

Diagnostics for PT

How Physical SUKYLV For Therapy
& Diagnostics
WILL Conquer the Opioid Crisis

Ultrasound in Orthopedic Practice

6th Annual Hands-On Diagnostics
Private Practive Summit

Built to THRIVER

Private Practice Success Story



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FROM THE **EDITOR**

The advancements towards dramatically better patient diag-▲ noses, treatment plans and outcomes in today's PT community astound me. I am over-the-moon that I can see with my own eyes the tear in my shoulder via MSKUS Ultrasound or the way my nerves, as shown via EMG, clearly point out a case of carpal tunnel syndrome. As much as I moan about the many ways technology has changed our lives with the constant beeps, bells, and interruptions, I have to admit when my PT uses Diagnostic tools I feel empowered – and relieved to know what is going on in my body.

This issue offers a glimpse into but a few of the 100,000 plus studies completed using MSKUS Ultrasound and EMG on patients by board certified PTs. Evidence based data doesn't lie, so be sure to read these ground-breaking pieces.

At the same time, we offer a feature story about the very meaningful and personal experience one doctor has discovered as he continues to employ Diagnostics with his patients. His surprising realization at how technology led him to a very human connection will inspire you.

Issue 4 includes a fantastic spotlight on one of the renowned top PT business experts in the U.S. and also a feature story that builds a case for the IMMEDIATE intervention of all PTs to step up and help stem the curse of Opioid addiction. As always, we would love to hear from you.

Let's start a PT movement – and save lives!



To learn more, contact me at JerseyTPress@gmail.com

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Diagnostics for PT

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FEATURE | COVER STORY

Opioids including Fentanyl are at epidemic levels across the U.S. with every state and every community impacted. More than 40 people every day die from overdoses involving Opioids and since 1999 the painkillers sold has increased 300 percent. A new report offers info on just how deadly Opioids are to children. Fentanyl can kill children even if they just come in extended contact with their skin. Since Fentanyl is about 50 times stronger than heroin, a deadly dose for adults is about the size of a small dab on the tip of your pinkie. In the years from 1999 to 2017, the CDC reports 700,000 people died from a drug overdose.

As the crisis deepens and more and more adults and children die, Dr. Dimitrios Kostopoulos of Hands-On Diagnostics in Astoria, Queens decided to speak out about the issue.



Every physical therapist is an expert on the musculoskeletal aspect of a patient as well as the nervous system of the body. As Physical Therapists we offer practical and powerful solutions to stem the Opioid epidemic

How Physical Therapy & Diagnostics WILL Conquer the Opioid Crisis

By Dr. Dimitrios Kostopoulos, DPT, MD, PHD, DSC, ECS



and its ongoing growth. What would happen if the public really understood that in many cases going to their physical therapist when they are in pain could:

- Deal with the source of their pain drug-free
- Treat the source of their injury or pain
- Avoid surgery
- Avoid drugs
- Participate in their own recovery
- Have their insurance pay

As doctors, we cannot just sit back and let this epidemic continue. We have a responsibility to care for people who are in pain, and if we can help anyone avoid taking pain medication that may lead them into becoming addicts, it is absolutely unacceptable for us to not speak out and act. The public has no idea that as physical therapists we can help stem the tide of this deadly crisis.

At Hands-On Diagnostics and our PT practices we not only employ traditional physical therapy techniques and advanced manual therapy techniques but also offer patients modern technology in the form of Diagnostic tools, which includes MSKUS Ultrasound and EMG. This new model for

physical therapy practices is now national and over 170 practices around the country are working with HODS to offer patients diagnostic tools which have been proven to offer 62 percent better patient outcomes. The addition of advanced diagnostic tools in physical therapy is resulting in extraordinary patient outcomes and care with the creation of treatment plans based not only on physical examinations but also on highly accurate diagnostic tests. This is a superior way to offer patients not only a deep understanding of their issues but also a drug-free treatment plan that helps ease their pain.

We work with MSKUS Ultrasound and EMG with appropriately screened patients who are in pain. Patients are empowered by seeing the source of their pain. Patients can see the various body structures under ultrasound imaging or understand their problem explained with numerical values during an EMG test.

Having a more accurate diagnosis for the cause of the problem, we design more effective treatment plans leading to better outcomes. Thus, we offer effective relief of pain without the use of drugs. As an Elite PT with Diagnostic Testing background, we can make a very big difference in the Opioid Crisis and we can also be proactive and help people avoid becoming an addict in the first place.

