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NOVEMBER/DECEMBER 2014

Joel Stein, MD
Physiatrist-in-Chief and Chairman
Department of Rehabilitation and Regenerative Medicine
Simon Baruch Professor
js1165@cumc.columbia.edu
jos7021@med.cornell.edu

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A Rehabilitation Medicine Perspective on Pelvic Pain Syndrome

Approximately five to 10 percent of women in the United States will experience chronic pelvic pain in their lifetime; one in four women between the ages of 15 and 75 suffers from pelvic pain. Chronic pelvic pain, which is defined as greater than six months duration, is a major quality of life issue. It can make it difficult for a patient to sit for prolonged periods of time or have sexual intercourse.

Dr. Jaclyn H. Bonder

"It's the type of pain syndrome that patients don't like to talk about…it becomes this 'secret' that they live with," says **Jaclyn H. Bonder, MD**, Medical Director of Women's Health Rehabilitation at NewYork-Presbyterian/Weill Cornell Medical Center.

According to Dr. Bonder, pelvic pain, in general, is a very complicated syndrome. Although both men and women can develop pelvic pain from the umbilicus to the groin, it is much more prevalent in women. Pelvic pain can have multiple etiologies so the exact one is often unclear and challenging to define because a number of organ systems are situated in the region. Many patients first consult urologists, gynecologists, urogynecologists, and gastroenterologists before being referred to or finding their way to a physiatrist.

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Department of Rehabilitation Medicine Welcomes New Faculty Members

We are delighted to welcome four new faculty members, each with expertise that further strengthens the Department of Rehabilitation Medicine at NewYork-Presbyterian Hospital with new and important programs.

Dr. Alfred C. Gellhorn

Alfred C. Gellhorn, MD

In November 2014, **Alfred C. Gellhorn, MD**, a physiatrist specializing in sports medicine, joined the Department of Rehabilitation Medicine at NewYork-Presbyterian/Weill Cornell. In this role, Dr. Gellhorn, who is board certified in sports medicine and rehabilitation medicine and holds additional credentials in musculoskeletal sonography, treats a wide range of musculoskeletal, sports, and spine injuries, with a nonoperative, patient-centered approach that focuses on maximizing function and optimizing quality of life. His clinical interests include regenerative treatments of musculoskeletal injuries using therapies such as platelet-rich plasma, autologous blood, and stem cell injections.

"I came to this field through my own musculoskeletal injury during medical school," says Dr. Gellhorn, who received his MD degree from the University of Pennsylvania and completed his residency at the University of Washington in Seattle, with fellowship training in sports medicine and diagnostic musculoskeletal ultrasound. "I found that the

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A Rehabilitation Medicine Perspective on Pelvic Pain Syndrome *(continued from page 1)*

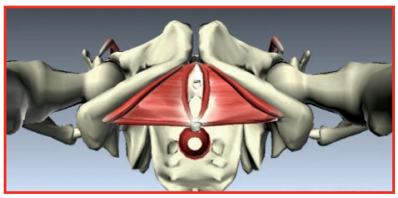
"In actuality," says Dr. Bonder, "many of these women have pelvic floor muscle pain as either the primary pain generator or secondary to visceral pathology or other musculoskeletal problems, such as lower back pain, groin pain, and hip pain from osteoarthritis. They may have pain in the perineal or vaginal area as a result of pelvic floor muscle tightness or dysfunction that is more somatic than visceral in origin."

Dr. Bonder notes that a number of patients develop this type of pain because they initially "guarded" against the pain of gynecologic pathology, such as an ovarian cyst or endometriosis by tensing their pelvic floor muscles. For other patients, the pelvic floor muscle pain appears after a vaginal yeast infection, urinary tract infection, or a prolonged episode of constipation or diarrhea. "Patients may also present with symptoms that are consistent with other comorbidities. These include perineal pain, dyspareunia, sexual dysfunction, urinary frequency and urgency, pain with and/or relief after a bowel movement, or voiding dysfunction," says Dr. Bonder. "There's also increasing evidence that hip problems or arthritis in the lower back can cause pain to radiate to the pelvic floor. In fact, over 50 percent of patients who have some sort of pelvic pain have comorbid pelvic musculoskeletal pain as well."

