

NIH Pain Consortium

Centers of Excellence in Pain Education



A Veteran with Phantom Limb Pain

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Introduction

This module covers a veteran with phantom limb pain named Peter James.

Learning Objectives

After completing this module, you should be able to:

- Describe the cardinal features of Phantom Limb Pain.
- Explain the pathophysiology of Post-Traumatic Stress Disorder
- Describe pharmacologic and non-pharmacologic approaches to managing Phantom Limb pain and Post-Traumatic Stress Disorder.
- Explain the relationship between anxiety and insomnia in the context of Post-Traumatic Stress Disorder.

Categories

The module features eight main categories:

- Interview Peter James
- Peter James' physical exam
- Pain assessment
- Psychology/Counseling
- Pharmacotherapy
- Non-pharmacologic interventions
- Outcomes
- Additional Learning Resources

Introduction to Peter James

The following provides a description of the introduction to the patient, Peter James:

The video shows a head and shoulders shot of Peter James as he faces the camera and speaks directly to the viewer.

“Hi. I’m Peter James. I’m 49 years old. Used to be a stone mason. Was in the reserves and got called up 10 years ago. During my second tour in Afghanistan, our convoy hit an IED. Destroyed my left leg. Nothing could be done to put it back together again, so amputation was required. Above knee amputation; transfemoral, if you prefer that. Spent a couple years at Walter Reed. With the surgeries and rehab, I couldn’t go back to being a stonemason; I have to do something else. I now have an opportunity to help manage my in-laws farm. I need to support my wife and kids. That has not been very successful over the last few years. The opioids that I’m on are preventing me from being productive, functional, during the day. I suffer from insomnia, so that makes that worse. I have significant phantom limb pain, and suffer from PTSD. Over the years, I’ve been prescribed many different narcotics and it’s to the point where we need to get rid of them, or at least some of them. I mean, let’s get back to some sort of normal life. I’m really looking forward to this opportunity to manage the farm. And it allowed me to move back to the area, so I’m closer to the VA than I was. And I’m looking forward to these opportunities to work with people that are at the forefront of dealing with phantom pains, prostheses, insomnia, PTSD. I think there’s a good team here that can really help.”

Peter James' Treatment Goals

Why should Peter James establish treatment goals? Select the correct answer below and then read Peter James' treatment goals. There may be more than one correct answer.

1. [Establishing treatment goals fosters a collaborative relationship with care providers.](#)
2. [Establishing treatment goals empowers the patient to help prioritize the treatment plan.](#)
3. [Establishing treatment goals offers the opportunity for care providers to address any unrealistic expectations.](#)
4. [Establishing treatment goals clarifies the framework for addressing care.](#)

Peter James' treatment goals include:

- Reducing his pain
- Reduce his dependence on opioids
- Improve his sleep
- Function better overall

Interview Peter James

The following interview subjects cover different aspects of Peter James' medical history. Read through the descriptions of the videos of each aspect to learn more.

Effectiveness of current medications

The following provides a description of the video of Peter James describing the effectiveness of his current medication:

Dr. Kent and Peter James sit facing each other in Dr. Kent's examining room. Peter James faces the camera. The viewer can see all of Peter James while seated, including his prosthetic left leg. Peter James answers the question of the effectiveness of his current medication treatment with the following:

"The opioids, they help with muscle pains, you know, my lower back and hip, or my other knee that's trying to support me. But, you know, so, it binds me up. You know, as soon as I start on an opioid, I need the Colace to get through. But it doesn't seem to touch the phantom pain. It's not real, right?"

Most Effective Phantom Limb Pain treatment

The following provides a description of the video of Peter James describing the most effective phantom limb pain treatment for him:

Dr. Kent and Peter James sit facing each other in Dr. Kent's examining room. Peter James faces the camera. The viewer can see all of Peter James while seated, including his prosthetic left leg. Peter James answers the question of the most effective phantom limb pain treatment with the following:

"I slap it around, you know, rub the stump, hit the bottom to remind my brain that it ends here, and you know, there's nothing down there. It takes a lot of convincing sometimes."

Where do you feel the pain

The following provides a description of the video of Peter James describing where he feels his pain:

Dr. Kent and Peter James sit facing each other in Dr. Kent's examining room. Peter James faces the camera. The viewer can see all of Peter James while seated, including his prosthetic left leg. Peter James answers the question of where he feels pain, *"Mostly around the ankle and foot, but it can be anywhere below the knee."*

Dr. Kent says, *"So it is a true phantom. It's where you used to have the limb."*

Peter James responds, *"Right."*

How does the pain affect you

The following provides a description of the video of Peter James describing how his pain affects him:

Dr. Kent and Peter James sit facing each other in Dr. Kent's examining room. Peter James faces the camera. The viewer can see all of Peter James while seated, including his prosthetic left leg. Peter James answers the question of how the pain affects him with the following:

"It can be very debilitating at times. I know it's not there. But I can't think about anything else."

Explain your overall pain experience

The following provides a description of the video of Peter James describing his overall pain experience:

Dr. Kent and Peter James sit facing each other in Dr. Kent's examining room. Peter James faces the camera. The viewer can see all of Peter James while seated, including his prosthetic left leg. Peter James explains his overall pain experience with the following:

“Well, it comes and goes; the phantom pains. It seems to go along with weather changes and activity levels. You know, if I’ve really been very active one day, I’ll get more sensations and pains that night when I’m trying to fall asleep.”

Any concerns about prosthetic fit

The following provides a description of the video of Peter James describing his concerns with how his prosthetic leg fits the residual limb:

Dr. Kent faces Peter James, both sitting in chairs. Dr. Kent asks Peter James if he can examine the residual limb, and Peter James acquiesces. Peter James then takes off his prosthetic leg, which replaces his lower left leg, the left knee, and a small portion of his left leg just above the left knee. As he removes the prosthetic limb, Dr. Kent asks if Peter James has any issues with the prosthesis, and Peter James replies in the negative. He tells Dr. Kent that this prosthetic is the most comfortable he’s had so far, and describes the different built-in systems, including a vacuum system and Boa system. Peter James demonstrates the Boa system by rotating a knob at the top of the prosthetic to show how he can tighten the socket around his residual limb, and then clicks the button to show its release. Dr. Kent inquires whether the prosthetic feels comfortable, and Peter James responds by saying the prosthetic gives him a greater connection between his mind and the point of contact of his residual limb with the prosthetic.

The following audio accompanies the video described above:

Dr. Kent asks, *“Would you be okay if I examined the limb?”*

Peter James says, *“Sure.”*

Dr. Kent then asks, *“Have you had any concerns about where the prosthetic meets your residual limb?”*

Peter James responds, *“No. No, I mean for the most part I’ve had very comfortable sockets. This is the first one that I’ve had with the vacuum*

system. And it also has a Boa system. This knob here, I can tighten it up, release it.”

Dr. Kent inquires, *“So that’s felt comfortable on your limb?”*

Peter James says, *“That’s what really has given me that connection between my head and the knee. And it works great.”*

Peter James' Physical Examination

The following descriptions cover aspects of Peter James' physical examination.

Walking on prosthesis

The following provides a description of the video of Peter James demonstrating walking with his prosthetic left leg:

The video begins by showing Peter James standing with his back against the wall in a doctor's examining room. Dr. Kent's requests, "*All right, so let me have you just walk towards me a couple steps.*"

Peter James walks a few steps on his prosthetic leg toward where Dr. Kent stands off screen, at an angle toward the viewer. Peter James walks without losing his balance, but it's very evident he walks on a prosthesis by the way he rests his weight on the prosthetic, locking the knee with each step on his residual left leg so he can swing the rest of his body forward to continue walking.