The global pharmaceuticals market was worth \$934.8 billion in 2017 and will reach \$1170 billion in 2021, growing at 5.8%, according to a recent pharma market research report by The Business Research Company. Our role as healers must take precedence over this multi-billion-dollar industry.

Our community does not always deal in dollars and cents, but instead in human hearts and minds. Yet this is our advantage.

In a recent HODS study 90% of patients who received EMG or ultrasound testing agreed, or strongly agreed, that they were better able to understand their problem; they agreed they were reassured about the problem and they agreed that they were better able to manage the problem with highly perceived value of the testing.

One way for all PTs and private practices to launch their own advocacy for helping stem the tide of this Opioid epidemic is to step up and embrace the new HODS model of PT: Diagnostics. I can promise

you that by adding Diagnostics to your practice you will achieve 62 percent better patient outcomes*; 10X or more profits; much higher insurance reimbursements and more free time.

Yet in order to help others we must first help ourselves. Think of this: when you fly with young children, you are always told to put on your oxygen mask first then tend to your young ones. This proactive action is so that the strong can safeguard those who are not yet able to do it for themselves. Our PT community is struggling, and in order to protect our patients and our businesses, we must first embrace a new model for physical therapy that features Diagnostics. In order to save others in need, we must also heal ourselves. With the financial and healing success adding Diagnostic tools to your practice brings, as a PT community I know we can help save many from the Opioid crisis.

I am here to tell you we can accomplish all of this – and also help millions of people who may fall prey to the deadly crisis of Opioid addiction. Contact me to help build a better world!

Dimitrios Kostopoulos, DPT, MD, PhD, DSc, ECS

ABPTS Board Certified in EMG/NCS Testing Clinical Affiliate Assistant Professor FAU College of Medicine Dimi@handsonpt.org

*Data from a HODS study

Why Keeping Your Eye on the Bottom Line & Diagnostics is Good for Your Patients

"Now, with a few years under their belt, HODS partners are reporting 10X profits and dramatically higher patient outcomes – to the tune of 62 percent or more."

Business leader Craig Ferreira, inspired by his work in physical therapy private practices since 1985, is well-known in the PT community for his expertise as a top U.S. training and consulting company. To date, Ferreira and his team have worked with over 4,500 professionals and have facilitated numerous success stories for his clients. Ferreira said that when the insurance companies first started cutting reimbursements in the PT industry a few years ago, he knew private practices would be hit hard.

"Understanding these PT private practice clinics, it's obvious that the real deal today is that the insurance reimbursement rates are not okay - or sustainable - to these people who are in the business of healing others while running a business," he noted.

Ferreira has had an illustrious career in the PT field that has offered his clients a very unique perspective over 35 years. His work, he noted, clearly showed him a dangerous pattern among private practice owners: they are too busy working as physical therapists in most cases to take the time to tend to their business.

"I do not have a medical background," said Ferreira. "Strictly, for all these years, I have been working with private practice on the business and marketing side of things. At the same time, one of the biggest problems for private practice owners is that they don't always make the time to run their business, so they don't always notice when the bottom line starts sinking, until it's too late. They also don't have the time to understand there are solutions to their issues, such as diagnostic tools for their practices."

Physical Therapy is a \$30 billion industry and has an expected growth of about 7 percent per year. The market is comprised of mostly small independent firms, which means private practice owners are operating in the new reality

of dwindling insurance reimbursements, competition from the explosion of medi-centers and more.

"When I saw reimbursement rates going down more and more, I knew how criminal it was that the insurance profession pays this industry so low," he said. "Two doctors and clients, Dr. Dimitrios Kostopoulos and Dr. Kostas Rizopoulos, explained how we need to bring diagnostics to the profession. The idea was to package up this incredible knowledge and make it seamless for any PT private practice owners who believed in the future of PT. I decided to introduce it to clients of my consulting company, and it was a hit."

With a vertical model including training, board certification, mentors, fellowships and residency, Hands-On Diagnostics (HODS) was born out of a shared passion to offer a new paradigm for the PT community. Now, with a few years under their belt, HODS partners are reporting 10X profits and dramatically higher patient outcomes - to the tune of 62 percent or more.

"I was amazed at the clinical benefit for the patients with Diagnostics," he explained. "By comparison, I have PT clients for 25-30 years that are well educated and highly experienced. They kept telling me as they got involved at how amazed at what they were finding. They could help patients with Diagnostic tools that the schools had not shown them. Consistently this is not denigrating from what they know as therapists, too. It's just a higher level of clinical skill benefits for patients that is dramatic. The bottom line is not just the money - it's rewarding helping people."