Case in Point

A 45-year-old woman presented to the Department of Rehabilitation Medicine with progressively worsening, but intermittent, radiating pain to her perineum and tailbone area. The pain increased with sexual intercourse and with her menstrual period, which had been less regular. It fluctuated in intensity – ranging from a 2 to 8 out of 10 – depending on how physically active she had been that day. She reported decreased productivity at work and strained marital relations. The patient was seen by a gynecologist with negative work-up. The patient was found to have osteoarthritis of the right hip, with spasm, stiffness, and myofascial tenderness of the hip and pelvic floor muscles. She was treated with a comprehensive physical therapy program, including myofascial release, muscle reeducation/biofeedback, posture evaluation and mechanics, joint and coccyx mobilization, strain-counterstrain, and stretching and strengthening exercises. Three months later, the patient has been able to discontinue her pain medication and has improved work and exercise capacity.

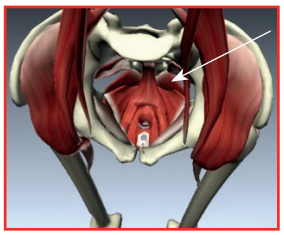
Superficial Pelvic Floor Muscles



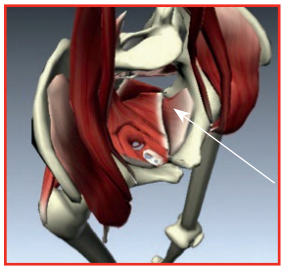
Superficial and deep transverse perineal; bulbocavernosus/spongiosus; ischiocavernosus; perineal body; and external anal sphincter

Source: BioDigital Human

Deeper Layer Pelvic Floor Muscles



Piriformis



Obturator internus

Source: BioDigital Human

Pelvic pain started to come under the umbrella of rehabilitation medicine when it became clear that – in addition to more visceral organ system pain – muscle and joint pathology were contributing to this disorder. "We now find that when the patient's gynecologist or gastroenterologist, for example, cannot determine the source of pelvic pain and are not sure how to treat it, they often refer the patient to a physiatrist," says Dr. Bonder. "It needs to be a multidisciplinary effort, so I often work with gynecologists, urogynecologists, urologists, gastroenterologists, and colorectal surgeons who treat pelvic pain conditions as well. Physiatry is an important component of the treatment team for many reasons, including our focus on the diagnosis and treatment of pain, as well as muscle weakness, dysfunction, and imbalance. And we can provide non-surgical methods to care for these patients' pain conditions."

The physiatrist's physical exam for a patient presenting with pelvic pain is extensive and may include:

- Musculoskeletal evaluation of one's gait, posture, spinal and pelvic alignment, and lower extremities
- Neurological examination using manual muscle testing and sensory and reflex testing
- Evaluations of the sacroiliac joint, hip joint, pubic symphysis, and abdominal muscles
- Musculoskeletal pelvic floor examination, vaginally and/or rectally

Findings may include:

- pelvic instability or obliquity
- bone and joint pain
- muscle tightness
- muscle spasm
- neuropathy
- muscle weakness
- trigger points
- referred pain: lumbar-sacral spine, gluteal region, hips

Newer radiology testing, including MR neurography, can help determine if there is any neuropathic pain present as a result of inflamed or entrapped pelvic nerves.

"When you treat pelvic floor muscle pain and muscle dysfunction, the pain can improve with modalities such as physical therapy, injections, pain medications, and muscle relaxants," says Dr. Bonder. "Our goal is to not only decrease the pain, but to improve muscle function and general mobility and restore quality of life. To achieve this, it is important to focus on the cause of dysfunction and not the pain itself, and on the whole person, not just the problem area."

For More Information
Dr. Jaclyn H. Bonder • jab9155@med.cornell.edu

Department of Rehabilitation Medicine Welcomes New Faculty Members *(continued from page 1)*

other providers I was seeing were not able to take into account the complete picture of my care. The physiatrists that I saw, however, put the whole function piece together. It was very appealing to me to take that broad view of the patient, rather than just a specific disease state or organ system."

Regenerative treatment for musculoskeletal injuries is a particular interest of Dr. Gellhorn, from both a clinical and research perspective. "I think minimally invasive regenerative treatments hold great promise for our field for disorders such as osteoarthritis and tendinopathy," he says. "But we need to actively focus on research in this area to better understand the complex cascade of signals that these powerful injected biologic agents are effecting. While the potential of healing these injuries using the body's own repair mechanisms is truly exciting, we also need excellent research to back up our clinical programs so we won't be forging ahead with an inadequate map."

