Motivating Movement: An Age-Friendly Approach to Pain, Mood, and Mobility

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Una E. Makris, M.D., M.Sc.: I'm thrilled to be talking to this audience about an age-friendly approach to pain, mood, and mobility. I have no commercial financial relationships to disclose the funding I have is listed here. As an extension of Daniel's introduction, my overarching career goals are as follows. I'm a rheumatologist with a research focus and passion on older adults. I'm a clinical investigator focused on improving outcomes that matter most for older adults with chronic musculoskeletal pain. One of my goals that we're going to talk about today is to develop high-quality, effective, non-pharmacologic interventions that can be feasibly integrated into care for older adults. Today, we'll start with speaking about epidemiology of musculoskeletal pain in older adults. We'll talk about behavioral interventions, and then I'd like to give an example of a behavioral intervention our group has developed called MOTIVATE.

As musculoskeletal specialists, it is especially appropriate to focus on the aging population. The National Institute of Aging predicts that a very large increase in disability will be caused by increases in age-related disease, and arthritis and back pain are at the top of that list. As you can imagine, this has enormous implications for social support systems, resources, and our economy. We know that the prevalence of chronic pain varies depending on the location. In primary care among individuals aged 65 and older, the prevalence of chronic pain is nearly 50%. If we're looking at nursing homes, that prevalence is up to 80%, so it's incredibly common, and we know that aging is a risk factor for chronic musculoskeletal pain.

We also know from the literature that pain in later life increases various adverse outcomes. For example, pain is related to falls and fractures, related to depression and anxiety, suicidality, social isolation, sleep disturbance, mobility problems, decreased physical functioning, cognitive deficits, frailty, and spousal distress. Today, I'm going to start with a project that is focused on back pain, and the reason I chose back pain is because it's the most common chronic pain condition. It's the second most common reason for an office visit. We know that lifetime prevalence exceeds 80%, and we just learned about the considerable morbidity and potential adverse outcomes related to chronic pain in later life. We also know that pain is costly. Direct and indirect costs exceed 100 billion per year, and in the last 10-20 years, diagnostic and therapeutic procedures have skyrocketed for back pain.

However, patient outcomes have yet to improve, so we have a lot of work to do in this area. Today, I'll be talking specifically about simultaneously targeting depression. The combination of pain and depression. The reason I focus on this is because up to 50% of my patients with chronic pain will have comorbid mental health diagnosis, whether that's depression, anxiety, or PTSD. We also know that both are risk factors for the other onset, resistance to treatment, higher recurrence and severity if either are left untreated. I will say as a clinical investigator, I really focus on target populations that I see in my own practice, and this particular target population is often refractory and most challenging, and I felt like we had a lot of work to do in this area.

We'll be speaking more about this population. Whenever I think about a complex medical condition like chronic musculoskeletal pain, chronic back pain, where you have multiple contributors that lead to the condition, I always think that the intervention must be informed by a biopsychosocial model. Here I've listed the bio, the psycho, the social, and I would say that many physicians are trained in the bio aspects, and this concept is not new. This concept in this

specific figure comes from a textbook out of a 1970s psychology textbook. But I want to emphasize that this concept has variable uptake among specialties and disciplines, and I find it incredibly important to not forget about the psychosocial aspects of pain as we're working with this population.

I think it's safe to say that we all understand there's an urgent need for effective therapy and that medications alone and surgery are often less appealing, especially among older adults, and this is for various reasons. These include multimorbidity, so multiple chronic comorbid conditions, polypharmacy, five or more medications, frailty, fragmented social support systems. We also have plenty of literature that suggests long-term nonsteroidal anti-inflammatories are often contraindicated in older adults, whether it's because of kidney impairments or because of some other contraindication. We're all living through this opioid epidemic. Whether we've personally been affected by adverse events related to opioids, we know that these include altered mental status, potentially falls, it can lead to hospital admission, overdose, and even death.