Dr. Kent says, "*That's pretty good. Let me have you turn around here, walk back toward the wall.*" Peter James does so without undue difficulty, but with noticeable use of the prosthetic.

Dr. Kent appears satisfied with Peter James' use of his prosthetic left leg when walking and says, "*It's quite good.*"

Inspection for open wounds

The following provides a description of the video of Dr. Kent examining Peter James residual left limb for any open wounds:

Dr. Kent sits facing Peter James seated in a chair. Peter James has removed his prosthetic left leg, revealing the residual limb, amputated just above the knee. Peter James has leaned the prosthetic against the wall next to him, within easy reach. As Dr. Kent leans forward in his chair to visually inspect

the residual limb, Peter James moves it up and down to give Dr. Kent better opportunity to visually examine the leg in its entirety. Dr. Kent finds no areas of concern upon visual examination of the residual left leg.

The following audio accompanies the video described above:

Dr. Kent says, *“So you don’t have any open wounds or any areas of concern there.”*

Peter James replies, *“I hope not.”*

Dr. Kent responds with, *“That’s great.”*

Light skin touch

The following provides a description of the video of Dr. Kent examining Peter James residual left limb with a light skin touch:

Dr. Kent sits facing Peter James seated in a chair. Peter James has removed his prosthetic left leg, revealing the residual limb, amputated just above the knee. Peter James has leaned the prosthetic against the wall next to him, within easy reach.

The shot focuses on Peter James’ waist, hip, and upper legs. Dr. Kent uses the back of his right hand to lightly brush the skin around the bottom of the end of Peter James’ residual left leg.

Dr. Kent then lightly strokes the upper thigh of the residual left limb with the palm of his right hand.

Continuing the examination of light touch, Dr. Kent alternately brushes either the back of his right hand, or the palm of his right hand around the remaining portion of Peter James’ residual left leg, inquiring whether the touch feels normal to Peter James. Peter James replies that the touch feels normal and that he doesn’t deal with the skin irritations or breakdowns some amputees experience with their prosthetic sockets.

The shot refocuses from the lower half of Peter James, showing his waist, hip, and leg, to his head and torso as he tells Dr. Kent that the fact he has

normal feeling in his residual limb is probably helped by the fact he's not diabetic.

The following audio accompanies the video described above:

Dr. Kent asks, *"So for me to just brush the skin, does that feel normal to you? Does it feel painful or unusual in any way?"*

Peter James says, *"Very normal."*

Dr. Kent reaffirms, *"Very normal?"*

Peter James responds, *"I guess I've been fortunate that I haven't had the skin irritations or breakdowns that many amputees have in the socket all day."*

Dr. Kent says, *"I'm glad to hear that. That can come with the territory."*

Peter James replies, *"Right. And I'm not diabetic, so I think that helps too."*

Dr. Kent confirms, *"That helps with feeling."*

Lower back pain or tenderness

The following provides a description of the video of Dr. Kent examining Peter James for evidence of lower back pain or tenderness:

The video shows Dr. Kent and Peter James standing together in Dr. Kent's examining room, facing each other. Dr. Kent asks Peter James to turn around so he can examine any sites of tenderness in Peter James' back.

Peter James turns around and the video zooms in on Peter James' back, showing Dr. Kent first palpating the upper part of the lower back, asking Peter James if he feels any tenderness as he does so. Peter James answers negatively.

Dr. Kent then palpates the lower portion of the lower back, and asks again if Peter James feels any tenderness. Peter James replies that he does, and that one side feels more tender than the other. Dr. Kent tells Peter James

the area in question is his sacroiliac joint, and that it's a common area to be tender for an amputee with a missing lower limb.

The following audio accompanies the video described above:

Dr. Kent tells Peter James, *"Turn around here. I'm going to push on a few areas. Let me know if anything is tender. Any tenderness up here?"*

Peter James responds, *"No."*

Dr. Kent says, *"Great. How about down here?"*

Peter James replies, *"Yeah, that's more tender there."*

Dr. Kent says, *"All right. How about on this side?"*

Peter James agrees, *"Yeah, that's probably about the worst."*

Dr. Kent asks, *"Is that right down there?"*

Peter James says, *"Yeah."*

Dr. Kent explains, *"That's your sacroiliac joint down there. That would be a common site of tenderness in this situation."*

Hip range of motion

The following provides a description of the video of Dr. Kent examining Peter James' hip range of motion:

The video shows Peter James' waist and knees as he sits in a chair with his prosthetic left leg removed. Dr. Kent uses his hands to guide Peter James' residual limb up and down while Peter James stays seated.

The following audio accompanies the video described above:

Dr. Kent says, "It looks like your hip moves very well. Can you show that to me?"

Peter James grasps his residual limb with his left hand and directs it upwards toward his chest. He says, *“Yeah. Very well this way,”* and then moves the residual limb back toward the floor, where it lines up with the rest of his body, as it would look if he were to stand up. As Peter James demonstrates the more limited downward range of movement in his hip, he says, *“But this is where I have a bit of a contracture, I think they call it.”*

Dr. Kent replies, *“That’s correct.”*

Peter James says, *“Right. And I don’t have the full motion, but it’s not bad.”*

Dr. Kent states, *“It looks like you’re getting pretty good extension.”*

Peter James responds, *“Yeah.”*

Dr. Kent uses his hands to move Peter James’ residual limb up and down slightly once more and asks, *“And for me to just move the limb. That does not cause you pain?”*

Peter James says, *“No.”*

Spinal range of motion

The following provides a description of the video of Dr. Kent examining Peter James’ spinal range of motion:

Dr. Kent and Peter James stand in an examining room. Peter James stands facing the camera, with his prosthetic left leg attached to his residual limb. Dr. Kent stand facing Peter James.

Dr. Kent tells Peter James, *“Let me have you reach down to the floor.”*

Peter James does so, bending at the waist to reach his right hand to the floor. As he bends, he uses his left hand to brace himself on the front of his left thigh.

Dr. Kent says, *“Oh, that’s intact. That’s great,”* as he watches Peter James straighten up once more. *“Can you go backward for me?”*

Peter James bends backwards at the waist about fifteen degrees as Dr. Kent watches his back during the motion. Dr. Kent remarks, "*That's quite good,*" at the degree to which Peter James manages to bend his torso backward from the waist.

Peter James' Pain Assessment

The following descriptions cover aspects of Peter James' pain assessment.

Verbally rate current pain

The video shows Peter James seated facing the camera, across from the nurse practitioner. His chair sits at an angle to the nurse practitioner's seat, which faces slightly away from the viewer, toward Peter James.

In response to the question of rating his pain, Peter James replies, *"But if I said a ten, you wouldn't understand my 'ten,' you know?"*

The nurse practitioner says, *"No, I wouldn't. But I would understand that it's severe."*

Peter James says, *"Right. Today I'm having a little bit better of a day, so I guess I'm probably right about a three right now."*

Can you predict your pain?

The video shows Peter James seated facing the camera. His chair sits at an angle to the nurse practitioner's seat, which faces slightly away from the viewer, toward Peter James.

In response to the question of whether Peter James can predict his pain, he says, *"I don't know if I can predict it, but I can rationalize it. Saying, 'Oh, you know, I did too much.'"*

The nurse practitioner interjects with, *"The weather's bad."*

Peter James nods and says, *"The weather's changing. I did too much. Things like that."*

How often do you feel the pain?

The video shows Peter James seated facing the camera. His chair sits at an angle to the nurse practitioner's seat, which faces slightly away from the viewer, toward Peter James.