The use of musculoskeletal ultrasound, Dr. Gellhorn believes, also plays a critical role in the practice of sports and rehabilitation medicine. "Ultrasound allows us to obtain a very detailed view of the soft tissues of the musculoskeletal system, especially as the technology has improved," he says. "We're finding that this is an amazing tool for point-of-care patient care. We're able to go one step beyond our typical physical exam at the time patients come into the office. We can examine them and ascertain a preliminary hypothesis about what's going on. But on that same day, with ultrasound we can evaluate dynamically what is occurring in real-time with the tissue, such as the rotator cuff of the shoulder. It's not only a great advantage for us as clinicians because we get the information we want right away, but also for the patient who won't need to return for an MRI or schedule more tests. In addition to its diagnostic utility, ultrasound also has great value in precisely targeting percutaneous or needle-based injection therapies."

In addition to his responsibilities at Weill Cornell, Dr. Gellhorn, along with Michael T. Sein, MD, is establishing a musculoskeletal and spine outpatient practice at NewYork-Presbyterian/Lower Manhattan Hospital.

Asked what drew him to NewYork-Presbyterian, Dr. Gellhorn explains: "This is such an exciting, dynamic, and collaborative place. There are translational opportunities for bringing regenerative medicine to the bedside. And I have the chance to work with amazing basic scientists and fantastic clinicians. The community of researchers and clinicians at NewYork-Presbyterian is unparalleled. My hope is to try to advance the field of regenerative medicine in the musculoskeletal arena."

Dr. Samuel Rosenberg

Samuel Rosenberg, DO

In September 2014, **Samuel Rosenberg, DO**, was appointed to oversee the new 40-bed NewYork-Presbyterian Subacute Inpatient Rehabilitation Unit at Hebrew Home in Riverdale, New York. Dr. Rosenberg, who joined the Department of Rehabilitation and Regenerative Medicine at NewYork-Presbyterian/Columbia in July, will now spend the majority of his time as the admitting and primary physician at the Hebrew Home, a member of the NewYork-Presbyterian Healthcare System and a highly regarded non-profit geriatric care organization offering the full continuum of senior care.

After earning his DO degree at Touro University College of Osteopathic Medicine, Dr. Rosenberg completed his postgraduate training in June 2014 at NYU-Rusk Institute of Rehabilitation Medicine, where he served as Chief Resident of the Bellevue Hospital Rehabilitation Service. His choice to practice in the field of rehabilitation medicine, he says, came from a desire to help patients return to their functional best. "In the inpatient setting, it's getting them home with a safe plan," says Dr. Rosenberg. "It's taking all of the hard work that's been put into these patients – sometimes years worth of hospitalizations and surgeries – and being able to help those patients get home and back to where they were. That is our ultimate goal."

According to Dr. Rosenberg, the new Subacute Inpatient Rehabilitation Unit at the Hebrew Home, just 10 minutes from the Columbia campus, fills an important need by providing medical supervision for patients during their rehabilitation after hospitalization.

"The patients admitted to the Subacute Inpatient Rehabilitation Unit have medical and surgical conditions, including neurological issues, cardiac issues, joint replacement, or multiple trauma," says Dr. Rosenberg. "Their acute hospitalization course has completed and the patient is stable, but now they have to recover – not only from the injury, but also from having been hospitalized. The challenge has been that the short-term or subacute rehabilitation facility does not offer the level of oversight these patients still require. In the past once these patients left the hospital they were completely out of the system."

The NewYork-Presbyterian Subacute Inpatient Rehabilitation Unit at Hebrew Home allows the patients that same continuity of care. "The Hebrew Home at Riverdale has the infrastructure in place to facilitate medical care at the level that we would like," says Dr. Rosenberg. "For example, they have an on-site laboratory where we can get lab results within a few hours. They also have on-site radiology and many of the conveniences typically found in hospitals and not in skilled nursing facilities."

The Hebrew Home electronic medical records system is also linked to Columbia. "This enables us to access patients' charts, lab results – all of their medical history, which is critical since some of these patients have very extensive medical issues," says Dr. Rosenberg.

If a patient does need to be readmitted to the hospital, Dr. Rosenberg is there to make that decision. "If there are issues that arise, the patient's doctor is at the facility daily and can assess the situation and determine whether that patient can be treated in the Hebrew Home or requires a readmission to the hospital," says Dr. Rosenberg. "Ultimately, one of our goals is to reduce preventable readmissions to the hospital. We want to stay ahead of preventable issues. The patients are improving and we want them to continue to improve."

