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THE INSIGHT HUB

MEET THE EXPERT

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What is the best professional advice you have received?

Everyone has their own journey. Maximize your own. Don't compare yourself to others; comparison is the thief of joy.

What is one article all therapists should read?

Lewis JS, Cook CE, Hoffmann TC, O'Sullivan P. *The Elephant in the Room: Too Much Medicine in Musculoskeletal Practice.* J Orthop Sports Phys Ther. 2020;50(1):1–4. As clinicians, we often try to explain why something works before we even know if it works. We create narratives, usually with the best of intentions, that may not always be true, and risk misleading our patients. This article challenges us, in a good way, to let go of that need for certainty. It encourages us to simplify, to collaborate with our patients, and to focus on what truly matters: helping them in the best way we can.

What is one book all therapists should read and why?

The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science by Norman Doidge. Tim Flynn first recommended this book to me, and since then, I've recommended it to countless mentees. It's stood the test of time. The stories within are powerful reminders of human adaptability and resilience…qualities that inspire us not only in our patients but also in ourselves and our professional communities.

What are you working on right now?

Right now, my biggest project is leading the second revision of the Neck Pain Clinical Practice Guideline (CPG). It's an enormous task. Synthesizing vast and evolving evidence into something meaningful for clinicians is incredibly challenging and rewarding.

I'm also part of an international pediatric spinal manipulation research group, examining the risks and benefits of manual therapy in this under-researched population.

And I recently stepped into a new role as Assistant Director of Curriculum, which pushes me outside my comfort zone. A good reminder to embrace growth and continue maximizing my own journey.

Do you have any advice for early-career therapists?

Honestly, the same advice that's guided me: don't compare yourself to colleagues, your past self, or who you hope to be someday. Set meaningful goals, pursue them with purpose, and recognize that failure is part of growth. Some of my greatest failures have led to the most meaningful experiences of my life.

BOOK CLUB

I would recommend Atul Gawande's *The Checklist Manifesto: How to Get Things Right* which states that no matter how expert you may be, well-designed checklists can improve outcomes. For me, it helped show that the simplest things can lead to the most effective outcomes, and since I'm more of a "big idea" guy, it has helped me stay relevant and be a better communicator. -Chad Cook, PT, PhD

About the book:

In his latest bestseller, Atul Gawande shows what the simple idea of the checklist reveals about the complexity of our lives and how we can deal with it.

The modern world has given us stupendous know-how. Yet avoidable failures continue to plague us in health care, government, the law, the financial industry—in almost every realm of organized activity. And the reason is simple: the volume and complexity of knowledge today has exceeded our ability as individuals to properly deliver it to people—consistently, correctly, safely. We train longer, specialize more, use ever-advancing technologies, and still we fail. Atul Gawande makes a compelling argument that we can do better, using the simplest of methods: the checklist. In riveting stories, he reveals what checklists can do, what they can't, and how they could bring about striking improvements in a variety of fields, from medicine and disaster recovery to professions and businesses of all kinds. And the insights are making a difference. Already, a simple surgical checklist from the World Health Organization designed by following the ideas described here has been adopted in more than twenty countries as a standard for care and has been heralded as "the biggest clinical invention in thirty years" (The Independent).

HEALTH & WELLNESS CORNER: PRO TIPS

In this month's health & wellness corner, we asked EIM senior faculty to share what single health activity has been a cornerstone in helping them balance work and health:

Pain Science Faculty:
Brett Neilson PT, DPT, DSc
I switched to a plant-dominant diet about 5 years ago and reduced my systolic blood pressure by 10 points and lost 10lbs. I now get my protein sources from tofu, seitan, beans, nuts/seeds, and occasional animal proteins in the form of eggs, dairy products, and seafood. My diet may not work for everyone, but I have more energy and feel healthier as a result!

MSK Faculty:
Elizabeth Lane PT, DPT, PhD, OCS, FAAOMPT, CF-L2, CSCS
I set up some automations to prioritize sleep:

- My phone "goes to sleep" at 8 pm which signals me to start winding down for my 9 pm bedtime
- The mini-split AC in my bedroom starts to cool the room
- The noise machine turns on
- All automated to turn off at 8 am

MSK Faculty:
Paul Mintken PT, DPT, OCS, FAAOMPT
Every day I start with thinking about one thing I am grateful for then I do a short meditation, then I go to the gym and move. Some days I just walk around, some days I do cardio, some days I lift heavy stuff, but I go every day. Throughout the day I try to be kind and helpful. At the end of the day, I ask myself if the world was a better place because I was in it today. If not, what can I do to be better tomorrow?