> To learn more: HandsOnDiagnostics.com

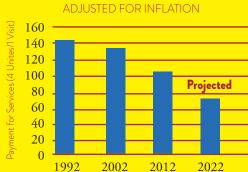


FACT: Physical Therapists provide most PT services and receive the least reimbursement compared to other healthcare providers.

Liu, X., Hanney, W.J., Masaracchio, M., & Kolber, M.J. (2015). Utilization and Payments of Office-Based Physiuca Rehabilitation Services Among Individuals With Commercia Insurance in New York State. Physical therapy.

FACT: According to data from PT Business Alliance Physical Therapy Reimbursements are projected to further decrease year after year until the year 2022.

Resource-Based Relative Value Scale PHYSICAL THERAPY REIMBURSEMENTS





Built to THRIVE: Private Practice Success Story

By Nathan Shields

"50-60% PROFIT MARGINS!

Skeptics said we couldn't successfully integrate EMG's and other diagnostics into our practice, but we saw the future and we were right. Big time!"

> Nathan Shields, P.T. - Co-Owner; Rise Diagnostics, Wasilia & Anchorage, Alaska Rise Rehabilitation Specialists, Arizona

 $B^{\text{efore HODS, my partner Will}}_{\text{Humphreys and I were looking for}}$ something different within physical therapy. We were searching for something that would set up our clinics apart and make us a little more niche.

Because physical therapy has become so commoditized, we needed to do something

different that could increase revenues but stay with the physical therapy realm. We mulled over several options that piqued our interest, but nothing really excited us. We even considered a partnership with CrossFit, but since we knew nothing about starting a gym nor had the passion, we wanted no part of it.

Needless to say – we were stuck!

That's when a friend introduced Will to Dr. Kostopoulos and his training, "Diagnostics for PTs". Will saw the light. He rushed back to share what he learned with me

and I was hungry for more- especially since I always thought (and was taught) "PTs can't do diagnostics!". Boy, were they wrong!

We were convinced this was exactly what our practice need: something with a practically unlimited earning potential; was simple to implement and provide us the distinction we so craved.

Not too long after Will and I flew out to

New York and met with Dr. Kostopoulos to learn more about HODS. Right away we knew this was a fit for us, so we decided to make the jump and become a HODS Partner. The past few years with HODS has been game changing for our practice and for

me personally.

Since joining HODS things have been moving fast for us and we've been growing very rapidly. Not long ago we considered opening an EMG-based clinic that wasn't dependent upon us providing physical therapy (something new for us).

We opened another practice exclusively

for EMGs in Alaska (of all

We added diagnostics about 5 years ago immediately seeing benefits. We could see results of diagnostic tests and then could change our patient care. We were providing in the clinics the ability to focus on exact parts of the body where the damage was in patient, such as where a nerve was being compromised.

Today, we have expanded and are doing tests for doctors, which benefits the physicians and the patients. We can determine the severity of the issue

because intervention is going to be completely different if it's mild vs. severe or an acute situation vs. a chronic one.

Considering the general decline in reimbursements, HODS has been our way to survive. They've made it possible for us to set our clinics apart and embrace a new way of practicing physical therapy, plus work with physicians as well.



PRACTICE **DOUBLED**

ABOUT THE AUTHOR:

Nathan is a Physical Therapist and co-owner of Rise Rehabilitation Specialists (Rise Rehab). In conjunction with his extensive training and experience in orthopedic physical therapy Nathan also specializes in ElectroNeuroMyography (EMG/NCS) and Musculoskeletal Ultrasound (MSKUS) Diagnostic Testing. Nathan has received extensive training and competency certification through Hands-On Diagnostic Services in both Clinical Electrophysiology Testing and Musculoskeletal Ultrasound Imaging. Rise Rehab is proudly certified as a Hands-On Diagnostic Center.

The combination of EMG/ NCS and MSKUS testing with physical therapy has proven to provide Rise Rehab patients more accurate and effective physical therapy care. These tests provide the Rise physical therapists the knowledge they need to localize and focus their care, thus resulting in better and faster **RESULTS** in patient treatment. Not only do these tests help the physical therapists, they have also provided greater insight for physicians through clear and concise findings and reports via professional evidencebased testing.

Nathan is a proud owner of Rise Rehab since 2002. and in that time Rise has been able to help thousands of people. Through the incorporation of EMG/NCS and MSKUS testing we plan to be an even greater positive influence on our patients and their healthcare in the future.