In response to how often Peter James feels the pain, he replies, *"On and off. Yeah, I mean, like I said, sometimes I'll get one and I'm done for the day. Other times it, you know, every hour or something. Uh, it has a lot to do with my activity level, weather changes."*

Peter James' Psychological Evaluation

The following descriptions cover aspects of Peter James' psychological evaluation.

Post-Traumatic Stress Disorder

Overall Post-Traumatic Stress Disorder symptoms

According to Peter James, *"I think about my situation and I get depressed. But at the same time I feel like I need to do something, like there's a something I forgot to do, or I have to do something and I can't remember what it is. Anxiety creeps in and I can get panic attacks. Then I sometimes hide from everyone in the restroom."*

Post-Traumatic Stress Disorder symptoms during the day

According to Peter James, *"I don't startle as easily because of certain noises during the day any more. I do still get anxiety that can be triggered by many things, like smells. I don't watch the news, and I have to be careful about what movies I watch to avoid triggering bad memories."*

Insomnia/Anxiety

How long does it take to fall asleep?

According to Peter James, *"I frequently have trouble falling asleep. It can take an hour or two sometimes. If I do fall asleep quickly, the dream sequence starts but turns into nightmares, and I'm wide awake again."*

How much sleep do you get per night?

According to Peter James, *"I only get between two and six hours of sleep every night."*

Any nightmares?

According to Peter James, *“I have more than nightmares; I have night terrors. I’ll wake up in a cold sweat after I have one. They happen several times a week, so I deal with it frequently.”*

Any other issues when you try to sleep?

According to Peter James, *“My mind races at night. It might be about anything I need to do for the next day. Sometimes I can’t stop thinking about things I may or may not have done in the last couple days. Remembering to pay bills is difficult. I worry about forgetting to pay a bill and I get anxious when I’m trying to sleep.”*

Peter James' Current Medications

Peter James takes the following medications. To learn more about each medication, navigate to additional material by following the hyperlinked drug name.

Trazadone

Peter James takes Trazadone 100mg qhs for depression and anxiety.

Zolpidem

Peter James takes Zolpidem 10mg PRN for insomnia.

Oxycodone

Peter James takes Oxycodone IR 30mg q3h PRN for pain.

Alprazolam

Peter James takes Alprazolam q8h PRN for anxiety.

Fluoxetine

Peter James takes Fluoxetine 40mg/day for depression.

Peter James' Substance Use

Substance Use Resources

Substance Use Disorder Diagnostic Tools

[Click here](#) to access substance use disorder (SUD) diagnostic tools.

Potentially fatal interactions

Learn why the concurrent use of opioids, benzodiazepines and/or alcohol may be potentially fatal by clicking this link:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4057040/>

Aspects of Peter James' Substance Use

The following descriptions detail Peter James' current substance use.

How many times per day do you take Oxycodone?

The video shows Peter James seated facing the camera, across from the nurse practitioner. His chair sits at an angle to the nurse practitioner's seat, which faces slightly away from the viewer, toward Peter James. The shot shows only the upper body of both Peter James and the nurse practitioner.

In response to how often Peter James takes Oxycodone for pain, he says, "*You know, it's not max every day. But, uh, close to it.*"

Have you taken Oxycodone for a while?

The video shows Peter James seated facing the camera, across from the nurse practitioner. His chair sits at an angle to the nurse practitioner's seat, which faces slightly away from the viewer, toward Peter James. The shot shows only the upper body of both Peter James and the nurse practitioner.

In response to whether he's taken Oxycodone for a while, Peter James says, "*Yeah and I know it, it messes up my system, you know. I mean, uh.*"

“Constipation,” suggests the nurse practitioner.

“Constipation is the worst,” agrees Peter James. *“Yeah, Colace helps.”*

Are you open to non-addictive pain medication?

The video shows Peter James seated facing the camera, across from the Dr. Kent. His chair sits at an angle to the physician’s seat, which faces slightly away from the viewer, toward Peter James. The shot fully shows both men, with Peter James’ prosthetic leg fully visible.

In response to whether he’s open to non-addictive pain medication, Peter James replies, *“Oh yeah. I mean, you know, let’s get as natural as we can.”*

“Because there are a lot of medicines that help this particular type of pain that don’t carry a big addiction burden. And so that might be an opportunity for you,” Dr. Kent says.

“Okay,” Peter James replies. *“I wasn’t aware that there were other effective medications that weren’t addictive.”*

How often do you drink alcohol?⁷

According to Peter James, “I rarely drink.”

How often do you take benzodiazepines?⁷

According to Peter James, “I don’t use any benzodiazepines.”

⁷ The combined use of opioids and alcohol can increase the risk of respiratory depression. Learn more by [clicking here](#).

Based on his responses above, does Peter James have a substance use disorder?

1. [Yes](#)
2. [No](#)
3. [Need more info](#)

Consider prescribing Naloxone

Regardless of whether Peter James is at risk for a substance use disorder, consider prescribing Naloxone to help prevent opioid overdose.

Learn more about prescribing Naloxone by clicking this link:

<https://spark.adobe.com/page/LxeGfguKyOP36/>

Non-Narcotic Medication Options

Gabapentin may help relieve pain for Peter James. Additionally, be sure to warn Peter James about the dangers of increasing the amount of acetaminophen he may be taking as he weans himself off oxycodone. Learn more below.

Gabapentin

Neuropathic pain like phantom limb pain can be treated with Gabapentin. Peter James does not currently take Gabapentin.

Advantage: no anticholinergic side effects, no hepatic metabolism, no cardiac toxicity.

Disadvantage: slow titration, three times per day dosing, non-linear kinetics.

Acetaminophen

As Peter James weans himself off oxycodone, he may be tempted to take more acetaminophen. Peter James needs to be warned about the maximum dose for acetaminophen and its associated liver damage risk.

Medication Changes

Peter James takes Zolpidem and Oxycodone regularly instead of “as needed.” With that in mind, the following represent recommended changes to Peter James’ medication regimen.

[Click here if you’d like to review Peter James’ current medications.](#)

Taper Zolpidem

The video cuts between views of Dr. Kent and the pharmacist on the phone speaking to each other. Each shot shows the head and shoulders of the speaker.

The pharmacist begins by telling Dr. Kent, *“Right now, he’s on ten milligrams at bedtime. My recommendation would be to cut that down to five milligrams for a week and then two point five milligrams for a week and then stop.”*

Dr. Kent replies, *“That’s great. We’ll need to talk to him about that, but I do think he is motivated to get away from some of these agents that might actually not be helping him as much as initially he thought they would.”*

Start Prazosin

The video cuts between views of Dr. Kent and the pharmacist on the phone speaking to each other. Each shot shows the head and shoulders of the speaker.

The pharmacist tells Dr. Kent, *“My other recommendation is to start some prazosin. When I was talking to his psychologist, I know he had a discussion with the patient about using prazosin, which can help with PTSD induced nightmares.”*

Dr. Kent says, *“You know, I think that sounds great. I would have normally used it as an anti-hypertensive but if it can help with some of his PTSD, I’d like to hear more about that.”*

The pharmacist replies, *“Sure. So they found in studies that it kind of helps decrease that CNS hyperexcitability that happens when patients with PTSD are trying to fall asleep. And this may also help with his blood pressure. So we can use one medication for two indications.”*

Dr. Kent responds, *“That sounds great. I haven’t used it for this particular indication before. How would you normally titrate it in this context?”*

The pharmacist answers, *“Sure. So we would start him at one milligram at bedtime, and titrate by one milligram a week. And the maximum dose in the trials was around fifteen milligrams. After patients are on five milligrams, then we tend to split the dose. So they would take one of their doses around dinner time, late afternoon, and they take the other dose at bedtime.”*

Dr. Kent thanks the pharmacist by saying, *“That’s very helpful. I wouldn’t have known how to dose this for that particular indication. So thank you.”*

The pharmacist cautions, *“One thing that we want to make sure that he is counseled on is the risk of orthostatic hypotension. I know that he’s gonna have some, you know, inclination where he might be a higher fall risk given his amputation. And this does cause orthostatic hypotension.”*

“So he’s gonna need to take a few extra minutes getting out of chairs or getting out of bed in the morning just to have some compensation for that.”

