myofascial pain of the piriformis *(Incorrect)*

[Jump back to diagnosis question in Case Study section in Case Study section.](#)

Question: What options would you offer Edna for treatment?

1. Physical therapy (*Correct*)
2. Medication (*Correct*)
3. Anti-inflammatory shot (*Correct*)
4. An option not listed (*Incorrect*)

[Jump back to treatment options question in Case Study section.](#)

Question: Edna told you her treatment preferences. Do you think you should encourage her to try anything specific?

1. Medication (*Incorrect*)
2. Anti-inflammatory shot (*Incorrect*)
3. Physical therapy (*Correct*)

[Jump back to encourage treatment question in Case Study section.](#)

Question: Which of the following features in Edna's case support a diagnosis of lumbar spinal stenosis?

1. No pain when sitting (*Correct*)
2. Antalgic gait (*Incorrect*)
3. One painful leg (*Incorrect*)
4. Pain worse when walking (*Correct*)

[Jump back to signs of stenosis question in Case Study section.](#)

Question: True or False? If Edna's MRI showed spinal stenosis, it should be treated along with her hip osteoarthritis.

1. True (*Incorrect*)
2. False (*Correct*)

[Jump back to stenosis question in Case Study section.](#)

Question: Edna said physical therapy isn't helping with her pain. You should suggest which of the following?

1. Continue with physical therapy (*Correct*)
2. Discontinue physical therapy (*Incorrect*)

[Jump back to future of physical therapy question in Case Study section.](#)

Question: Edna wants medication to relieve pain as she attempts to improve function through physical therapy. You recommend which of the following?

1. Acetaminophen, as needed (*Incorrect*)
2. Regular schedule of acetaminophen (*Correct*)
3. Ibuprofen, as needed (*Incorrect*)
4. Regular schedule of ibuprofen (*Incorrect*)

[Jump back to pain medicine recommendation question in Case Study section.](#)

Question: Maintaining a constant presence of analgesic (pain relieving) medication can help prevent pain crises. However, which over the counter medication should you avoid prescribing to older adults?

1. Ibuprofen *(Correct)*
2. Aspirin greater than 325 mg/d *(Correct)*
3. Naproxen *(Correct)*

[*Jump back to regular schedule question in Case Study section.*](#)

Question: Physical therapy is part of Edna's treatment plan. As a physical therapist, you should be concerned if which of the following occurs?

1. Edna doesn't respond to treatment as quickly as similar patients. *(Correct)*
2. Edna cancels a lot of appointments. *(Correct)*
3. Edna doesn't adhere to the home exercise program. *(Correct)*
4. None of the options listed. *(Incorrect)*

[*Jump back to physical therapy concerns question in Case Study section.*](#)

Question: Additionally, as Edna's physical therapist, you should be concerned if which of the following occurs?

1. Edna shows no emotion when you try to cheer her up, talk to, or motivate her. *(Correct)*
2. Edna asks, "Why bother working hard? I'll probably never get better." *(Correct)*
3. None of the options listed. *(Incorrect)*

[Jump back to more physical therapy concerns question in Case Study section.](#)

Question: True or false? Physical therapy outcomes can be affected by mood disorders?

1. True *(Correct)*
2. False *(Incorrect)*

[Jump back to physical therapy outcomes question in Case Study section.](#)

Question: As the physical therapist, what should you do about your concerns about Edna?

1. Give her easier exercises. *(Incorrect)*
2. Tell her primary care physician. *(Correct)*
3. Increase the length of time for her appointments. *(Incorrect)*

[Jump back to what to do about physical therapy concerns question in Case Study section.](#)

Question: During Edna's next primary care appointment, how can you determine if she suffers from a mood disorder?

1. Ask screening questions. *(Correct)*
2. Because the physical therapist told you. *(Incorrect)*
3. She looks really down. *(Incorrect)*

[Jump back to determine mood question in Case Study section.](#)

Question: Yes or no? Is Edna depressed, based on her answers to the questions you asked?

1. Yes (*Correct*)
2. No (*Incorrect*)

[Jump back to is Edna depressed question in Case Study section.](#)

Question: Yes or no? Does Edna exhibit anxiety through fear avoidance behavior, based on her answers to the questions you asked?

