SPOTLIGHT EXPERT ROUNDTABLE

Chronic Low Back Pain

Moderated by David Rakel, MD

Discussants: Hollis King, DO, PhD; Michael Kurisu, DO; Howard Schubiner, MD

DR. RAKEL: My name is David Rakel. I am the Director of the Integrative Medicine Program at the University of Wisconsin, Department of Family Medicine, at the University of Wisconsin School of Medicine and Public Health. I'm an associate professor here in Madison, Wisconsin. I'm joined by friends and colleagues who have particular expertise in myofascial health and particularly, low back pain.

Michael Kurisu is at the University of California San Diego Health System where he's a faculty member in the Department of Family Medicine. He also teaches at a number of osteopathic medical schools across the country, has a particular interest in osteopathic manual therapy as well as prevention of musculoskeletal injury, and works closely with our colleagues in physical therapy. Hollis King, DO and PhD, is a fellow of the American Academy of Osteopathy, Program Director of Osteopathic Residency Education, and Professor in the Department of Family Medicine at the University of Wisconsin School of Medicine and Public Health. Howard Schubiner is the Director of the Mind-Body Medicine Center in the Department of Internal Medicine at Providence Hospital in Southfield, Michigan, and is a Clinical Professor at Wayne State University.

Chronic low back pain is among the most common patient complaints. Its prevalence and impact have spawned a rapidly expanding range of tests and treatments. Some of these have become widely used for indications that are not well validated, leading to uncertainty about efficacy and safety, increasing complication rates, and marketing abuses. Recent studies document a 629% increase in Medicare expenditures for epidural steroid injections, a 423% increase in expenditures for opioids for lower back pain, a 307% increase in the number of lumbar magnetic resonance images among Medicare beneficiaries, and a 220% increase in spinal fusion surgery rates. The limited studies available suggest that these increases have not been accompanied by population-level improvements in patient outcomes or disability rates. We suggest a need for a better understanding of the basic science of pain mechanisms, more rigorous and independent trials of many treatments, a stronger regulatory stance toward approval and postmarketing surveillance of new drugs and devices for chronic pain, and a chronic disease model for managing chronic back pain.1

Despite this increase in investment, we have not seen a significant reduction in morbidity of low back pain.1

When we refer to integrative medicine, what we're actually talking about is combining the therapies that work best to understand how humans heal within complex systems. Low back pain is a perfect example of how complexity based on biopsychosocial-spiritual influences can influence...
Low back pain is a perfect example of how complexity based on biopsychosocial-spiritual influences can influence the severity of pain as well as suffering.

David Rakel

With this goal in mind, the National Institute of Clinical Excellence in England released their guidelines for low back pain that were published in the British Medical Journal. They summarized those therapies that had the best evidence for yielding beneficial effects.

The therapies that had the most benefit with the least potential for harm were physical therapy but not traction, exercise, mind/body influences including psychology, acupuncture, and surgery when indicated, particularly for severe radicular pain. That’s almost a different diagnosis when you have severe radicular pain. We will focus more on low back pain and chronic low back pain, without significant radicular symptoms. The guidelines also supported nonsteroidal anti-inflammatory drugs.

Two things that the guidelines did not support in this evidence-based review were epidural steroids and opioids. We use opioids a lot, but the research shows that maybe we shouldn’t do so. The Danish health and morbidity study of more than 10,000 patients who were treated with opioids for noncancer pain showed that the patients did not meet any of the 3 outcome measures associated with pain management. Surprisingly, opioids did not result in improved function, improved quality of life, or a reduction in pain.

When we talk about how to deal with these different aspects of pain, we’d like to use the expertise of our panel to focus on 3 main therapeutic areas. We will use a 3-legged stool model to highlight each of these 3 therapeutic areas. The first leg is the external or physical parts of low back pain, including structure and mechanics. The second leg is the internal or emotional aspect, i.e., the importance of stress and emotions on why that pain might be persisting. The third leg of the stool is reconditioning. How can we get the body to be strong and supportive? How can we work with our colleagues to create these interdisciplinary teams to yield better outcomes, particularly as accountable care organizations become more popular with regard to improving outcome measures for low back pain? What professionals would we want to work with for the best outcome?

Dr. King, I’d like to start with you. You could talk about exploring the external and the physical piece. You have particular expertise in osteopathic manual therapy as well as research in this area. Would you mind sharing some of your insights with regard to manual therapy and the treatment of this condition?

DR. KING: In the present medical research context of needing to have your work be well justified by evidence-based medicine research, all the professions who use their hands in health care have been striving to generate acceptable research. At present, the chiropractic profession is probably the one that has produced the most practical research on spinal manipulation. The osteopathic profession has followed suit pretty well too. That’s where I have personally been involved in the research.