Dr. Kent tells the pharmacist, *“You know, I made a note about that. We’ll be sure to give him some counseling about that.”*

Replace Fluoxetine with Duloxetine

The video cuts between views of Dr. Kent and the pharmacist on the phone speaking to each other. Each shot shows the head and shoulders of the speaker.

The pharmacist begins by saying, *“Right now he’s on fluoxetine for PTSD. But looking at his chart, I also saw that he has neuropathic pain. So I’d*

like to switch him to duloxetine because that will help both his neuropathic pain and there's literature supporting its use for PTSD."

Dr. Kent responds, *"You know, I saw that as an attractive thing to do, too. So that sounds great to me."*

The pharmacist says, *"So I'd start the duloxetine thirty milligrams once a day. And then we're gonna need to slowly taper his fluoxetine because it has a very long half-life. Right now he's taking forty milligrams a day. I would decrease it to twenty milligrams once a day for one week. Then ten milligrams once a day for a week. Then ten milligrams every other day for a week. And then I would stop it."*

Dr. Kent replies, *"That sounds good. I think he'll be very receptive to this and we'll probably go ahead and initiate all three of these adjustments we've talked about (so far)."*

Begin Polyethylene Glycol

The video cuts between views of Dr. Kent and the pharmacist on the phone speaking to each other. Each shot shows the head and shoulders of the speaker.

The pharmacist remarks, *"I noticed that he doesn't have a bowel regimen scheduled and that he's also taking the oxycodone. So I would start him on some polyethylene glycol, seventeen grams once a day mixed in eight ounces of water. (This is) to...try to minimize constipation with the opioids."*

Dr. Kent says, *"Absolutely. I'll have the nurse call him regarding that."*

Reduce Oxycodone Dosage

The video cuts between views of Dr. Kent and the pharmacist on the phone speaking to each other. Each shot shows the head and shoulders of the speaker.

The pharmacist asks, *“Do you have any other questions for me, or concerns?”*

Dr. Kent replies, *“You know, Kate, I think long term another big issue is going to be working down off the relatively high doses of oxycodone that he’s been on. I do think that’s probably going to be a slow process for him. Ultimately that is another issue that we’re going to have to address in his care.”*

“I think we probably have enough to work on today. That might be a back burner issue that you and I can tease out in coming visits.”

The pharmacist responds, *“That sounds like a good plan to me.”*

Introduction to Physical Therapy

The following describe videos of various tests done by Peter James' physical therapist to determine his capabilities in the context of physical therapy.

Rule Out Other Sources of Pain

The video shows Peter James sitting on an examining table in the physical therapists' examining room. He's wearing a button up shirt and drawstring shorts. He has his prosthetic attached to his residual limb. The shot shows the table on the left of the screen, while the physical therapist stands directly beside it to the right.

The physical therapist says, *"So I'm going to have you take off your prosthesis, Peter, and then you can lie down comfortably on your back."*

As Peter James removes his prosthetic left leg, he describes the steps to do so. He twirls a knob at the top of the prosthesis, and upon hearing a click, says, *"First, I release the BOA system."* He presses a button at the bottom of the socket where the remaining limb sits in the prosthetic, just above the mechanical knee joint and continues, *"And then the vacuum."*

With both BOA and vacuum systems released, Peter James slides the prosthetic leg off his residual left limb. He hands it to the physical therapist, who sets it against the wall.

Now Peter James sits on the examining table wearing the compression sock that covers the stump of his residual left limb. He removes an elastic band from under the compression sock and says, *"I use this around the top so I've got some cushion. It has a tendency to bite me in the anterior."*

After placing the elastic band and compression sock with Peter James' prosthetic resting against the wall, the physical therapist says, *"Okay, great. All right I'm going to have you lay down here comfortably on your back, Peter."*

Peter James follows the physical therapist's instructions and stretches out on his back on the examining table.

She continues, *"So one of the things we're looking for is any areas of redness or excessive pressure on a weight bearing area. (Or) if you have any nerve issues or neuromas after the amputation."*

"So we're just going to do a quick assessment here if that's okay."

"Okay," responds Peter James.

The physical therapist bends over the examining table to more closely visually inspect Peter James' residual left limb. She says, "You do have a little bit of just general redness throughout your residual limb, Peter."

"We'll see if that dissipates after having the socket off for a few minutes here."

As she speaks, the physical therapist lightly runs her hands over the stump of Peter James' residual limb, lifting it towards the end with her left hand to peer underneath for any redness.

"(The redness) usually does (dissipate)," Peter James responds to the physical therapist's observation.

"Okay," says the physical therapist. She raises Peter James' residual limb higher in order to use her left hand to lift away the fabric of Peter James' shorts to check for redness on the underside of his remaining limb. She says, *"We're specifically looking for any areas that could be particularly red on a weight bearing area."*

The physical therapist finds no areas that look especially red in comparison to other parts of the residual limb. She lowers Peter James' residual limb back to the examining table and says, *"The design of this socket is helpful in that it's capturing more of the limb and not one area as much."*

Residual Strength

The video shows Peter James lying on an examining table in the physical therapists' examining room. He's wearing a button up shirt and drawstring shorts. His prosthetic left leg has been removed and is leaned up against the wall in the background. The shot shows the table on the left of the screen, while the physical therapist stands directly beside it to the right.

The physical therapist directs Peter to raise his residual lower left limb. *"And go ahead and just bring this limb up for me, Peter, your left limb."* Peter acquiesces and raises the residual limb toward his chest.

The physical therapist faces the prone figure of Peter James at a perpendicular angle to the examining table. She places her left hand on Peter James' intact right leg to help stabilize him while she places her right hand on the upper thigh of his remaining left limb.

The physical therapist then presses down against Peter James' residual limb with her right hand as he attempts to keep it raised. She continues, *"You're going to hold that for me as much as you can. So just hold it there for me,"* as Peter James maintains his position.

Peter James doesn't appear to struggle with the residual strength test. *"Nice,"* says the physical therapist.

She discontinues the pressure she exerted on Peter James' residual limb as he kept it raised toward his chest. With his limb still raised but no longer pushing against her right hand, she cups the end of the stump with both hands as she tells him, *"And we're not going to switch positions right now. We're going to do this all lying on your back, just to get a brief screen."*

With Peter James residual limb still elevated, the physical therapist instructs Peter James, *"So go ahead and push your leg down towards the table,"* as she pushes back up against the bottom of it with her left hand. She uses her right hand to stabilize herself and Peter James by placing it on his left arm, lying crossed on his chest.

Peter James shows no difficulty in performing the task to her satisfaction. *“Good. Very nice,”* the physical therapist tells him.

The physical therapist removes her left hand from under Peter James’ residual limb. Now Peter James’ residual limb rests on the examining table. She moves her left hand to brace against the outside of Peter James’ residual limb and directs him to push his leg towards her, to his left.

“And out to the side, Peter,” she says.

He does so. *“And just hold,”* she continues, as Peter James displays good strength in pushing against her hand.

The physical therapist responds to his efforts with, *“Good.”*

“And now in,” she directs Peter James to repeat the test, this time by pushing his residual limb to his right, in toward his other leg.

“Excellent job,” the physical therapist tells Peter James when he again shows ease in pushing against her restraining right hand, this time placed on the inner thigh of his residual limb.