We have plenty of evidence that now suggests that opioids are not more effective than NSAIDs, Tylenol, ibuprofen, and so forth, for musculoskeletal pain. However, especially in my older adult population, NSAIDs are often contraindicated. What do we turn to next? We often turn to the guidelines. The CDC and the American College of Physicians guidelines all suggest that first-line therapy for chronic musculoskeletal pain are really non-pharmacologic behavioral interventions. However, in my practice, what I see is that medications are often first provided, and I think that's because it takes time to talk and counsel about behavioral interventions. Sometimes it's perceived as easier to prescribe a medication than to counsel on behavioral interventions. As a patient, it's hard to actually do the work of behavioral change.

I want to emphasize that most importantly, patients are asking for something else, not just a medication. When I was finishing up my fellowship at Yale, I received my first grant to understand the biopsychosocial impacts of back pain among older adults. I wanted to interview a diverse, older population. I would drive every week from New Haven, Connecticut, into New York, into the Bronx. I would interview older, diverse patients, and time and again, they would say, I don't want another pill. If I go to my doctor, they will give me more medication or send me for surgery, and that's a gamble. I want something else. Often these patients wouldn't even talk to their doctor about their back pain.

They were worried that only medications or surgery would be offered. They wanted some type of self-management, something that they could do for themselves at home. Let's talk about existing behavioral interventions. We know that cognitive behavioral therapy focused on chronic pain is effective and relatively safe. As I was speaking to various experts around the US, we felt that perhaps cognitive restructuring may be challenging in older adults, especially if there's some aspect of cognitive impairment. We have mindfulness, meditation, tai chi, and yoga. We have robust literature on physical activity. However, very few interventions focus exclusively on older adults. Many of these interventions have been developed for younger adults, and we extrapolate what works for younger adults to older populations, and very few interventions have been developed with the comorbidity of physical, pain, and mental health in mind.

In 2015, I was invited to serve on this expert panel for this state-of-the-art conference focused on nonpharmacologic approaches to chronic musculoskeletal pain management. This was sponsored by the VA, and it's good to know that we have sufficient evidence for various implementation-ready interventions for pain. These include manual therapies as listed here, acupuncture, massage, behavioral therapies, movement therapies. However, different approaches have similar efficacy, and no one approach is effective for most patients. What I like to propose is that we offer a toolbox for our patients of various approaches that's really based on access and ability to move forward with these interventions. Again, I want to reiterate that very few interventions were developed within for older adults with both pain and mental health conditions.

With that, I want to go through a very typical patient that I see in my clinic. This could be Mr. L or Ms. L, a 78-year-old gentleman with 20 or more years of episodic low back pain that radiates

down the legs that does not radiate down the legs. Bending, lifting exacerbate the pain. He rates his pain as seven out of ten. I just want to emphasize that we often ask our patients to rate their pain, and what I tell my fellows and the residents that I work with and the medical students, that number means very little to me if I don't understand how it actually impacts you from a functional standpoint. I always want to understand that seven out of ten pain, what does that mean?

Mr. L is unable to garden all afternoon as he used to. He avoids church; he's worried about spasm, and that is embarrassing. He declines offers to see friends, and he has poor concentration. He feels hopeless at times and lonely. His grandkids rarely visit, and he seems to have tried it all. He's tried physical therapy, chiropractor care, acetaminophen, NSAIDs, tramadol, opioids, even, epidural steroid injections, and nothing seems to have helped. On exam, he is a thin gentleman using a cane. He has some paraspinal muscle spasm. He has bony enlargement of his knees and his small hand joints consistent with osteoarthritis. Further assessment indicates he has moderate depressive symptoms. It's really for patients like this that I see every single day that I wanted to provide and create more opportunity and options for age-friendly care.

We proposed a novel intervention that builds on prior work. We call this MOTIVATE, moving to improve pain and depression in older adults. Here we develop and evaluate a telephone-based behavioral intervention for older adults with both back pain and depression. This is building on prior work of a similar program that targeted diabetes and depression. Here, we are targeting pain and depression. The core components of MOTIVATE are really that behavioral activation, using principles of motivational interviewing, and we'll speak more about that in a moment, and that these goals, consistent with values will cross-cut both physical and psychological diagnoses. I really wanted to focus on how older adults are uniquely motivated to make and sustain behavioral change, and this concept of MOTIVATE intervention aligns with the Geriatric 5Ms.