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Department of Rehabilitation Medicine Welcomes New Faculty Members *(continued from page 3)*

Dr. Michael T. Sein

Michael T. Sein, MD

The Department of Rehabilitation Medicine at NewYork-Presbyterian/Weill Cornell welcomed **Michael T. Sein, MD**, to its faculty in September 2014. Dr. Sein earned his medical degree at the University of Maryland School of Medicine and completed his postgraduate training at Harvard Medical School's Department of Physical Medicine and Rehabilitation, where he served as Chief Resident. Dr. Sein went on to pursue a fellowship at the University of California Center for Pain Medicine in San Diego.

Dr. Sein's philosophy of care emphasizes helping patients to achieve their highest level of function. "This includes someone who has had a stroke and is now trying to learn to feed and clothe themselves again, or a highly competitive athlete who is learning to do competitive downhill skiing again after a sports injury," says Dr. Sein. "Rehabilitation medicine doesn't focus on why the disease occurred, but what we can do to move forward and get people back to what they love and need to do."

Dr. Sein employs a multidisciplinary approach to treat pain by integrating physical therapy and interventional pain management techniques, individualizing treatment plans with a focus on functional restoration. "We provide whatever form of therapy is best for that patient. It may involve a minimally invasive procedure, a prescription for physical therapy, or finding the right adaptive equipment to help them get around," says Dr. Sein.

As a pain management specialist, Dr. Sein seeks therapies that do not rely solely on the use of opioids. "The data has become clear that there are very real risks to chronic opioid use," he says. "We have to figure out what we can offer in their place. That's why I provide multimodal treatments and do not rely on one, single treatment. You have to create a multi-tiered approach that includes medication, rehabilitation therapy, and interventions in order to truly address pain."

According to Dr. Sein, advances in technology, particularly the use of musculoskeletal ultrasound, allow physicians to perform procedures at the bedside that have been limited before to the operating room or procedure suite. "We're now able to visualize nerves and blood vessels in a way that we couldn't do purely with fluoroscopy," he says. "As the ultrasound resolution continually improves, as well as its portability, so does our ability to intervene in a safe and effective manner. The advancements in technology that translate to patient care do not occur in a vacuum at a research facility; we're taking those advancements and putting them into action."

Dr. Sein, working with Alfred C. Gellhorn, MD, is also developing a musculoskeletal and spine outpatient practice at NewYork-Presbyterian/Lower Manhattan Hospital. "I am excited for the opportunities we have to positively impact the lives of the lower Manhattan and Brooklyn communities," he says.

Dr. Diane A. Thompson

Diane A. Thompson, MD, MS

For more than 20 years **Diane A. Thompson, MD, MS**, worked in varying capacities in healthcare – as a skin care specialist, registered nurse, an adjunct assistant professor of nursing, and a nurse practitioner – before earning her medical degree at the University of Maryland School of Medicine. Following her residency in Physical Medicine and Rehabilitation at NewYork-Presbyterian, Dr. Thompson joined the Inpatient Rehabilitation Unit at NewYork-Presbyterian/Columbia in August 2014 and is currently the Medical Director. She also oversees the outpatient Cardiopulmonary Rehabilitation Program at Columbia. It was the culmination of her lifelong dream of becoming a physician.

"As I child I suffered from asthma. I knew that I wanted to be a doctor after the interactions I had with my pediatrician," says Dr. Thompson. Medical school wasn't feasible at the time, and nursing gave Dr. Thompson the ability to enter healthcare and to interact with patients. "I loved my work, but I continued to think about attending medical school. Finally I got to a certain age when I realized that life should not be lived with regrets," she says.

During medical school she was attracted to neurology, but often wondered what happened after her patients were diagnosed with devastating neurological conditions. "It was then that I learned about the field of Physical Medicine and Rehabilitation, and I immediately fell in love with the specialty," says Dr. Thompson.

Dr. Thompson cares for patients in the hospital and follows them as outpatients where her focus is neuro-rehabilitation and spasticity management. "Many of my patients on the inpatient rehabilitation unit are diagnosed with stroke, brain tumor, multiple sclerosis, Parkinson's disease, or post-transplant," she says. She also provides medical oversight for the outpatient Cardiopulmonary Rehabilitation Program, "and I have the opportunity to provide education by teaching lifestyle modification."