1. Yes (*Correct*)
2. No (*Incorrect*)

[Jump back to anxiety question in Case Study section.](#)

Question: You now know about Edna's mood, health history, and physical exam results. Which of the following pain behaviors does Edna display?

1. Suffering (*Correct*)
2. Pain (*Correct*)
3. Emotional response to pain (*Correct*)

[Jump back to pain behavior question in Case Study section.](#)

Question: Edna said she felt alone. Remember, she just moved to town, and she lives by herself. Do you have any recommendations for her?

1. Talk to other patients at physical therapy sessions. (*Incorrect*)
2. Do more shopping. (*Incorrect*)
3. Look up area senior centers. (*Correct*)

[Jump back to social question in Case Study section.](#)

Answers to Practice Pre-Test Questions

Pre-Test Question 1: In the older adult with chronic low back pain, which of the following may NOT represent a weak link rather than a treatment target?

1. MRI-identified central stenosis of the lumbar spine. *(Incorrect)*
2. Radiographic evidence of hip osteoarthritis seen on an AP film of the pelvis. *(Incorrect)*
3. Degenerative facet disease of L2 through L5. *(Incorrect)*
4. A positive clinical interview for depression. *(Correct)*

[Jump back to question 1 in Practice Pre-Test section.](#)

Pre-Test Question 1 Explanation:

Each of the imaging findings listed as response options are often asymptomatic in older adults and are not in and of themselves treatment targets.

Pre-Test Question 2: Physical examination of a patient with tentative diagnosis of lumbar spinal stenosis may help to confirm, refute, or modify the diagnosis. Which of the following statements is INCORRECT?

1. The patient with symptomatic lumbar spinal stenosis typically has pain at night that is relieved with lying supine. *(Correct)*
2. Passive internal rotation and flexion of the hip joints may provoke familiar buttock/leg pain and uncover comorbid hip osteoarthritis. *(Incorrect)*

3. The patient with symptomatic lumbar spinal stenosis typically feels relief with lumbar flexion and sitting, but is provoked by lumbar extension and walking. *(Incorrect)*
4. Palpation may elicit paralumbar tenderness, but leg symptoms may not be reproduced unless the patients is asked to walk. *(Incorrect)*

[Jump back to question 2 in Practice Pre-Test section.](#)

Pre-Test Question 2 Explanation:

Patients with lumbar spinal stenosis typically have pain with prolonged standing or walking that is relieved with sitting or lumbar flexion.

Comorbid hip osteoarthritis is not uncommon in older adults with lumbar spinal stenosis.

Paralumbar tenderness is also not uncommon in older adults, but it does not precipitate symptoms of lumbar spinal stenosis.

Pre-Test Question 3:

Read the following case study to answer the question:

You are seeing a seventy-four-year-old woman in your office for the first time. She's had low back pain present for two years.

Pain is present most days of the week, and is localized to the right lower back, does not radiate, and is relieved with rest.

The patient would like to know what can be done to get rid of the pain.

What do you recommend for the seventy-four-year-old Caucasian woman?

1. You prescribe ibuprofen and physical therapy. *(Incorrect)*

2. You explain to the patient that complete pain relief is not possible and that minimal improvement in her function is realistic. *(Incorrect)*
3. You refer her to a pain clinic for a local injection. *(Incorrect)*
4. You explain to the patient that complete pain relief is not possible and that a thirty percent reduction in pain and significant in her function is realistic. *(Correct)*

[Jump back to question 3 in practice pre-test section.](#)

Pre-Test Question 3 Explanation:

Complete pain relief is not realistic for patients with chronic non-cancer pain from any cause (e.g., arthritis, neuropathy, fibromyalgia, low back pain).

Ibuprofen is on the Beers list of inappropriate medications for older adults because of the multiple potential adverse effects.

Pre-Test Question 4: Clinical management of chronic low back pain should follow a stepped care approach that begins with which of the following?