Role of Diagnostic Testing in the Assessment and Management of a Patient with Carpal Tunnel Syndrome and Juvenile Idiopathic Arthritis

By Dr. John Lugo, PT MS ECS

arpal tunnel svndrome (CTS) is a clinical con-

dition when a patient presents with a collection of signs and symptoms including radiating pain in the wrist and hand, paresthesia or anesthesia in the volar surface of the thumb, index, middle, and lateral ring fingers, weakness of thumb abduction, opposition, and finger grasp strength, with symptoms typically worse at night and exacerbated by repetitive motions of wrist flexion (Wainner et al., 2005). One of the most common and well-established diagnostic tests used in the evaluation of patients with suspected CTS are electrodiagnostic studies (EDX), which include nerve conduction studies (NCS) and needle electromyography (EMG) (Lindstrom & Ashworth, 2018). NCS parameters used to determine the functional integrity of the median nerve at the wrist include distal sensory latency (DSL), distal motor latency (DML), sensory nerve action potential (SNAP), and compound muscle action potential (CMAP). EMG parameters used to determine the neuronal integrity of muscles innervated by the median nerve distal to the wrist include the presence of spontaneous potentials and analysis of the shape, amplitude and duration of motor unit action potentials (MUAP) (Kimura, 2001). Recently, neuromusculoskeletal ultrasound (NMSKUS) has been found to be an effective method at evaluating the structural integrity of the median nerve at the wrist in patients with suspected CTS (Telleman, Grimm, Goedee, Visser, & Zaidman, 2018). Parameters used in the NMSKUS assessment of the structural integrity of the median nerve at the wrist include the cross-sectional area (CSA) and the linear dimensions of the nerve (Telleman et al., 2018).

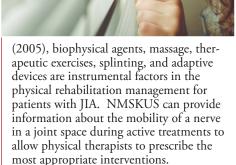
Juvenile idiopathic arthritis (JIA) is a type of rheumatoid arthritis (RA) that affects children under sixteen (Ciccone, 2016). It is a diagnostic classification made by a physician when a patient presents with symptoms of pain, swelling, stiffness, and fever or signs or symptoms of systemic inflammation (Goodman & Fuller, 2014). The use of ultrasound as a

diagnostic tool to assist with the evaluation of JIA has recently been investigated. Miotto e Silva, de Aguiar Vilela Mitraud, Vilar Furtado, Natour, Len, & Ascensão Terreri (2017) concluded that a positive power Doppler (PD) signal in patients with JIA in clinical remission can be used as a risk assessment measure for a

The use of EDX studies in patients with suspected CTS is well established (Wainer et al., 2005). Recently, the role of EDX testing in patients with diagnosed risk factors such as RA has been inves-

tigated. Solmaz., et al (2017) reported that the median nerve CMAP in both hands are significantly decreased in patients with RA and that a significant negative correlation between disease duration and median nerve CMAP exists. The role of ultrasound in assisting with the diagnosis of CTS in patients with RA has also been investigated, but with less definitive results than EDX. Yagci, Akdeniz Leblebicier, Mansiz, Ozturk Gokbakan, & Akyuz, (2016) reported that 38% of patients with RA had sonographic evidence consistent with the criteria to rule in CTS and that the CSA of the median nerve is larger in patients with RA than age matched controls.

The impression of the EDX and NMSKUS studies can help confirm the presence of, quantify the involvement of, and determine the recovery prognosis for conditions like CTS. These factors can assist the physical therapist used evidenced-based practice principles to determine the most appropriate course of treatment for their patients. There are recently published CTS Clinical Practice Guideline drafted by the Academy of Hand & Upper Extremity Physical Therapy and Academy of Orthopaedic Physical Therapy (2019), that recommend specific physical therapy interventions based on the presence and severity of CTS. The physical therapy interventions recommended for patients with JIA are similar to the ones described above for CTS. According to a review article by Cakmak and Bolukbas



Diagnostic testing can play an important role in the assessment and physical therapy management of patients with upper extremity neuromuscular and musculoskeletal pathology. Physical therapists have been recognized in certain state jurisdictions to be qualified providers of these diagnostic tests, with board certification recognition in EDX testing available from the American Board of Physical Therapy Specialties and registration in musculoskeletal sonography certification available from the Alliance for Physician Certification and Advancement. These valuable tests should be performed by qualified physical therapists where allowed to help improve the quality of care delivered to their patients.