For instance, with chronic low back pain, this is one of the subjects where we actually have state-of-the-art evidence-based research. A systematic review and meta-analysis that was conducted by Licciardone et al and published in 2005, which is a Cochrane review level of evidence, describes all the necessary meta-analysis aspects indicating that osteopathic manipulative treatment (OMT) significantly reduces low back pain. From the osteopathic perspective, OMT is delivered to patients with the diagnoses of somatic dysfunction or malalignment of the vertebral column, as well as malalignment of the appendicular skeleton for upper and lower extremities. In this case, we’re talking about the low back.

We now have state-of-the-art evidence of the benefit of OMT for low
back pain. This evidence has been established in practice guidelines published by the Agency for Healthcare Research and Quality. These guidelines indicate where OMT should be utilized in the treatment of chronic low back pain. This is in the context of conventional medical treatment of chronic low back pain, where essentially the guidelines say that OMT should be used. The administration of OMT typically occurs as a part of an outpatient visit, for either musculoskeletal pain or even for a sore throat, or the physician may have a day in his clinic schedule when all that is done is OMT—an OMT clinic if you will; this is my style of doing OMT. For a sore throat, OMT can quickly be done to enhance lymphatic drainage and augment the healing process and even help any prescribed medication get to the infected area through improved circulation.

We have reached this level of medical research. The outcome is that, in my experience at least, there is very little resistance on the part of third-party carriers including Medicare to reimburse people for the delivery of OMT wherein the diagnosis is low back pain and particularly, chronic low back pain. This has been very helpful because the reimbursement element is critical in order to provide this service.

There are several other research initiatives, one of which was undertaken by Licciardone et al, in which OMT for 488 subjects was compared for chronic low back pain by using ultrasound. I was a treatment provider in that study, the results of which support the meta-analysis discussed above. The first publication derived from this study reports a subgroup analysis that assesses cytokine production after OMT. The results were that the cytokine interleukin 6 was correlated with back pain severity.

From the research side, we are gradually—certainly between the osteopathic and the chiropractic professions—generating the evidence that spinal manipulation, the hands-on work, is of definite benefit in the care of patients who have been diagnosed with chronic low back pain.

DR. RAKEL: You mentioned about reimbursement, which can be a significant barrier. There’s a study I just reviewed in the journal Spine that looked at what the patients perceived as most helpful for their low back pain. The number one response was massage. Number two was chiropractic therapy and OMT, and the last was conventional medicine. Unfortunately, massage isn’t covered by most reimbursement plans and acupuncture, included in the National Institute for Health and Care Excellence (NICE) guidelines, is also not covered. When you look at the cost-benefit of acupuncture versus epidural steroids, there’s a tremendous difference favoring acupuncture.

So what you’re saying, Dr. King, is that this research is going to support the reimbursement for manual therapy whether that be OMT or chiropractic therapy?

DR. KING: Yes.

DR. RAKEL: Is that happening now? Isn’t OMT covered by most insurances?

DR. KING: It is. In the osteopathic professional societies that I belong to, these issues come up; for example, a certain third-party carrier would deny reimbursement for OMT services. We have been increasingly successful in educating the third-party carriers that there is a scientifically demonstrated benefit for manual medicine and manual therapy. This reimbursement advocacy based on evidenced-based research is an important element in making sure that it is readily available. If the third-party carriers accept the benefits of OMT, it will help research go forward. I’m just amazed that the interested companies don’t read the scientific literature; they seem to make us prove points. When the professional organizations have the opportunity to show them the evidence, the insurance companies say, “Well, yes, I guess we’ll have to reimburse it.”

The other element that I observed when I was in practice in San Diego and now in Madison, Wisconsin, is that if the patients who have benefited request that their coverage for OMT be increased, the insurance companies, especially the

"There is very little resistance on the part of third-party carriers including Medicare to reimburse people for the delivery of OMT wherein the diagnosis is low back pain and particularly, chronic low back pain.”

Hollis King
health maintenance organizations, respond and increase coverage, as the trend is for patient improvement and overall less insurance company payments for certain musculoskeletal conditions. Therefore, patient advocacy has helped, in my experience, in receiving sufficient reimbursement for the delivery of hands-on applications in health care.

DR. RAKEL: As we transition into our next topic with Dr. Schubiner, Dr. King, I know you have, as they say in the business, good hands. In your care of patients, it’s much more than just manipulation. Would you mind just touching quickly on that? You do more than just manipulation. In your delivery of care with your hands on the patient, what do you think makes the biggest difference in your ability to influence their outcomes?