1. Referral to a spine surgeon to rule out the need for decompressive surgery. *(Incorrect)*
2. Non-pharmacologic treatments, including manual therapy, weight loss, and exercise. *(Correct)*
3. Non-opioid analgesics *(Incorrect)*
4. Diagnostic imaging, such as plain films, MRI, or CT, to determine the extent of spinal degeneration. *(Correct)*

[Jump back to question 4 in Practice Pre-Test section.](#)

Pre-Test Question 4 Explanation:

The foundation of treating chronic low back pain includes self-management and non-pharmacologic treatments such as manual therapy, weight loss, and exercise.

Referral to a spine surgeon is indicated only if there is deteriorating neurological status or refractory pain despite conservative management that involves addressing all contributors to pain and disability.

Pre-Test Question 5:

Read the following case study to answer the question:

A ninety-two-year-old married woman presents with worsening chronic low back pain and radiating right leg pain that she describes as achy and sickening when she walks more than one block.

She describes her sleep as very poor, as she tosses and turns “worrying that she is going to become disabled because of her pain.”

Her back and leg pain became worse when her sister died three months ago. Around that time, she stopped taking her pain medications (which had been effective and caused only minor constipation, which she treated with prune juice) because she worried about “becoming addicted.”

What should be included in the first step in your treatment plan?

1. Restarting the patient on her regularly scheduled analgesic.
(Incorrect)
2. Starting the patient on an antidepressant and her regularly scheduled analgesic. *(Incorrect)*
3. Referral to psychology for treatment of catastrophizing and evaluation of depression. *(Correct)*

4. Starting the patient on regularly scheduled acetaminophen and an antidepressant. *(Incorrect)*

[Jump back to question 5 in Practice Pre-Test section.](#)

Pre-Test Question 5 Explanation:

It is critical to treat all contributors to pain and disability, not just to treat the pain itself.

In this patient's case, she may be grieving over her sister's loss; she should be evaluated for depression, but there is no indication to immediately start an antidepressant.

Unless treated by referral to psychology for catastrophizing and evaluation of depression, her poor coping skills (*i.e., catastrophizing*) will negatively impact her pain treatment outcomes.

Answers to Scored Test Questions

Scored Test Question 1: Which of these is a realistic treatment expectation for patients with chronic non-cancer pain?

1. At least thirty percent reduction in pain and significant improvement in function. *(Correct)*
2. At least thirty percent reduction in pain and restoration of pre-morbid function. *(Incorrect)*
3. At least fifty percent reduction in pain and minimal improvement in function. *(Incorrect)*
4. Complete resolution of pain and significant improvement in function. *(Incorrect)*

[Jump back to question 1 in Scored Test section.](#)

Scored Test Question 1 Explanation:

Across multiple non-cancer pain conditions, it has been demonstrated that thirty percent reduction in pain, or two points less on a 0 to 10 scale, is clinically significant.

Patients with chronic non-cancer pain should be educated so that they learn to function significantly better despite the persistence of some pain.

Scored Test Question 2:

Read the following case study to answer the question:

A seventy-five-year-old woman presents with low back pain for the past ten years that has gradually increased restriction in her function. She describes her pain as averaging 7 out of 10, or 10 out of 10 twice a month if she “does too much.”

She takes acetaminophen 650mg prior to an activity she knows will exacerbate her pain. She admits to feeling down and not enjoying one pleasurable activities and states, “I know I will feel better once my pain is adequately treated.”

She has seen a physical therapist in the past and says the therapy “didn’t work.”

She denies fever, weight loss, inability to control her bowels/bladder, or lower extremity weakness. Physical examination reveals normal muscle strength, absent ankle jerks bilaterally, and a depressed affect.

What treatment do you recommend for the seventy-five year old woman?

1. Physical therapy from a therapist expert in treating older patients with chronic pain. *(Incorrect)*

2. Salsalate with meals taken on a regular schedule. *(Incorrect)*
3. Regularly scheduled acetaminophen, antidepressant therapy, and physical therapy. *(Correct)*
4. Regularly scheduled ibuprofen along with follow-up in four weeks. *(Incorrect)*

[Jump back to question 2 in Scored Test section.](#)

Scored Test Question 2 Explanation:

When patients have comorbid pain and depression, both must be treated to optimize therapeutic response.