RESEARCH CORNER

Effects of Neuromuscular Training on Athletes' Balance Ability: A Meta-Analysis

Kexin Shi, Mai Xiang, Haiwang Shi, Rui Duan

Balance ability is a critical component of athletic performance and injury prevention. Neuromuscular training has been increasingly recognized as an effective intervention to enhance balance, but its overall efficacy remains unclear. We conducted a comprehensive literature search using several databases, up to August 2024. After two rounds of screening, 13 studies were included from 7254 articles obtained from multiple databases—comprising 12 studies on dynamic balance and five studies on static balance. Each participant underwent outcome prior to and after the training intervention. The pooled analysis indicated that neuromuscular training significantly improved overall balance ability compared to traditional training (SMD 1.47, 95% CI 0.78–2.16, $p < 0.0001$). Neuromuscular training also demonstrated significant advantages in both static balance (SMD 1.90, 95% CI 0.24–3.57) and dynamic balance (SMD 1.30, 95% CI 0.54–2.05).

Effects of neuromuscular training on dynamic balance ability in athletes: A systematic review and meta-analysis.

Peiling Wang, Yongfu Liu, Chao Chen

This study aimed to quantitatively analyze the effects of neuromuscular training (NMT) on dynamic balance in healthy athletes through a systematic review and meta-analysis of randomized controlled trials.

Subgroup analysis revealed that NMT did not have a positive effect ($p > 0.05$) on the right anterior (SMD = 0.35); However, it had a positive effect ($p < 0.05$) on the right posteromedial (SMD = 1.22), right posterolateral (SMD = 0.82), right composite score (SMD = 0.79), left anterior (SMD = 0.38), left posteromedial (SMD = 1.19), left posterolateral (SMD = 0.57) and left composite score (SMD = 0.86). Based on GRADE scale, the certainty of evidence from the included studies was determined to be moderate.

Neuromuscular training can enhance the dynamic balance ability of athletes on both the left and right sides. Therefore, neuromuscular training is an effective method for enhancing the unilateral dynamic balance ability of athletes.

Neural tension patterns during cervical spine rotation: diagnostic implications from a cadaveric study.

Daniel Alvarez, Rob Sillevis, Juan Nicolas Cuenca Zaldivar, Eleuterio A. Sanchez Romero

This cadaveric study quantified tensile load changes at the cervical spinal nerve level (C1–C5) during passive cervical spine rotation in five formalin-embalmed cadavers. Tension was measured on the cervical spinal nerves (C1–C5) using force gauges attached proximal to the division between the dorsal and ventral rami. C1 measurements were obtained from a single specimen. Two movement conditions were used: cervical flexion-rotation for C1–C3 and neutral-plane rotation for C4–C5.

Ipsilateral increases in neural tension were observed in C1–C3 during flexion-rotation movements. By contrast, C4–C5 exhibited a consistent pattern of contralateral load increase during rotation in the neutral plane. Statistically significant variations in the tensile load were observed at the C5 level under different rotation conditions, specifically at C5 left ($p = 0.003$) and C5 right ($p = 0.006$). Post-hoc analyses of C5 measurements during neutral-plane rotation revealed significant differences between right and left rotation ($p = 0.018$) and between left rotation and neutral rotation ($p = 0.018$) on the left side, as well as between right rotation and left rotation and neutral rotation ($p = 0.026$, $p = 0.024$) on the right side. Intraclass correlation coefficients (ICC) indicated good-to-excellent reliability (ICC > 0.75), particularly at C2–C5.

Cervical rotation influenced neural tension, with distinct patterns observed between the upper cervical segments (tested under flexion-rotation) and the middle cervical segments (tested under neutral plane rotation). These exploratory findings suggest that replacing lateral neck flexion with rotation in the upper-limb tension test may represent a promising direction for future research. Additionally, the flexion-rotation test may provide a basis for clinical validation as a potential indicator of greater occipital nerve tension. These results lay the groundwork for refining neurodynamic assessments and warrant further in vivo investigation.

CLINICAL PEARL

Lucas Paggiaro Simoes PT, DPT, MSc

The mid/upper thoracic doesn't get nearly as much love as it needs! The self-mobilization taught in a chair—when patient clasps hands behind neck and bends backwards—and the combo of "threading the needle" is under-delivering for patients with unilateral lower, CTJ pain!

This is a rotational technique to improve cervical pain and rotation limitation, adapted from mid thoracic rotational mobilization. Following the principle of regional interdependence, mobilizing the upper thoracic for improvement in cervical dysfunction is commonly used. I find it helpful when the mid cervical is hypermobile and upper thoracic is hypomobile. In cases when upper thoracic extension mobilization and self-mobilization doesn't bring relief the rotational component is helpful for improving the pain in the Levator Scapulae/Upper Trap during rotation of the head. It is also very helpful when dealing with common pain in the Levator Scapulae and Upper Trapezius area, in the CTJ.

"Our research needs more practice, and our practice needs more research."

- Steven J. Rose, PT, PhD, FAPTA