DR. KING: I talk to the patient while I’m doing a 20- to 25-minute OMT service, about their life. Often, to a patient complaining of low back pain, I’ll ask, “Who’s the pain in your back?” Sometimes I refer to anatomy below the low back, but it gets the patient to think about their pain and talk about it, thus establishing a more direct mind-body connection.

My experience from body-mind-spirit integrative medicine is that if I’m able to address where the somatic dysfunction, that is, the malalignment, is, I associate it with the mental, emotional, and psychosocial components that the patient almost cannot resist. It’s what comes to their mind when I say, “Okay, who’s the pain in your rear?” They then start talking about some event or some situation, and you can feel the tissues of the low back respond even better when their mind is engaged in the full component of the true causes of the pain.

Sometimes, the key element in the benefit of the OMT is just re-living the incident itself—the injury, the fall, and the strain—and they go back to that moment of impact. You may be able to remind the person of the injury time that they may have forgotten about, sometimes on purpose. Just by undergoing the mental process of remembering the fear and the anger of falling or straining, they can remember the “injury,” “Oh darn, that hurts now.” If you take them back to the time of the initiation of the injury in the treatment of musculoskeletal malalignment, you do get a more effective, successful treatment, if you’re able to combine the mental and emotional as well as the physical aspects at the same time during the treatment.

So, yes, I go out of my way to do that. I think it really establishes a strong doctor-patient relationship when you have that kind of time, that 20- to 25-minute dialogue. The patients appreciate that you’re taking the time to do it, that you’re not only talking to them but you are touching them.

DR. RAKEL: That is a beautiful segue way to iterate the importance of the complexity of human beings with conditions such as low back pain. Dr. Schubiner has conducted research in this area and has developed patient resources.11 So, Dr. Schubiner, would you mind sharing some of your insights about how you might encourage us to explore this mind-body connection in our everyday practice of this common condition?

DR. SCHUBINER: There are 3 areas that I thought I could talk about. First, there is some cutting-edge neuroscience on the relationship between emotions and pain.

First, there’s some data on mind/body approaches to chronic pain, musculoskeletal pain, and fibromyalgia. And finally, I will briefly discuss how I approach this problem.

Second, there’s some data on mind/body approaches to chronic pain, musculoskeletal pain, and fibromyalgia. And finally, I will briefly discuss how I approach this problem.

Ethan Kross at the University of Michigan has shown that creating physical pain causes activation of the same pathways in the brain, i.e., the so-called pain pathways, that are activated by causing someone
Chronic Low Back Pain • Rakel

In my practice, I try to help determine if each patient has primarily a tissue-damage problem or, what I would call, a nerve-pathway problem. A nerve pathway consists of the connection of millions of neurons in the brain that have been trained to create some reaction in the body, such as pathways of how to talk, walk, sign one’s name, ride a bicycle, or swing a golf club. A recent realization is that nerve pathways can be causes of pain. If one has a nerve pathway problem, the pain, of course, is very real and often is as severe, or even more severe, as a tissue-damage-related pain. We have discovered that nerve pathway pain, whether it’s diagnosed as fibromyalgia, neck or back pain, headache, or any other painful condition in the body, can be dramatically reduced or even eliminated. The bottom line is that the majority of people with these painful conditions do not have ongoing tissue injury but have nerve pathway-related pain.

In brief, let me describe the approach that I have taken to reversing pain from nerve pathway-related conditions. First, I rule out a structural process such as a tumor, fracture, infection, or condition that causes clear evidence of nerve compression (ie, an abnormal neurologic examination). The program involves the following: (1) educate patients that they do not have tissue damage and that they can get better; (2) teach them to take control of the pain by removing the fear of pain and literally “telling the pain to go away” along with meditative and visualization techniques; (3) process past and current life stressors emotionally (using a therapy known as intensive short-term dynamic psychotherapy); and (4) help them make positive changes in their life. We have conducted research to evaluate this model in patients with fibromyalgia and those with back and neck pain. The data are encouraging and show large effect sizes of approximately 1.1 to 1.4.

After a relatively brief 4-week intervention, approximately 50% of patients have more than a 50% reduction in pain at a 6-month follow-up assessment, which is obviously a very dramatic reduction in pain. The key to these results is in helping patients understand that they have a nerve-pathway problem as opposed to a tissue-damage problem and empower them to believe that they can actually overcome the pain. We offer them behavioral strategies to help them eliminate the pain and, most importantly, work on the emotions, as Dr. King was discussing. I’ve been using very specific techniques, such as intensive short-term dynamic psychotherapy, for dealing with emotions such as anger, guilt, fear, and sadness or grief to help people express and release the emotions that, from my point of view, comprise the underlying cause of the origin and perpetuation of nerve pathway pain.