Residual Range of Motion

The video shows Peter James lying on an examining table in the physical therapists’ examining room. He’s wearing a button up shirt and drawstring shorts. His prosthetic left leg has been removed and is leaned up against the wall in the background. The shot shows the table on the left of the screen, while the physical therapist stands directly beside it to the right.

The physical therapist says, “I wanna see your range of motion of your (residual) limb. And then we’re going to go ahead and do a few things standing back up again.”

“Okay,” says Peter James.

The physical therapist says, “Okay. First, I’m going to have you bring your (residual) limb straight up for me as far as you can go.” As she speaks, the physical therapist slides her left hand under Peter James’ residual limb,

helping him bend it closer toward his chest once he raises the limb. His range of motion appears good.

The physical therapist moves her left hand to push down Peter James' intact right leg as she uses her right hand to continue to help Peter James bend his residual limb up toward his chest. As she does so, she says, "If you do feel any discomfort, I want you to let me know."

"Go ahead and bring your (residual) leg down," the physical therapist tells Peter James. He responds by lowering the residual limb to the examining table once more.

The physical therapist continues by saying, "I'm not going to take specific measurements right now, Peter. We're just going to look at grosser motions."

She takes her left hand and places it on the inner thigh of Peter James' residual limb lying on the examining table and directs the limb in a sweeping arc towards her up and to the left. There appears to be no restriction in mobility.

Protective Sensitization

The video shows Peter James lying on an examining table in the physical therapists' examining room. He's wearing a button up shirt and drawstring shorts. His prosthetic left leg has been removed and is leaned up against the wall in the background. The shot shows the table on the left of the screen, while the physical therapist stands directly beside it to the right.

The physical therapist picks up a thin piece of wire attached perpendicular to a white plastic handle. She shows it to Peter James and says, "*I'm going to have you close your eyes, and we're going to use this monofilament. I just want to know when you feel me touch something. And just say whether you feel it interior aspect, on the side, the end. And this is just to tell if you have protective sensation.*"

"Okay," Peter James says.

“Go ahead and close your eyes,” the physical therapist tells Peter James. She positions the monofilament at the top of Peter James’ thigh and lightly taps it against his skin as his residual limb rests on the examining table.

“Yup. Medial,” Peter James says in response to where he felt the sensation.

She repeats the test just above the end of Peter James’ stump. His leg twitches in response to the sensation and he tells the physical therapist, *“Lower.”*

The physical therapist presses the monofilament against the bottom of the stump of Peter James’ amputated limb. Again he says, *“Lower.”*

She moves the monofilament to press against the outside of Peter James’ stump. He says, *“Lateral.”*

When the physical therapist touches the monofilament against the skin on Peter James’ stump toward the back of his residual leg, she elicits no response. He says *“Right down at the bottom,”* when she repeats the test on the anterior side toward the back of his residual leg.

“Go ahead and lift up your (residual) limb for me,” says the physical therapist.

She uses the monofilament to touch the skin just above the stump of the amputate area on the back of Peter James’ leg.

“Yup,” he says in response to the sensation.

Why does the physical therapist need to perform a comprehensive evaluation before treating Peter James’ phantom limb pain?

1. To make sure the primary care physician didn’t miss anything.
2. To rule out other sources of pain beyond phantom limb pain.
3. To see if physical therapy is physically possible.

Mirror Therapy

Peter James' physical therapist wants to try mirror therapy to help his phantom limb pain.

Click the following link to learn more about mirror therapy:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3468806/>

Because Peter James has been diagnosed with PTSD, he needs clearance from his psychologist before participating in mirror therapy. Otherwise, the mirror image of two intact limbs may elicit memories associated with the trauma he suffered.

The following describes videos where the physical therapist performed following exercises with Peter James during mirror therapy.

Introduction to Mirror Therapy:

Peter James and the physical therapist sit facing each other in an examining room. Peter James has a mirror about thirty six inches tall by twelve inches wide propped between his thighs. He's wearing a button up shirt and drawstring pants in this scene.

"We're gonna just do an initial session," the physical therapist tells Peter James. He nods in response. The physical therapist continues, "I already talk with the psychologist. I know you have a history of PTSD, and so we wanted to make sure that this would be an okay therapy to try."

"(The psychologist) felt that was something you would be able to do, and I know you're willing to give it a try."

The physical therapist then tells Peter James, *"There can be some side effects. It can be emotional when you see two intact limbs within that mirror. You can also feel a sense of being a little bit dizzy when you look in the mirror, or a little bit nauseous. If that occurs, just look away from the mirror and we can try again."*

Peter James nods again and says, *“Okay.”*

Observe

Peter James and the physical therapist sit facing each other in an examining room. Peter James has a mirror about thirty six inches tall by twelve inches wide propped between his thighs. He’s wearing a button up shirt and drawstring pants in this scene.

The mirror leans against the inside of Peter James’ thigh of his residual left limb. It shows the reflection of his intact right limb, making it seem like Peter James has two intact limbs.

The physical therapist holds Peter James’ gaze with her own and says, *“I want you to start by having your lower extremities in the mirror and you’re going to be looking at that mirror and visualizing that you can see both limbs.”*

The physical therapist directs Peter James’ gaze toward his lower extremities, both real and reflected. She first gestures to his intact limb and says, *“So this is your right,”* before she points to the reflection, *“and left limb.”*

“So you’re going to sit there a minute or two, Peter, until you really get the impression that you are seeing two intact limbs in that mirror.”

Peter James nods and contemplates both his lower limbs, both real and reflected, in the mirror.

After five seconds, Peter James jokes, *“My left foot was better looking,”* and then takes a deep breath and makes a face. He looks somewhat uncomfortable and draws back from looking at the mirror after another five seconds.

“Okay,” says the physical therapist. *“Did you get a little dizzy?”*

Peter James says, *“Yeah,”* as he pinches the bridge of his nose with his eyes closed. He looks distressed.

“So when you do (feel dizzy),” the physical therapist says, “I want you to just look away.”

Peter James opens his eyes and looks at her. *“Okay,”* he says. He shifts around in his seat, still looking uncomfortable.

The physical therapist repeats, *“So if it bothers you, you’re just going to look away from the mirror.”*

Peter James’ distress doesn’t decrease, and the physical therapist distracts him by saying, *“So this is a good opportunity, Peter, to ask you: over the course of the last couple weeks, how severe has your phantom limb pain been?”*

Peter James replies, *“This past weekend was really tough with the major weather change that we had, with the front coming in.”*

“It’s not so bad today.”

“Okay,” says the physical therapist.

“Maybe cuz that front has passed through,” continues Peter James. *“I don’t know. It does seem to have something to do with it.”*

Peter James still appears somewhat distressed, so the physical therapist continues to distract him. *“All right,”* she says. *“So I know this has been something that has really affected your ability to function. And you mentioned that it does last when you have it, it can last the entire day. So the last few weeks, has (the phantom pain) lasted the majority of the day?”*

Peter James replies with, *“There have been days that I’ve been nonfunctional. Basically just sitting without the prosthesis on. I haven’t been using the shrinker⁸. Maybe I should get back to that.”*

⁸ Shrinker: a compression garment like an elastic sock. It helps with swelling when wearing a prosthesis.

The physical therapist ends the observation aspect of the mirror therapy once Peter James' distress lessens.

Basic Motor Skills

Peter James and the physical therapist sit facing each other in an examining room. Peter James has a mirror about thirty six inches tall by twelve inches wide propped between his thighs. He's wearing a button up shirt and drawstring pants in this scene.

The mirror leans against the inside of Peter James' thigh of his residual left limb. It shows the reflection of his intact right limb, making it seem like Peter James has two intact limbs.