In that same vein, Dr. Thompson writes a health column and speaks to community groups on a range of health issues, including obesity management, stress reduction, and stroke prevention and recognition. Asked to return numerous times to speak, she decided to widen her educational reach by hosting a radio show and podcast, *Health Talk with Dr. Diane MD*. "It's great to be able to share health information that has the potential to improve someone's health and life," she says. In an effort to continue promoting health to the larger public, Dr. Thompson was selected to join a cohort of 19 other scholars to participate in Columbia University's year-long 2015 Public Voices Fellowship Program.

Dr. Thompson envisions a long career at NewYork-Presbyterian. "I am fortunate to be in a great institution surrounded by supportive colleagues where I can expand my expertise and provide great care," she says.

Managing Back Pain During Pregnancy

"Pregnancy-related low back pain, pelvic girdle pain, and lumbopelvic pain are common and disabling conditions that have gained attention from the medical and scientific communities," says **Farah Hameed, MD**, a physiatrist board certified in both Physical Medicine and Rehabilitation and Sports Medicine in the Department of Rehabilitation and Regenerative Medicine at NewYork-Presbyterian/Columbia University Medical Center.

"Several changes occur in the body during pregnancy," says Dr. Hameed. "In addition to weight gain, there are changes related to anatomy, such as disruption of the core musculature; increased reliance on the muscles of the pelvic floor to bear the weight of the growing uterus; changes to the curvature of the spine; as well as hormonal changes that might be contributing to laxity of some of the ligaments that typically stabilize the pregnant woman's body."

According to Dr. Hameed, the majority of studies concur that 50 to 80 percent of pregnant patients will develop back pain at some point during their pregnancy. "It has been shown that many women consider back discomfort as an inevitable part of pregnancy and do not seek treatment from a healthcare professional," says Dr. Hameed. "Women who do require treatment usually present between their 18th and 22nd week – the time when hormonal changes are peaking and the weight gain is significantly increasing. Many women not only complain of pain, but also a significant decline in their level of function. That is when they are referred to me."

> **"We can generally manage patients conservatively for weakness or neurologic changes due to disc herniation, but we might recommend medications and/or a change in the method of delivery. In these situations, we work closely with obstetricians to determine the necessary diagnostic workup and treatment."**
>
> **— Dr. Farah Hameed**

Dr. Hameed notes that there are many approaches to treatment that can be recommended to patients during the second and third trimesters. Although there is no one rehabilitation program that suits every pregnant woman, the symptoms are usually managed by physical therapy – the first-line conservative treatment of pregnancy-related low back pain. This includes strengthening exercises based on each patient's fitness level with a focus on core and pelvic stabilization. In addition, maternity support belts and integrative therapies such as acupuncture will sometimes be recommended to help patients continue with their day-to-day activities. Some patients, she notes, come in later in their pregnancy when about to deliver. "At that point, it's about symptom control.

Dr. Farah Hameed

After delivery, the pain usually goes away. In fact, approximately 90 percent of patients feel much better within a few months of delivery and require no further treatment."

Some red flags, such as a lumbar disc herniation with significant pain and neurologic symptoms, or transient osteoporosis of pregnancy, which puts patients at risk for stress fractures, require special attention from physiatrists. "We can generally manage patients conservatively for weakness or neurologic changes due to disc herniation, but we might recommend medications and/or a change in the method of delivery," says Dr. Hameed. "In these situations, we work closely with obstetricians to determine the necessary diagnostic workup and treatment. We may, for example, recommend a C-section for someone with a lumbar disc herniation or for someone who may have a fracture or bony injury to decrease the risk of making the problem worse. We also might recommend changing the position of delivery to minimize stress on the body."

Dr. Hameed emphasizes that it is a team approach to caring for the pregnant patient, with the obstetrician at the center. "We come in as specialists," says Dr. Hameed. "There may also be consultations from orthopedics, for example, if their pain was to worsen or change. We also coordinate with radiology to determine the safest imaging approach and any imaging contraindications depending on how far along the patient is in her pregnancy. This is the case even for MRI, which doesn't really involve radiation exposure. Additionally, before we start a medication, we'll always let the OB know. We want to make sure that we are all agreed and consistent on our plan."

For More Information
Dr. Farah Hameed • fh2282@columbia.edu

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