DR. RAKEL: At least in my experience of working with patients, that...
can be quite a powerful combination. I always ask why the pain has a tendency to reoccur after they get temporary relief from an adjustment, a massage, acupuncture treatment, or an epidural injection. It seems like part of the reason that the pain might come back is that we’re not addressing some of the other emotional aspects that may perpetuate that dysfunction.

DR. SCHUBINER: As I mentioned earlier, it’s been shown that emotional factors can cause significant muscle spasm, which can then, of course, create malalignments. So, treating the malalignment is important, but it is often necessary to identify the root cause. Studies have shown that patients with low back pain undergo a process known as “central sensitization,”21 as do patients with fibromyalgia.

When we look carefully at the new research on central sensitization, we’re beginning to realize that chronic pain is primarily a disorder of the brain, and not a disorder of the body.

DR. RAKEL: Our patients have visited Dr. King and Dr. Schubiner and are doing quite well, but they need to learn how to become empowered to understand what they can do to maintain this benefit over time. Dr. Kurisu, this is an area that interests you, and you have expertise in working to empower the patient and to work with some of our other colleagues to recondition the body and strengthen it to increase support. There’s been excellent research on yoga therapy for this as well as physical therapy.22–25

How can we sustain these benefits over time?

DR. KURISU: Well, one of the main questions I always get from patients is the question, “What can I do to prevent this from occurring? What are some of the things I can do at home?” From a primary care perspective for a provider examining a patient with low back pain, I believe that physical therapists or some manual therapists are some of the more underutilized people and referral sources that we have.

What I have done in my practice is to establish a very close network of people that I refer to: physical therapists, yoga therapists, massage therapists, etc. I also perform osteopathic manipulation. It is important for a provider to know all the therapists at a personal level to know what type of styles and techniques of therapy they will offer. It is important to remember that not all physical therapy is the same. Any provider should become educated about what type of exercises should be done for what specific condition. It’s one of those things that patients ask about when you demonstrate an exercise to them and you’re showing them how to do it.

Physical therapists excel at this because they have a lot of time to spend with the patient, while educating the patient about their condition. They also give the patients handouts listing different exercises and stretches for the patient to perform at home. I tend to call these handouts “homework.” I always tell the patient that the main trick is that you MUST do your homework because all of the research shows that you show improvement when you actually invest time and energy into your recovery.

Most of the patients that I’ve seen, and ones that I’ve talked to, enjoy the hands-on therapy. They enjoy the one-on-one attention they get from a provider who performs manual therapy. They enjoy that aspect a lot more than just taking a medicine that’s prescribed to them. So, I tell all my family medicine colleagues to try to think of writing a prescription for manual therapy (OMT, physical therapy, or chiropractic) instead of a prescription for medication or other interventions.

Therefore, if the prescription for physical therapy runs out, they might need a refill. Then, exactly as all providers do for medications, one can write a refill for that prescription of physical therapy. The physical aspect of chronic low back pain is just one part of the picture.

The emotional aspect is another part. We have a whole network of people to refer to in the mind/body area—psychologists, psychiatrists, and mind/body therapists—to help these patients deal with the chronicity of their pain. In addition, we attempt to empower ourselves as physicians to become more involved in the patient’s care plan. Too often, we see physicians treating low back pain with either just medications or physical therapy. However, you might not see the patient again for 6 to 8 weeks, and so much can happen in that time.

The sports medicine doctors do this very well, and they can actually write out a care plan for the patient. This goes along with the European guidelines for prevention of low back pain.26 These guidelines were released in 2004, and they group populations into 3 different groups. I’ve used a modified version of that. So, the first group is the general population dealing with low back pain, which includes the need for psychological
therapy, physical therapy, and exercises and stretches.

The second group is of workers, because some people are hurt on the job and they need a specific guideline for when to go back to work and some sort of limitations that they have to maintain at work. The third group is school-age children, but I expand on this to include athletes as well. Many athletes really want a plan of action for when they can get back to a certain level in their sport. Patients can then take this plan with them and take it to their coaches.

There is a lot of one-on-one intervention that goes on when patients are dealing with a chronic injury or chronic pain. I would recommend you always make sure that you’re extending out to that network of people that you refer to. I have weekly conversations with the psychologists as well as the physical therapist that we refer patients to, to make sure that we’re all on the same page and no one’s giving overlapping advice on any treatment.