The physical therapist tells Peter James, *"So I wanna start with just some basic motor skills. What I'm going to have you do is find motions that feel comfortable to you, that feel good."*

"Okay," says Peter James.

"We're going to find things that feel comfortable (and) good to you that we'll implement into future treatments."

The physical therapist directs Peter James' attention to the reflected image of his intact limb. She tells him, *"So to start off with, I want you to (move your foot up and down at the ankle)."*

Peter James complies and the physical therapist says, *"Just like (that). Up and down with your whole ankle. And again...I wanna find things that feel pleasant to you."*

She tells him, "You're gonna continue to look in the mirror. We're going to do about ten to fifteen repetitions of each one of these things."

"Okay," says Peter James.

"Nice and slow," says the physical therapist. *"And again, if you start to feel dizzy, let me know and we'll take a pause."*

Although Peter James looks slightly uncomfortable, he completes the repetitions of moving his intact foot up and down at the ankle while watching the real limb and the reflection in the mirror. *“I’m getting more comfortable with it,”* he says.

“Good,” replies the physical therapist. Peter James completes the exercise set and she says, *“And then I’m going to have you rock (your foot). From your heel to your toe, Peter.”*

Peter James complies and rocks his foot back and forth starting from his toe, rocking back to his heel, and forward again to the toe. *“And you’re looking in the mirror, and you’re visualizing two intact limbs,”* the physical therapist instructs him. He continues rocking his foot back and forth, looking at the reflected image and real limb.

“You’re doing a great job,” the physical therapist encourages Peter James as he completes the exercise.

“Wow,” Peter James says. *“That’s weird.”*

“Isn’t it?” asks the physical therapist. Peter James laughs, somewhat nervously.

“It’s a new sensation,” says the physical therapist as Peter James looks up and catches her eye and smiles uncertainly. *“Had to look to look away from it?”* she asks him. He nods. *“Okay,”* she says.

“My stump started reacting!” Peter James laughs again.

The physical therapist smiles and says, *“Okay.”*

Sensory Exercises

Peter James and the physical therapist sit facing each other in an examining room. Peter James has a mirror about thirty six inches tall by twelve inches wide propped between his thighs. He’s barefoot, and wearing a button up shirt and drawstring pants in this scene.

The mirror leans against the inside of Peter James' thigh of his residual left limb. It shows the reflection of his intact right limb, making it seem like Peter James has two intact limbs.

"We're also gonna do some things that have to do with different sensations. So the first one is that your foot is already on the carpet," says the physical therapist.

"Right," responds Peter James.

The physical therapist says, *"Okay, so I'm just going to have you slide your foot back and forth against something that has a texture to it. And we can vary that texture. For the purposes of this morning, we're just going to use the carpet that we have right here."*

Peter James complies with her instructions and rubs his foot back and forth on the carpet, while watching the intact limb and its reflection in the mirror. He scowls in slight distress and concentration.

Seeing him scowl, the physical therapist tells Peter James, *"If there's something that doesn't feel pleasant to you, just let me know. Or if there's something that you don't like, you can let me know."*

Peter James continues rubbing his foot on the carpet in a measured way and says, *"No, it feels okay."*

"Okay," replies the physical therapist. *"You can take a little break."*

Peter James blinks and looks up at her with interest as she reaches for a plastic tub on the floor about five inches high, filled with around two inches of fine sand.

The physical therapist moves the plastic container with the sand toward Peter James. She tells him, *"I'm also going to have you try some different textures here. And this is just a bucket of sand."*

In an apparent attempt to set himself at ease, Peter James jokes, *"Oh, we're going to the beach?"*

“We’re going to the beach, right!” the physical therapist responds. She positions the plastic container of sand in front of Peter. *“So we’re going to have you put your foot right into the sand,”* she tells him as he lifts his foot, still bare, into the container and rests it on the sand.

“And just the same thing,” she instructs Peter James. *“We’re just gonna move your foot in there a little bit, just like you did on the carpet. Wiggle your toes, and just move your foot over the surface of the sand.”*

Peter James continues moving his foot around in the sand while watching the reflected image in the mirror. He looks less distressed until he exclaims, *“Woah!”* and looks at the physical therapist.

“That’s weird,” he tells her, matter-of-factly.

“Different sensation, isn’t it?” she asks him.

“Yeah,” says Peter James. He leans away from the mirror, looking slightly more distressed.

“Do you need to take a break on that?” asks the physical therapist.

“Yeah,” Peter James agrees. He looks a little wild around the eyes, but appears curious as the physical therapist removes the plastic container of sand and retrieves a plastic baggie full of different size marbles.

Opening the bag, the physical therapist pours the marbles out in front of Peter James. He sighs in an apparent release of tension as she arranges the marbles on the floor in front of him.

“(So) just a brief exposure to (mirror therapy) today. Then we’re going to go into a bit more detail when I see you next time,” she tells him.

Peter James says, *“Okay.”*

The marbles now in place, the physical therapist says, *“We’re going to start with the bigger marbles for today, just till you’ve had a little bit of practice.”*

The physical therapist moves the plastic container filled with sand in front of the area where she placed the marbles on the floor. She tells him, “*So we’re going to do a functional task. And what I’m going to have you do with that, Peter, is see if you can...pick up the marbles with your toes and put them into the bucket.*”

Peter James does so with apparent ease.

The physical therapist continues, “*And the same thing is that you’re going to be looking in the mirror and seeing it as a bilateral task, with two intact limbs.*”

Peter James quickly picks up all the marbles with his toes and deposits them in the plastic container of sand, while also glancing in the mirror to see the reflected foot and limb. He looks intently focused on his task as he does so.

“*Have you ever done that before?*” asks the physical therapist in surprise.

Peter James looks up and smiles at her. “*No,*” he says. He laughs as she tells him, “*You’re very skilled at it!*”

How do you end a mirror therapy session?

When ready to end a mirror therapy session, be sure to prepare the patient to see the amputated limb once more. Then have the patient rate the intensity of their phantom limb pain.

Acupuncture

Peter James' primary care physician feels acupuncture may help his phantom limb pain.

Learn more about outcomes in treating phantom limb pain using acupuncture by clicking the link below:

[Learning Resources](#)

The following describe videos to explain the best case scenario with acupuncture, and the acupuncturist's examination of Peter James.

Acupuncture goals

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

The acupuncturist tells Peter James, *"Ideally, you'll have reduced frequency of the phantom limb episodes, and reduced levels of discomfort as well."*

"All right," says Peter James.

"So that's our best case outcome. And what I usually wind up saying to patients is that we should look for meaningful changes for you around the eighth or tenth treatment or so," says the acupuncturist.

"Okay," responds Peter James.

The acupuncturist continues, *"You may see change sooner, but that gives us enough time to work together to make sure we're doing the right thing, and give you the opportunity to see what the acupuncture is doing for you."*

"Okay," says Peter James.

The acupuncturist tells him, *“And then we might continue to treat a little further. This depends on your response, but ideally we would get you to a place where you could discontinue acupuncture and then return to it from time to time as a resource.”*

“Okay,” replies Peter James.

The acupuncturist says, *“So that you would have periods of six months to a year where you’re not using acupuncture treatments.”*

“That long?” Peter James asks.

“That’s our best case plan,” says the acupuncturist.

Area of Phantom Limb Pain

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

In response to the acupuncturist asking Peter James where he feels the pain in his phantom limb, Peter James pats the front of his prosthetic and says, *“The front part of the foot, ankle, and calf.”*

“When you say ‘the front part of the foot,’ can you show me a little bit?” asks the acupuncturist.

Peter James makes a claw-like motion with his left hand, reaching it towards the foot of his prosthetic leg. *“Like the toes are curling under,”* he says.