Scored Test Question 3: After consulting with a patient with chronic low back pain about their treatment preferences, which of the following does NOT represent the first step in the rational stepped care approach to treatment?

1. Assistive device and physical therapy *(Incorrect)*
2. Regularly scheduled ibuprofen *(Correct)*
3. Weight loss *(Incorrect)*

[Jump back to question 3 in Scored Test section.](#)

Scored Test Question 3 Explanation:

Ibuprofen is on the Beers Criteria list of medications that should be avoided in older adults because of the multiple potential adverse reactions.

- Adverse reactions include:
- Gastrointestinal bleeding
- Renal insufficiency

- Precipitation of congestive heart failure
- Exacerbation of hypertension

Scored Test Question 4:

Read the following case study to answer the question:

An eighty-three-year-old man with low back pain and bilateral leg pain with ambulation alleviated with rest. He reports increasing difficulty with ambulation and performing activities of daily living.

Lumbar MRI reveals moderate to severe central canal stenosis at L3 to L4. Physical examination is remarkable for normal lower extremity strength and reflexes.

He does not believe that he will be able to regain meaningful function as a result of treatment, and he is afraid of doing any form of exercise because he believes that it will harm him.

The first thing you should do is recommend consultation with which specialist(s)?

1. A spine surgeon, to educate the patient about risks and benefits of decompressive laminectomy. (Incorrect)
2. A health care provider, to treat the patient's low self-efficacy and fear-avoidance beliefs. (Correct)
3. A physical therapist, to prescribe ultrasound, heat, and massage. (Incorrect)
4. A pain medicine physician, for a diagnostic epidural corticosteroid injection. (Incorrect)

[*Jump back to question 4 in Scored Test section.*](#)

Scored Test Question 4 Explanation:

Both low self-efficacy and fear-avoidance beliefs are important psychological constructs that interfere with response to pain management.

Decompressive laminectomy would be indicated if there were deteriorating neurological status of refractory pain despite conservative management that involves addressing all contributors to pain and disability.

There is no evidence that ultrasound, heat, and massage are effective to the treatment of neurogenic claudication (i.e., symptoms associated with lumbar spinal stenosis).

Epidural corticosteroid injections are not indicated in the diagnosis of lumbar spinal stenosis.

Scored Test Question 5:

Read the following case study and video description of accompanying physical exam to answer the question:

A seventy-year-old woman presents with low back pain for three years that has gotten progressively worse.

She has evidence of diffuse degenerative disc and facet disease on plain films of the lumbar spine.

Physical examination is notable for a normal neurological examination, including reflex and strength testing.

She walks with a limp and denies leg pain or paresthesias.

The following describes the physical exam video:

The patient stands with her back to the viewer. Her back, buttocks, and legs are exposed by the examining gown. The physician traces down the patient's spine with two fingers, starting from shoulder level. Doing so reveals a slight curvature of the spine.

The physician turns the patient to the side, and sweeps her hand down the patient's back from shoulder level to waist level. This reveals no protrusions extending from the back.

The physician turns the patient so her back faces the viewer one more. Placing her hands above the patient's iliac crest, the physician locates the sacral dimples with her thumbs. Once located, the physician braces the patient with her left arm, and uses her right hand to palpate the area around the sacral dimples. She then palpates the musculature to either side of the spine of the mid-back.

The physician directs the patient to lie down on an examining table. Once lying down on her back, the physician has the patient cross her right knee over her left leg, and then pushes the patient's right knee back toward her right side. The physician then repeats this same test with the patient's left knee.

The physical exam described above can ascertain the presence of each of the following treatment targets EXCEPT which of the following?

1. Leg length discrepancy (Incorrect)
2. Kyphosis (Incorrect)
3. Scoliosis (Incorrect)
4. Hip Osteoarthritis (Correct)
5. Sacroiliac joint pain (Incorrect)

[Jump back to question 5 in Scored Test section.](#)

Scored Test Question 5 Explanation:

Hip osteoarthritis cannot be ascertained from the physical examination just shown because internal rotation of the hip was not performed.

This is an essential part of the clinical evaluation of hip osteoarthritis.

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