DR. RAKEL: I’ve heard from each of you about the importance of some key areas. Number one is the relationship, as Dr. Kurisu said—the quarterback, who is someone to help guide and create a plan to communicate among these different professionals to make sure we’re not overlapping treatment.

Also, it is important to match the patient to the therapy that they feel will work best for them. We’re not going to send everybody to a yoga therapist. I might not send everybody to physical therapists. If we can best match the patient’s belief system to the most appropriate team member, we will likely get a better clinical response.

Dr. Kurisu, you said it’s important when you get to know them so you can best make that match. Everybody talked about time. Let me mention the importance of laying on hands and then using the art of manual therapy to help reduce pain and discomfort while also addressing the importance of the emotions and how internalized negative emotions might exacerbate or even trigger muscle spasm.

DR. SCHUBINER: One very important thing that I learned from you, Dr. Rakel, is that often, the majority of the therapeutic benefit results from the doctor-patient relationship. The most important ability a clinician has is the ability to listen, to take time with the patient, and to create an agreement between the doctor and the patient on defining the problem and deciding on the best form of therapy. So, I think you’re absolutely right in emphasizing that point.

DR. RAKEL: I think that’s an exciting point that you made very well, Dr. Schubiner. If I was to open a new low back pain clinic, we can change our intention from naming it the Chronic Low Back Pain Clinic to the Myofascial Health and Resiliency Clinic. That simple intention changes everything and helps the patient believe that they can get better.

DR. KING: I always appreciate it when a patient says that the work that I’ve done gives them hope. They have hope that they can get well. As soon as I hear a patient say that, I know that we’ve activated this part of their being that they need to utilize for their eventual resolution as to how “well” they can get. So, I experience an idea of what we do when giving the patient hope.

DR. SCHUBINER: I agree with that completely. Many times people will say, “Oh, you mean your
treatment is mind over matter." Actually, when you think about it, as I mentioned earlier, if chronic pain is a disorder of the brain and a central sensitization process, then really it’s “mind over mind,” and that’s clearly possible. People can change the way they approach things, they can change the way they conceptualize things, and they can change the way they respond.

For example, we know that pain causes fear. We also know that fear causes pain. This vicious cycle is responsible for a tremendous amount of suffering. The techniques that we’re talking about can interrupt that cycle and lead to healing.

DR. RAKEL: That’s supported by the research on neuroplasticity and how we can change the brain. I think the most important thing I can do is convey to the patient that I believe they can get over the pain. Sometimes, they need to hear that from their health care provider. That may not always be the case, as we have to be real and truthful. But, having someone believe in their healing potential is half the journey.

DR. KURISU: Just a comment on the hope that Dr. King was talking about. Many a times, these patients have bounced around from many different pain clinics and many different specialists. The model that was presented to them is just more medications or conventional surgeries. So, when they finally get that sense of hope or finally feel that sense of empowerment, the light bulb goes on and they feel like, “Oh well, I can control this. This pain is a part of me as much as I’m a part of it. I can take these steps to help prevent this from happening.”

DR. SCHUBINER: It’s not false hope. It’s the truth, and what I always tell my patients is that “the truth will set you free.”

DR. RAKEL: Any final words anyone?

DR. KING: We have not mentioned that word “spirit” in the body–mind–spirit dimension. I think we talked around it in the mental–emotional–psychosocial aspect. This is something that I think the doctor–patient relationship, and the uniqueness of that, addresses as a relationship of one being with another being. How we operationally define that for research, is something to be seen. For the sake of our discussion, I don’t think we can avoid matters of “the spirit” or the soul. I just wanted to mention that because I think it is embodied through the approach where you’re talking to your patient and you’re putting your hands on them as all of us in the manual medicine/manual therapy will do.

DR. SCHUBINER: There is neurological research being conducted on this topic.

When you activate social connectivity, you’re activating a sense of awe, and you’re activating the parts of the brain such as the dorsolateral prefrontal cortex that turn off the amygdala and the anterior cingulate cortex pathways that create pain. So, you’re absolutely right.

DR. RAKEL: Isn’t this a great opportunity for us to expand our strategies and research skills to look at the outcomes and the pragmatic controlled trials that ask us to determine what influences

**STUDIES DISCUSSED:**
Danish health and morbidity study, the OSTEOPATHIC Trial, the WEST study
Chronic Low Back Pain • Rakel

our quality of life the most? If we look at that bigger picture, we can’t help but bring up topics like meaning, belief, emotions, and spirituality. If we are going to create expertise to better understand how complex systems heal, we have to include these important ingredients.

REFERENCES

Rakel  •  Chronic Low Back Pain


Have a seat at our table: Comment on the discussion at www.TheMedicalRoundtable.com/comment