As I mentioned, I'm passionate about aging and geriatrics, and so I wanted to develop a program that aligns with age-friendly care. Many of you have already heard about the geriatric forums or the Geriatric 5Ms. This was developed and introduced by the Institute of Health Care Improvement and the John A. Hartford Foundation and really focuses on the forums, mind, mobility, medications, what matters most. Then the American Geriatric Society added the fifth M, which is multicomplexity. MOTIVATE, I think beautifully encompasses all of this. We're targeting depression, which is part of mind. We are focusing on physical activity and improving movement. We assess for medications, and at the heart of MOTIVATE intervention is really understanding what matters most to our patient.

What is motivation? As I was building out MOTIVATE as the intervention, I was thinking, I don't really want to focus purely on cognitive behavioral therapy. What else can we target? It's really motivation and using motivational interviewing. Motivation is the driving forces responsible for initiation, persistence, direction, and vigor of goal-directed behavior. These investigators looked at 89 studies assessing changes in motivational constructs for physical activity, and these included intention, stages of change, and autonomous motivation. The behavioral change techniques that were most beneficial included behavioral goal setting, self-monitoring of that behavior, behavioral practice and rehearsal, and increases in intention and stage of change were significantly related to increases in physical activity. This was critical as I was designing MOTIVATE.

I really want to target motivation. With that, I decided to focus on motivational interviewing. What is MI motivational interviewing? MI is a collaborative, person-centered form of guiding to elicit and strengthen motivation to change. It really tackles ambivalence to make a behavioral change. It originated with substance use and really encompasses a wide variety of target behaviors. It is not recommended as a manualized treatment, so we really use MI techniques in motivate. This is a schematic that essentially shows that our coach in MOTIVATE identifies what matters most, which is what we call values, links a physical activity-based goal to those values, and thereby we hope to motivate the patient, activate the patient to improve the behavior, in this case, physical activity, and then hopefully sustain the behavioral change.

This is a conceptual model that we developed with colleagues. It's essentially a model pathway by which our behavioral intervention is hypothesized to improve the behavioral and ultimately clinical outcomes. Motivate targets the aspects in the red box in hopes to help the patient engage in physical activity and ultimately improve pain and depression. I'm going to walk you through how our team developed Motivate. In Phase 1, we really developed this telephone-delivered intervention for older adults with back pain and depression, again, all delivered over the telephone. Telephone health coaching is particularly appealing, especially to improve access for those who may be mobility-limited. Early on in my career when I was doing more epidemiology, we published a study really showing a strong association between back pain and resulting mobility impairment.

So my question was always, "How can we make this most convenient for the patient? How can we do this in their home, in the community, and not have them drive into our clinic?" We also know from the literature that types of client-selected goals most often met with telephone health coaching include physical activity, emotional health, and pain management. That is really Motivate. Motivate is eight sessions long, delivered over 8 to 10 to 12 weeks by a health coach.

Mr. L: Why is telephone coaching ideal? He lives three and a half hours away. In rural areas, there are rarely behavioral services that patients can access, so we enjoy working with Mr. L in his own home. This is a table outlining session content. In the beginning, we get to know the patient. We try to understand how the back pain impacts their day-to-day life, how the depression and back pain are linked. In Session 2, we talk about values, and we talk about what is most important to the individual. In Session 3, 5, and 6, we identify and then plan goals. Physical activity-based goals that are based on one of the values that were identified in Session 2.

In Session 4, I really thought this would be an optional session, challenging thoughts and beliefs, but truly everyone does have some maladaptive behaviors that we can work on. Then in Session 7 and 8, we really try to teach the individual, teach the patient how to carry on these behaviors without us. One of the most gratifying aspects of doing clinical research and health services research in this way is developing a intervention with and for older adults. I really enjoyed working with various stakeholder groups along the way. We identified experts, so physicians, psychologists. We worked with patients, older adults with both pain and depression. Then I worked with other leaders in the field, really developing Motivate with an eye for implementation.

We conducted semi-structured interviews using an implementation framework and really targeted the questions in each interview based on our stakeholder group. When I interviewed patients, I really wanted to understand, is the content that we're presenting to you relevant and understandable? With experts, I wanted to make sure that the outcomes that we're evaluating are most relevant at the appropriate time. In the next phase of developing Motivate, we wanted to do a single-arm rollout. We just wanted to hire the coaches, train them, and then recruit patients and roll the intervention out to know that we can do this and the processes work smoothly. We included men and women over the age of 65. We were targeting low back pain for the last three months, not the occasional ache and pain, but truly back pain that interferes with their activities.