Meaningfulness & Diagnostics: Rising Above the Fray

How MSKUS Ultrasound adds Meaning and Purpose to a Doctor's Work with Patients

Thances are if you ask doctors why they chose physical therapy as a profession, you will hear that helping people in pain was a primary motivator for joining the PT community. But along the way, physical therapists and private practice owners often deal with long work days, stressful business realities such as hiring and retaining top talent and facing demeaning insurance reimbursements, while also managing their own patients. The joy, it turns out, can be muffled by the weight of issues plaguing the PT industry.

For Dr. Kostas Rizopoulos, a full-time PT and partner of Hands-On Diagnostics, dealing with this long menu of challenges lead him to a space of meaningfulness and balance, in a very surprising way.

"A few years ago, I was working on my DPT and my thesis was to create a business plan that would offer profitable new ideas for physical therapy practices," said Rizopoulos. "The idea was to introduce Diagnostic ultrasound in our practice, and also to perform this in doctor's offices."

The plan worked well and brought in new profits. At the same time, something unique was percolating within the practice, among the patients and with the doctor.

"This new model was successful from the point of view that we were seeing great new profits, but I came to realize that it's not only the extra business the MSK Ultrasound offered me but also the ability to be a better physical therapist," he explained. "When you are working with patients, once you know their problems, then you can create a treatment plan based on what you find. This leads to better and faster outcomes. It felt really good to offer this to patients."

In his practice, MSKUS Ultrasound became the bridge for a deeper conversation with Dr. Rizopoulos' patients. Being able to offer a very high quality of treatment using MSKUS Ultrasound, coupled with an additional source of revenue, was a turning point for the practice, but it also offered patients a new perspective.

"We saw a double-benefits realization due to MSKUS Ultrasound: profits and patient outcomes," said Dr. Rizopoulos. "From a patient point of view it is priceless. An educated patient gets better results."

A major improvement for patients, said Dr. Rizopoulos, is the way patients see their pain – and the source of their pain. Taking the mystery out of symptoms is less stressful for patients, and can lead to a deeper bond with their physical therapists.

"Not many patients realize we can use ultrasound to prove to the patient that the location of their symptoms is often not necessarily where they feel the pain," he added.

"From an educational point of view, it's very beneficial to patients to work out from their first visit knowing what may be wrong, and MSKUS Ultrasound clears up most of the mystery. This helps increase the chances of getting an accurate diagnosis."

get back to their lives."



Dr. Rizopoulos said he enjoys the feeling of connecting and helping his patients, which is part of the reason he became a physical therapist in the first place.

"Diagnostics increase the chances of getting a much better understanding of patients' problems," noted Dr. Rizopoulos.

"The closer you are to reaching the patient goals, the more successful you are in the practice of physical therapy. Diagnostics is a tremendous add-on to that process with huge benefit to patients."

When it comes to the future of the entire PT community, Dr. Rizopoulos said he can predict changes in the future.

"Diagnostics tools such as MSKUS and EMG, which are often used together, are very important," he said. "I believe all physical therapists in the future will utilize MSKUS Ultrasound and EMG on the basis of diagnostics. This is life changing for both physical therapists and patients."

Pausing for moment, he smiled and shook his head. "Of course, all Diagnostic tools are important in our profession," he said. "However, that cannot replace the most important tool of all, which is our ability to listen and to understand our patient's problems, which is the catalyst in creating circumstances so our patients can be healed and

Ultrasound in Orthopedic Practice

By Dr. Mohini Rawat, DPT, MS, ECS, OCS, RMSK

oint-of-care ultrasound

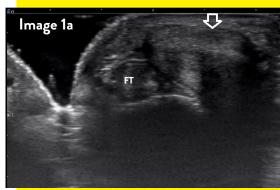
brings great value to patient care in orthopedic practice, especially for soft tissue problems. It offers safe, cost effective and real time evaluation for soft tissue pathologies and helps narrow down the differential diagnosis.

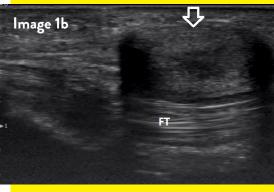
There are variety of soft tissue lesions in orthopedic practice with classic clinical presentation that may not necessitate ultrasound examination for confirmation of diagnosis, for example ganglion cyst. However, there is value in performing ultrasound scan for these common soft tissue lesions.