He leans back on the examining table and tells the acupuncturist, *“I’ll also get the pins and needles, or a wiry sensation. Things like that.”*

The acupuncturist gestures to Peter James’ prosthetic limb. *“And this is all just on the side where there’s no leg at all, right?”* he asks.

“Oh yeah,” responds Peter James.

“Okay,” says the acupuncturist. “Very good.”

Palpation to Determine Needle Placement

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

The acupuncturist rises from his seat to kneel in front of Peter James. He says, *“So, what I’d like to do now, if I can, is to slip off your shoe and sock. And I’m going to palpate a little bit.”*

He gestures to Peter James’ prosthetic leg and says, *“Cuz I know over here the discomfort is there but (palpating the intact limb is) helpful for me. When we plan our treatments, what I’d like to do is understand on this (intact) leg where you experience the discomfort on your phantom (limb).”*

“Okay,” says Peter James.

After removing Peter James’ shoe and sock on his intact leg, the acupuncturist palpates the upper anterior calf. As he does so, he says, *“You said on your phantom limb, this area, is there cramping?”*

“A little below there,” replies Peter James.

The acupuncturist moves his hand down Peter James’ intact leg about two inches at this response. *“Yeah,” says Peter James, after the acupuncturist palpates the area about four inches above the ankle. “Wherever that muscle ends (towards the foot).”*

The acupuncturist shifts his palpation to the exterior of Peter James’ intact calf, mirroring the location Peter James indicated on the opposite side of his leg. *“And here?” he asks.*

“Yeah, that’s the spot right there,” Peter James says.

“Very good,” says the acupuncturist. He palpates the top of Peter James’ intact foot right where it meets the ankle and says, *“And then lower down on the foot, you mentioned right on top here.”*

“Uh-huh,” Peter James replies. *“That’s a tough one. It feels like (an) iron spike through there.”*

“Ooh,” responds the acupuncturist. *“Right here?”* he asks as he palpates the area again. Peter James says, *“Yeah.”*

The acupuncturist starts to palpate the upper part of Peter James’ foot closer toward his toes. *“Yeah, down there I get the pins and needles or burning sensation,”* Peter James tells him.

“And then you have some shooting pain sensations coming up from here?” asks the acupuncturist. He touches the top of Peter James’ foot once more by the toes.

“Yeah,” Peter James responds. *“I call ‘em ‘zingers.’ It seems like they start beyond the end of the toes, but it shoots all the way up.”*

“Well, that’s hugely helpful,” the acupuncturist tells Peter James. *“Thank you very much.”*

“You’re welcome,” replies Peter James.

Proposed Number of Needles

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

In response to how many needles might be used for treatment of Peter James’ phantom limb pain, the acupuncturist says, *“For treatment in your case I would estimate about seven to ten needles or so. It depends a little bit on the reactive areas, what we find when we palpate again and begin treatment. But that’s roughly correct.”*

“Okay,” says Peter James.

Needle Placement

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

The acupuncturist explains to Peter James, *“Our approach with acupuncture will be to needle areas on your intact leg that corresponds roughly to the areas where you experience the phantom pain discomfort.”*

“Okay,” says Peter James.

The acupuncturist continues, *“We’ll also treat other areas of the body because we use essentially a fairly holistic body model when we do this.”* He gestures to Peter James’ intact right limb and says, *“But we’ll be focused here.”*

“Okay,” replies Peter James.

Treating Comorbid PTSD and Insomnia

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

Peter James wants to know if acupuncture can help to treat his PTSD and insomnia. The acupuncturist tells him, *“It might be helpful for that. There’s some literature on insomnia, and a very small literature on PTSD. We could add some additional acupuncture points to see if that would be helpful for you.”*

“Okay,” says Peter James.

The acupuncturist says, *“One of the things we know, and you know from your own experience, is that the relationship between your PTSD, sleeplessness, and the phantom pain can be quite marked.”*

“Yeah,” Peter James says.

The acupuncturist continues, *“Because pain could be a stressor or a signal for hypervigilance of the PTSD and so forth. And pain can keep us awake. So very often these symptoms kind of cluster together. And if we can create a solution in one area that may be helpful.”*

“Great,” responds Peter James.

Worst Case Scenario

Peter James and the acupuncturist sit facing each other in an examining, at an angle to the camera. The acupuncturist sits in a chair facing the examining table in the room, where Peter James sits wearing his prosthetic left leg.

Peter James asks the acupuncturist what the worst case scenario would be for acupuncture treatment. The acupuncturist replies, *“Realistically, is no effect.”*

“Okay,” Peter James acknowledges.

“Theoretically, therapies could conceivably make the situation worse, (but) that would be unlikely,” says the acupuncturist.

Peter James' Outcomes

After a few weeks of coordinated care with his treatment team, Peter James meets with his nurse case manager to review his progress. Aside from the treatment goals he outlined in the beginning of the case, Peter James also filled a prescription for Naloxone in case of opioid overdose while he still takes oxycodone.

Review the following questions about Peter James' case, then continue to the description of the videos that explain Peter James' outcomes.

1. What is Peter James' major goal in seeking care at this time?
2. Peter James reports that he has post-traumatic stress disorder, phantom limb pain, insomnia, and anxiety. How are these related?
3. Does Peter James have a substance use disorder?
4. What treatments has Peter James had in the past and how well have they worked? Were the treatments appropriate?
5. What pharmacologic and non-pharmacologic treatments might help Peter James?

Medication Reduction

In the beginning of this case, Peter James said he wanted to increase his overall function as part of his treatment. He felt one of the ways to achieve this goal centered on reducing his medication.

After meeting with the different members of his care team, Peter James now sits in a chair opposite to the nurse care manager in an examining room to discuss his progress so far to increase his function.

The nurse care manager says, *"It's been a couple weeks and I just wanted to review how things are going. I know you've seen a number of people, right?"*

“A lot,” Peter James laughs. “Don’t ask me to name names.”

The nurse care manager smiles and says, *“I understand, but hopefully as you’re working with a team it’ll get a little bit easier and you’re seeing people a little regularly.”*

She continues, *“Dr. Kent and I spoke a couple of times. I understand he talked with the pharmacist and made a plan with you about making some adjustments in your medicines.”*

“Yeah,” Peter James says. “We’re decreasing dosages and looking to see which ones we can eliminate completely.”

This conversation is in keeping with Peter James’ desire to decrease and eliminate some of his medication that prevented him from functioning in his day-to-day life.

Reduce Insomnia

Peter James sits in a chair opposite to the nurse care manager in an examining room to discuss his progress so far to increase his function. He expressed a desired to reduce insomnia as part of his treatment goals.

In response to whether his insomnia has improved, Peter James says, *“I guess it’s getting a little better. I find it easier to fall asleep. I mean, I might not always stay asleep for more than two hours, you know, before the nightmares start, or phantom pain wakes me up or something like that.”*

The nurse care manager replies, *“I think it’s going to take some time. You know, you’ve been on the medicines a long time and we’re trying to do things a little bit at a time so that you can adjust to changes. And then also have that coordinated with the psychologist.”*

Increase Function

Peter James sits in a chair opposite to the nurse care manager in an examining room to discuss his progress so far to increase his function.

In response to whether he's noticed a difference in his phantom limb pain that benefits his overall function, Peter James says, "*The phantom pains aren't as frequent. I haven't noticed a big difference in intensity yet. But just the frequency is good. It's decreasing.*"

Appendix I: Learning Resources

The following categories include optional additional learning resources related to phantom limb pain, post-traumatic stress disorder, substance use, complementary treatments and veterans.

Click the link below each entry to access additional information. Note that material may be subject to individual copyright protections. It is included here for informational purposes only.