We also recruited patients with a threshold of depressive symptoms, of a PHQ-9 of greater than 10. I wanted to make sure that these individuals are capable of participating in a home-based physical activity program. This is so important for me as the PI, knowing that our patients can move through an intervention safely, and we have safeguards to make sure that they are safe throughout. We excluded individuals without a telephone or uncorrected hearing or visual impairment, with moderate to severe cognitive impairment. If they were dependent on a wheelchair and were not able to ambulate, we also excluded these individuals. All of these exclusion criteria were carefully thought through from the perspective of safety. If a patient had very severe psychiatric illness, we really encouraged them to pursue evidence-based management rather than this behavioral program.

The outcomes of this Phase 2 included feasibility. Can we recruit? Can we carry out the intervention? We mailed out pedometers to the patient. Can they use the pedometer and capture

steps? Other outcomes of interest for me are pain interference, physical function, and depressive symptoms. I won't belabor this point on secondary outcomes, but I think it's really critical for anyone who is pursuing research in pain and aging to consider other outcomes that are most relevant to this population. It's not just pain and depression. We're talking about self-efficacy. We're thinking about social isolation and social functioning and other aspects of quality of life, including sleep. We're thinking about psychological resilience. There's a lot of other secondary outcomes that I'm measuring with interventions like this.

This is a schematic that shows how the intervention rolls out. The health coach works with a patient over the 1-8 sessions, and in the background, we have a research team assessing these outcomes over time. Mr. L, how is he doing in the course of Motivate? What is his progress to date? He identified the following values. He values being a good grandfather and being physically present. He linked the goals of taking his grandson to soccer twice a week and then inviting him to his home on Sundays to walk and watch him practice soccer. With that, his steps increased from 700 a day to over 3,000 a day. He also values cultivating friendships, connecting with nature, spirituality, and religion.

We've linked several of these goals and physical activity-based goals to the values listed here. The outcomes that did improve are step counts, readiness to change, depression, self-efficacy, disability, and social isolation. My question was always, will he sustain these behaviors once our program is done? Really, one of the core features of Motivate is that our coach encourages our participants to engage in his social circle. So identifying the grandson, identifying friends from his church circle to work with. These are the ways that we can sustain and promote behavioral change over the long term. In Phase 3, we conducted a pilot trial to assess feasibility. Now we're looking at comparing Motivate against a control group. Here we recruit participants, we randomize them to either the comparator arm or the Motivate arm, and then we assess outcomes during and then at different time points after.

We enrolled 50 subjects for this initial trial. Recruitment rate was about 11%, which is typical for this patient population. Several reasons for screening out were great for the patient, maybe difficult for our research team, but it's great when patients don't meet that depression threshold. Some were too active, and many had multiple comorbidities and were not able to devote the time to this intervention. These are our baseline characteristics. Our average age was 71 years old. The data I'm presenting here are from a VA in Dallas. We have 80% men, 20% women, a very diverse sample with 50% white, 42% African American. Many of them lived about 30 miles away from the local facility, so it's wonderful that we could deliver this over the telephone.

They never had to come in. All of them had moderate pain, moderate depression, moderate to severe depression, and disability. This intervention was feasible. The pedometer was easy to use. Step counts improved. The patients engaged wonderfully with our coaches, and we were able to deliver the intervention as intended. I'm going to present some very preliminary results. These are just trends. We were not powered to look for statistical significance, but I just want to highlight some of the trends and outcomes. PEG-3 is a pain interference outcome that is, I think, very useful when we're doing pain research. It's not just the numerical rating scale, how severe is your pain, but we're asking here, how does pain interfere with different aspects of your life?

Here we see the PEG-3 in the top left upper quadrant, and in blue, we have Motivate. In orange, we have the control group, and you see that they start roughly at the same PEG-3 score, and you see that the PEG-3 score improves more relative to the control group at the end assessment. You see a similar trend in the depressive symptoms score, PHQ-9, where the Motivate, the active arm, improves more so than the control arm. You see the same trend with disability, with the Roland Morris Disability, as well as the PROMIS physical function. As I mentioned before, I'm also interested in self-efficacy, in psychological resilience, in pain stage of change, in social isolation, and sleep. All of these scores improved in the same direction for Motivate.