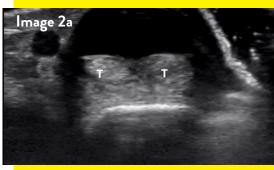
Ganglion cyst on the dorsum of the wrist or radial-volar aspect of the wrist are confirmed based on clinical examination and presentation. Adding ultrasound examination can help differentiate classic ganglion cyst from some rare findings like- Lipoma, anomalous muscles or soft tissue tumors. Ultrasound examination may also be helpful in findings the source of the ganglion cyst or the stalk of the ganglion cyst. This can help pre-surgical planning if resection of the ganglion is desired by the patient and recommended by the surgeon, because arthroscopic or traditional surgical approach may be needed based on the location of the stalk or neck of the cyst.

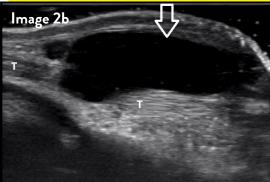
Image 1a, 1b, 2a & 2b, show examples of two different patients with similar presentation of slow growing mass on the digit. Image 1a & 1b from patient 1 shows a solid tumor overlying the flexor tendons of the digit, where the mass was palpated. Image 2a & 2b from patient 2, shows a cystic mass overlying the tendons of the digit. In both the cases masses were painless and slow growing with minimal to no discomfort. Ultrasound is a great tool in differentiating solid vs cystic lesions and can help avoid attempted aspiration of a solid mass when the mass is presented in an area of classic ganglion cyst's usual presentation.

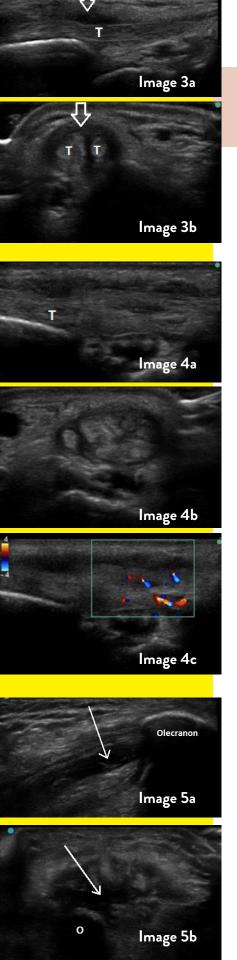
Another soft tissue problem, where ultrasound is superior imaging tool is tendon pathology. Ultrasound can help differentiate tendinosis, tenosynovitis or tendon tears.











In tenosynovitis, tendon by itself shows normal echotexture and uniform appearance but the tenosynovium that surrounds the tendon gets inflamed and appears as hypoechoic halo around the tendon, for example in image 3a & 3b tendons of the first dorsal compartment of the wrist show uniform thickness and fibrillar echotexture, however there is hypoechoic swelling around the tendons, this is an example of tenosynovitis of first dorsal compartment of wrist.

In tendinosis, tendon loses its fibrillar pattern and appear swollen and may show vascularity on color ultrasound, which is suggestive of neoangiogenesis or angiofibroblastic proliferation. For example, in Image 4a, 4b & 4c, the tendons of first dorsal compartment of the wrist show focal enlargement, hypoechoic swelling and loss of normal fibrillar echotexture and tendon appears disorganized with evidence of increased vascularity on color ultrasound. This is an example of tendinopathy or tendinosis.

Focal tendon tears appear as anechoic or hypoechoic focal defects in tendon substance. Image 5a & 5b shows partial tear of triceps tendon from the olecranon process. Partial tear appears as focal hypoechoic defect in tendon which is confirmed in long and short axis scan of the tendon.

In full thickness tears, tendon is seen retracted proximally with no fiber attachment at the tendon foot print. Image 6, shows example of a full thickness complete tear of the supraspinatus tendon from its bony attachment at greater tubercle. The tendon has retracted proximally and retracted stump is not visible on ultrasound examination.

Point-of-care ultrasound adds significant value to clinical examination in orthopedic setting. It enhances the understanding of patient's problem, increased confidence in care provided and high patient satisfaction reported.



Mohini Rawat, DPT, MS, ECS, OCS, RMSK ABPTS Board Certified in Clinical Electrophysiology

Clinical Electrophysiology ABPTS Board Certified in Orthopedics Registered in Musculoskeletal Sonography, APCA Point-of-Care MSK Soft Tissue Clinical Certificate



International Marketing Leader Atlanta, GA – September 21 – 22, 2019



Award winning best-selling author and International marketing global leader Tracy Repchuk is a featured speaker at the 2019 Hands-On Diagnostics Summit!

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