Pain

Anatomy and physiology of pain:

<https://www.ncbi.nlm.nih.gov/books/NBK219252/>

Gate theory of pain:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4009371/>

Nociceptive pain:

<https://www.ncbi.nlm.nih.gov/books/NBK32659/>

Neuropathic pain:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810425/>

Pain sensitization:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2750819/>

[Pain assessment tools](#)

Pain management in veterans:

http://www.hsrd.research.va.gov/research_topics/pain.cfm

Phantom limb pain mechanisms:

<http://www.inifoundation.org/index.php/education/neuroscience-anthology/198-phantom-limb-pain-mechanisms>

Trevelyan 2016: Perceptions of phantom limb pain...and its effect on quality of life:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4977953/>

Knotkova 2012: Current and future options for the management of phantom limb pain:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3308715/>

Pain Assessment Tools

Use the link immediately following the name of each pain assessment tool to learn more about the tool listed. (*Links direct to outside webpages that may not be accessible.*)

Note that tools may be subject to individual copyright protections. They are included here for informational purposes only.

Unidimensional Pain Assessment Tools:

- numeric pain rating scale:

<http://www.rehabmeasures.org/PDF%20Library/Numeric%20Pain%20Rating%20Scale%20Instructions.pdf>

- faces scale: <http://wongbakerfaces.org/>

- visual analog scale:

<https://www.painedu.org/downloads/nipc/pain%20assessment%20scales.pdf#page=4>

- verbal pain intensity scale:

<http://www.painedu.org/Downloads/NIPC/Pain%20Assessment%20Scales.pdf#page=5>

- FLACC scale

http://prc.coh.org/PainNOA/Flacc_Tool.pdf

Multidimensional Pain Assessment Tools:

- Brief pain inventory:

http://www.npcrc.org/files/news/briefpain_short.pdf

- McGill pain questionnaire: <https://www.gem-beta.org/public/DownloadMeasure.aspx?mid=1348>

- PADT:

<https://www.drugabuse.gov/sites/default/files/files/PainAssessmentDocumentationTool.pdf>

- West Haven-Yale MPI:

<http://www.va.gov/PAINMANAGEMENT/docs/WHYMPI.pdf>

- PQRST Pain assessment

<http://www.crozerkeystone.org/healthcare-professionals/nursing/pqrst-pain-assessment-method/>

Substance Use

DSM-5 Criteria for Substance Use Disorders:

<http://ajp.psychiatryonline.org/doi/pdf/10.1176/appi.ajp.2013.12060782>

Naloxone: A Brief Overview:

<https://spark.adobe.com/page/LxeGfguKyOP36/>

Substance Abuse Assessment tools: CAGE-AID (adapted to include drugs):

<http://www.integration.samhsa.gov/images/res/CAGEAID.pdf>

Opioid Risk Tool (ORT):

<http://pcssmat.org/wp-content/uploads/2014/11/Opioid-Risk-Tool.pdf>

NIDA Drug Use Screening Tool:

<https://www.drugabuse.gov/nmassist/>

VA/DoD Clinical Practice Guidelines: Management of Opioid Therapy for Chronic Pain:

https://www.va.gov/PAINMANAGEMENT/docs/CPG_opioidtherapy_fullt_ext.pdf

Drug Abuse Screen Test:

<https://cde.drugabuse.gov/instrument/e9053390-ee9c-9140-e040-bb89ad433d69>

NIDA Drug Use Screening Tool: Quick Screen:

<https://www.drugabuse.gov/nmassist/>

Mental Health

Overview of PTSD:

<https://www.nimh.nih.gov/health/publications/post-traumatic-stress-disorder-basics/index.shtml>

Overview of Cognitive Behavioral Therapy:

<https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0072481/>

Nilamadhab 2011: Cognitive behavioral therapy for the treatment of post-traumatic stress disorder

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3083990/>

Overview of sleep apnea:

<https://www.nhlbi.nih.gov/files/docs/resources/sleep/slpaprsk.pdf>

STOP BANG tool for sleep apnea:

https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/am/ame/guide/media/STOP%20BANG%20Questionnaire.pdf

Bloom 2009: Evidence-Based Recommendations for the Assessment and Management of Sleep Disorders

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2748127/>

Lambiase 2014: Utility of actiwatch sleep monitor to assess waking movement

<https://www.ncbi.nlm.nih.gov/pubmed/24781894>

Complementary Treatments

Shekelle 2014: Evidence map of acupuncture

<http://www.hsrd.research.va.gov/publications/esp/acupuncture.pdf>

Young-Dae 2014: Acupuncture for Post-Traumatic Stress Disorder

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3580897/>

Goyata 2016: Effects from acupuncture in treating anxiety: integrative review

<https://www.ncbi.nlm.nih.gov/pubmed/27355312>

Chi-Chuan 2014: Successful treatment of phantom limb pain...in the traumatic amputee

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4145449/>

Mirror therapy for phantom limb pain:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3468806/>

Mirror Therapy: Patient Selection Criteria

<http://onlinelibrary.wiley.com/doi/10.1111/papr.12301/full>

Veteran-Specific

VA Patient Aligned Care Team (PACT):

http://www.visn4.va.gov/VISN4/CEPACT/what_is_pact.asp

VA PACT Care Management Handbook:

https://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2977

Prevalence of PTSD in Veterans:

<http://www.ptsd.va.gov/professional/PTSD-overview/epidemiological-facts-ptsd.asp>

Sleep Problems in veterans with PTSD:

http://www.ptsd.va.gov/professional/co-occurring/sleep_problems_veterans_ptsd.asp

Gros 2015: Relations between Pain, PTSD Symptoms, and Substance Use in Veterans

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4867497/>

Related Websites

National Institute on Drug Abuse (NIDA):

<https://www.drugabuse.gov/publications/media-guide/science-drug-abuse-addiction-basics>

National Institute of Mental Health (NIMH):

<https://www.nimh.nih.gov/index.shtml>

National Institute of Nursing Research (NINR):

<https://www.ninr.nih.gov/>

U.S. Department of Veterans Affairs (VA):

<https://www.va.gov/health/>

Patient Reported Outcomes Measurement Systems (PROMIS):

<https://commonfund.nih.gov/promis/index>

Patient Aligned Care Team (PACT):

http://www.visn4.va.gov/VISN4/CEPACT/what_is_pact.asp

Appendix II: Answer Key

Peter James' Treatment Goals

Why should Peter James establish treatment goals? Select the correct answer below and then read Peter James' treatment goals. There may be more than one correct answer.

1. Establishing treatment goals fosters a collaborative relationship with care providers. (correct)
2. Establishing treatment goals empowers the patient to help prioritize the treatment plan. (correct)
3. Establishing treatment goals offers the opportunity for care providers to address any unrealistic expectations. (correct)
4. Establishing treatment goals clarifies the framework for addressing care. (correct)

Peter James' Substance Use

Based on his responses above, does Peter James have a substance use disorder?⁹

1. Yes (incorrect)
2. No (incorrect)
3. Need more info (Correct – In order to diagnose Peter James with a substance use disorder, he needs greater than or equal to two DSM criteria for diagnosis in the last twelve months.)

Introduction to Physical Therapy

Why does the physical therapist need to perform a comprehensive evaluation before treating Peter James' phantom limb pain?

1. To make sure the primary care physician didn't miss anything. (incorrect)
2. To rule out other sources of pain beyond phantom limb pain. (correct)
3. To see if physical therapy is physically possible. (incorrect)

⁹ Meeting two to three DSM-5 criteria qualifies as mild substance use disorder, while meeting four to five criteria equals moderate substance use disorder. Severe substance use disorder is diagnosed when at least six criteria are met.