This was all very promising data, and based on these preliminary results, our team applied for the next stage of evaluation. We are currently actually recruiting for the large-scale randomized

control trial. This is a fully powered trial, a hybrid Type 1 effectiveness implementation trial, where we're recruiting 260 patients in Dallas and Houston. We now expanded from back pain to all musculoskeletal pain, and we continue to evaluate depressive symptoms. I asked the question, "Can we capture steps, pain, and mood using technology?" We're in the process of developing that. We're also evaluating what works well and what doesn't work as well in an implementation process aim. Then lastly, we're doing a budget impact analysis.

Based on the pilot trial, we now have a very pretty table that highlights all of the outcomes we're interested in evaluating, many of which we've already discussed. I just want to highlight a couple of pages from our intervention manual, where we emphasize social support and sustainability. I think it's really important for this group especially, when we change a behavior, especially if we try to enhance physical activity, how can we sustain that over time? I think it's really important to engage someone in your home environment, in your community, whether it's a significant other or spouse, whether it's family, whether it's caregivers, friends, someone in your community. Identifying those individuals really helps us sustain behavior over time.

As I mentioned, I'm very careful about safety. One thing that we've learned in pain research, in physical activity research, in research that involves older adults, when we ask patients to move more, we're also at higher risk for falls. So that's something that I really emphasize with my patients, importance of fall prevention and just really being mindful of increasing mobility in a safe way. Because we're recruiting a population that has depressive symptoms, we also have very strict protocols around suicide assessment and screening. This is one of my last slides here. I just want to emphasize one of the most gratifying aspects of doing this kind of research is the continuous partnership with patients as we develop an intervention with and for older adults.

At every stage of development, and even now as we're scaling up, I'm seeking input from our older adults with pain and depression to understand what works and doesn't work. At each stage, we iteratively refine our protocols and processes so that ultimately the end user is more satisfied. If you take home points why this work matters, I hope we've discussed during this last hour, older adults living with chronic pain are at increased risk for disability, falls, depression, and social isolation. Patients consistently ask for alternatives to opioids and invasive procedures. MOTIVATE was designed to provide a scalable evidence-based behavioral support that improves mobility and quality of life. This work has the potential to expand access to age friendly care nationally through telehealth and implementation science.

A few more take home points. Pain and depression are deeply interconnected. What I tell my patients is that I can't really treat the pain if the depression or anxiety is not acknowledged and optimized. We really need to think about how to address these together. Mobility is one of the strongest predictors of independence and healthy aging. It's been a real gratifying experience trying to link pain, depression, mobility among older adults with this MOTIVATE intervention. Small, meaningful increases in movement can produce clinically significant improvements. What I tell my patients is really to celebrate the small wins. Behavioral coaching can empower older adults to reconnect with valued activities and relationships. I think we've learned a tremendous amount about how individualizing the goals to what the patient values is truly most meaningful and has the most hope of actually making and sustaining behavioral change.

Then finally, scalable nonpharmacologic interventions are essential for the future of healthy aging. I really think it's an incredibly important part of the biopsychosocial approach to managing pain and depression in this population. I hope this is just one example of something that we can scale up. With that, I want to thank you for your time. I've listed my emails. I'm always happy to answer questions.

Danielle Glorioso: Thank you so much, Dr. Makris, for such an amazing talk. That was fantastic. A reminder that this is an opportunity to be able to ask questions directly to Dr. Makris. Dr. Makris, let's kick it off. Here's our first question, and I don't want to botch the pronunciation, so I might need a little bit of your help here. Are there specialists with particular expertise in Ehlers-Danlos syndrome hypermobility, especially in older adults experiencing chronic pain? I could have botched the pronunciation of that. Do you know what that means.

Una E. Makris, M.D., M.Sc.: You pronounced it perfectly. Ehlers-Danlos syndrome and hypermobility. The Ehlers-Danlos is a connective tissue disorder. It's a genetic disorder and it's interesting. It depends where you're located. Sometimes physical medicine and rehabilitation takes care of Ehlers-Danlos. Often, you want to see a PMR physical medicine and rehab specialists in addition to a geneticist. Many rheumatologists do not see Ehlers-Danlos. Then hypermobility is yet another condition. You can have hypermobility with Ehlers-Danlos, which is a connective tissue disease, or you can have hypermobility independent of Ehlers-Danlos. Again, it all depends on function and what are your functional goals? What I suggest and what I typically see is if you can connect with a trusted physical therapist and a PMR specialist to help you achieve your goals, that's the most effective.

Danielle Glorioso: That makes sense. Thank you very much for that. Do you have any special recommendations for someone who has Stage 4 Parkinson's?

Una E. Makris, M.D., M.Sc.: That's a great question. I think always in conjunction with your neurologist and possibly geriatrician. I think the question as it pertains to this particular talk is, how can we get a stage for Parkinson's individual out there and more mobile, especially if they're experiencing pain and depression. Very common. I think that the key is to do this safely and try to reduce the risk of falls. A lot of my patients who do have Parkinson's and pain and depression, they tend to have a lot of falls. How do we enhance physical activity as safely as possible. I will just put a plug for mobility devices. I think it's really important to walk safely with a mobility device and get out there and move, but don't overdo it which sounds like common sense.

Danielle Glorioso: No, but that's helpful. Thank you. Again, watch out for my pronunciation here. Do you differentiate between types of pain, for example, neuropathic or nociplastic or mainly focus on MSK pain with known etiologies?

Una E. Makris, M.D., M.Sc.: That's a great question. I think the question really is, and I'll just try to summarize that and maybe reframe it a little bit if I may. There are many different types of pain. The three large categories of etiologies of types of pain, you have neuropathic pain, which can sometimes be the burning, sharp shooting pain. We think of that like with diabetic neuropathy. We have nociplastic pain, which we sometimes think of as fibromyalgia and centralized pain. Then we have nociceptive pain, which we sometimes think of as osteoarthritis or inflammatory arthritis, rheumatoid arthritis. I do try to understand the etiology and I ask always where is the pain coming from? Because the way we approach the pain often will differ.

I do try to differentiate the pain, but at the end of the day, many patients will have a combination of different types of pain. That's where my job as a rheumatologist is this inflammatory arthritis from gout, which is crystal arthritis? Is it from rheumatoid arthritis? Is it from osteoarthritis? Then in the background, you have neuropathic pain from diabetes. There's so many different types of pain. At the end of the day, we want to understand that and target what's targetable but then also encourage physical activity regardless.

Danielle Glorioso: That makes sense. Calcific tendonitis, what's the mechanism of action? Are there dietary or supplemental approaches for redirecting the out of sync homeostatic mechanism of tendon health BMD?

Una E. Makris, M.D., M.Sc.: That's also a good question. A little different, but a lot of my patients do have calcific tendonitis, and it's a little unclear sometimes what causes it, whether there was a prior injury that predisposes someone to the pain related to calcific tendonitis. I'm not aware of specific diets that can modify this. Again, my go-to is referring to physical therapy. Sometimes we do injections, corticosteroid injections.

Danielle Glorioso: Here's another question on neuropathy. I bet you see a lot of people with neuropathy. Do you have recommendations for treating neuropathy when doctors keep prescribing medications for pain and symptoms versus finding and treating the root cause?

Una E. Makris, M.D., M.Sc.: Neuropathic pain is incredibly challenging. There's no question, and it is helpful to know is it related to diabetes? Is it related to impingement? Again, the approach to treating impingement is very different than diabetic neuropathy. If it's impingement and let's say you have radicular pain radiates down your arm and there's something that could be released surgically, we certainly try that. I just want to emphasize the importance of movement and physical activity and finding a trusted physical therapy. Your physicians might be attempting and trialing different medications, but I would absolutely continue to work with PT for for several reasons to maintain range of motion and mobility, strength. By doing so, you actually protect the surrounding joints and areas.

Danielle Glorioso: Sometimes it's difficult to promote physical activity when patients have quite a lot of pain related to osteoarthritis. How do you navigate that?

Una E. Makris, M.D., M.Sc.: This is a catch 22, something that I see often in my clinic. Doc, you're asking me to be more active, but I have so much pain, and so it's a vicious cycle and then you have less physical activity, maybe some weight gain. I think it's a very common and challenging situation. Engaging with your primary care doctor, whoever that may be, whether it's in geriatrics or in family medicine or general medicine, engaging with PT, what I usually like to do is get to the point where we can use topicals, topical diclofenac or Voltaren gel. Maybe we've done some intra-articular steroid injections, something to relieve the acute pain and allow the person to engage just a little in physical activity.

When you start engaging even a little in physical activity, you see the benefits and it starts to spiral in a positive direction. Then actually more physical activity, better sleep, slightly less pain. I think the message here is that in nearly all situations, physical activity is encouraged. We don't want you to be laying in bed.

Danielle Glorioso: Speaking of that, are physical therapists included on the MOTIVATE team?

Una E. Makris, M.D., M.Sc.: We don't have physical therapists. Our coaches are not physical therapists. They certainly could be, but physical therapists are really tough to find sometimes. They would be ideal. I will say that maybe MOTIVATE as a program is something that physical therapists could learn as part of their approach to pain and depression in older adults in addition to what they have in their toolbox already.

Danielle Glorioso: That makes sense. Speaking about coaches, what type of training do your coaches have and who else can serve as a coach?

Una E. Makris, M.D., M.Sc.: That's a great question. My sense is, the coaches in MOTIVATE all had an interest in pain and depression and had a particular fondness for older adults. I hired them, so that was my prerequisite. I will say they had a specific training in motivational interviewing. I will say I have worked with psychiatrists, psychologists, and then research staff and my sense if an individual has a genuine interest in getting to know the older adult and what they value and helping them get more mobile, that's what it takes, along with some formal training in the intervention itself.

Danielle Glorioso: That makes sense. Another question here. What are the next steps for your program and where would you like it to go? Are there plans to get this into the community?

Una E. Makris, M.D., M.Sc.: That would be a dream. Right now I'm in the process of finishing up our fully powered trial. We'll see what the outcomes show, but we are doing a budget impact analysis so we can take it to leadership to hopefully scale up to every facility. When I'm thinking of the VA, this would be to every VA facility. But I think a program like MOTIVATE could work beautifully in the community if there's a champion, even at a YMCA, JCC, at a community organization. I would love to chat more if anyone has ideas of where this might fit in their local community.

Danielle Glorioso: That's great. I think that would mean the more people you can impact, the better, right?

Una E. Makris, M.D., M.Sc.: Yes.

Danielle Glorioso: Another question, what are your thoughts about chiropractors? Is it safe or effective for chronic pain?

Una E. Makris, M.D., M.Sc.: I think it really depends what kind of chronic pain. I work in research with quite a few chiropractors, and I think realignment does seem to help quite a few people. I pause as a rheumatologist when I have autoimmune inflammatory spine conditions. I certainly pause if there's osteoporosis. I'm always worried about potential complications. I would just always ask your primary care provider about safety regarding a chiropractic referral.

Danielle Glorioso: That makes sense too. Will you add a dietary component to MOTIVATE? What are your thoughts on that?

Una E. Makris, M.D., M.Sc.: It's such a good question because truly lifestyle changes and behavioral changes are not just physical activity, it is often nutrition and what we fuel ourselves with. Perhaps we could discuss a broader intervention, a multi-component intervention that targets both physical activity and diet. We're learning a lot more about anti-inflammatory diets. Certainly that's something that we could discuss. It's not currently part of MOTIVATE.

Danielle Glorioso: With that, we've gotten to all of our questions for today. Dr. Makris, I want to thank you for an amazing talk and just honor the work that you're doing. It's so meaningful and impactful. We're really lucky that you have decided to move to San Diego and be part of the VA and UCSD here. With that, I'd like to thank everybody for attending today. If you'd like to learn more about the work we do at the Stein Institute, you can find us at aging.ucsd.edu. If you'd like to support our campaign, you can find it there as well. With that, thanks everybody for being here today. Again, thank you, Dr. Makris, for your time and effort that you put into today. It was great to have you.

Una E. Makris, M.D., M.Sc.: Thank you so much.