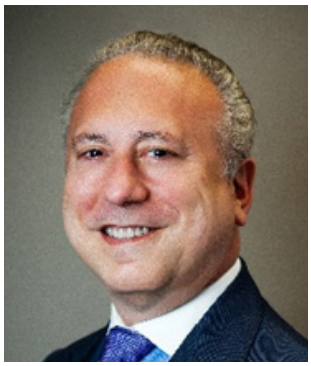
VOLUME 21, ISSUE 5 | FEBRUARY 18, 2025

Orthopedics This Week

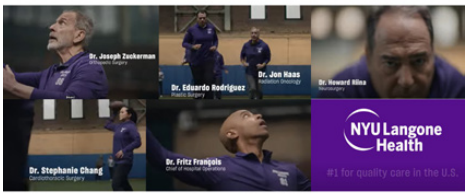
WEEK IN REVIEW

4 Viscogliosi Brothers Buy Stryker Spine >> Tony, John and Marc Viscogliosi, with this purchase of Stryker's Spine business, are the undisputed, most consequential entrepreneurs, financiers and creators in the largest sector of medicine, musculoskeletal care. Here are the incredible details.



6 Two Hormones Slow OA – Amazing Mouse Study >> Kind of a big deal. Apparently, in years past, somebody forgot to specify gender when they were ordering mice for osteoarthritis (OA) lab studies. Why does that matter?

9 Anxious Patients Have More Positive Outcomes!? New Study >> A new 250-patient study tested the hypothesis that patients with positive pre-op expectations are primed for better outcomes. Surprisingly, the data from the study did not support that hypothesis. Indeed, the data seemed to show that negative preop patients tended to have more positive postop outcomes.



BREAKING NEWS

For all news that is ortho, read on.

CLICK HERE TO DOWNLOAD A PDF VERSION OF THIS WEEK'S NEWSLETTER

Orthopedic Power Rankings

Robin Young's Entirely Subjective Ordering of Public Orthopedic Companies

THIS WEEK: Layoffs at FDA—in staff that reviews medical devices. Layoffs at CMS. Time and cost for clearances and approvals will rise, which adds cost to companies. Reimbursement. Slower and lower. The ability to move innovative new devices through the regulatory gauntlet, already burdensome, is going to get worse. So, check with your contacts at the agencies and see what is going on—hopefully they still have jobs. In terms of equity valuations, Wall Street is focusing on inflation. Good news, "core" inflation, which excludes food and energy, 2.6% in January, down from the 2.8% in December.

RANK	LAST WEEK	COMPANY	TTM OP MARGIN	30-DAY PRICE CHANGE	COMMENT
1	1	Pacira Biosciences	13.02%	16.27%	Still lowest priced stock in orthopedics, but with a revamped board and senior management. Investors like what they're seeing, as PCRX's prices keeps rising.
2	4	Medtronic	19.17	8.68	MDT up to #2 on the Power Rankings, the stock is up almost 9% in the last 30 days. Buys Nanovis, for its revolutionary spine surface technology. Strategic move. MDT spine is on the ascent.
3	2	Globus Medical	17.67	(7.41)	Agrees to buy Nevro. Strategic, positioning move. GMED is playing chess while most MSK companies play checkers. Stock is down, but the company is cheap.
4	5	Integra LifeSciences	6.60	7.85	Investors bid up IART over the last month in the hopes that management will be reporting strong, like 12%, sales growth for the final quarter of 2024.
5	3	Xtant	(12.29)	13.03	Only one analyst is covering this great company, whose stock is trading at $0.60 per share. Sales for Q4, likely rose 14%. Stay tuned.
6	8	Smith & Nephew	11.60	3.38	At these prices, SNN is the 5th cheapest equity in ortho. Most analysts expect that SNN closed 2024 with 4.5% sales growth, which is essentially the ortho market rate.
7	9	Zimmer Biomet	20.70	(5.62)	Down almost 6% in the last month, makes ZBH the 3rd cheapest ortho stock. For Q4, ZBH sales rose 4.9%. The big news, though is Paragon 28 purchase. Strong extremities addition.
8	7	Johnson & Johnson	24.52	7.71	What's DePuy Synthes going to do? Both Zimmer and Stryker sold their underperforming spine businesses. JNJ's spine is also underperforming. Late to the party?
9	10	Orthofix	(8.61)	3.73	OFIX is still in recovery mode. Wall Street is looking for a small loss for Q4 vs a profit a year earlier. Sales growth, however, is likely to come in around 6%.
10	NR	ConMed	15.68	(7.15)	One of the most profitable ortho companies in America, and also one of the cheapest equities. For Q4, sales rose 6%. For 2025, Wall Street expects 4%.

Robin Young's Orthopedic Universe

TOP PERFORMERS LAST 30 DAYS

	COMPANY	SYMBOL	PRICE	MKT CAP	30-DAY CHG
1	MicroPort Scientific	0853	$0.95	$1,754	37.71%
2	Nevro Corp	NVRO	$5.71	$216	34.67%
3	Paragon 28	FNA	$13.06	$1,093	27.41%
4	Medacta	MOVE	$153.67	$3,073	24.18%
5	Pacira Biosciences	PCRX	$25.44	$1,175	16.27%
6	Xtant Medical Hldgs	XTNT	$0.60	$83	13.03%
7	Anika Therapeutics	ANIK	$17.86	$262	11.49%
8	Medtronic	MDT	$92.81	$119,009	8.68%
9	Integra LifeSciences	IART	$24.18	$1,866	7.85%
10	Johnson & Johnson	JNJ	$156.15	$375,949	7.71%

WORST PERFORMERS LAST 30 DAYS

	COMPANY	SYMBOL	PRICE	MKT CAP	30-DAY CHG
1	Aclarion	ACON	$4.50	$5	-68.39%
2	Aurora Spine	ASG.V	$0.26	$20	-16.77%
3	SINTX Technologies	SINT	$2.95	$4	-11.68%
4	Globus Medical	GMED	$83.93	$11,429	-7.41%
5	Dynatronics Corp	DYNT	$0.13	$1	-7.15%
6	ConMed	CNMD	$63.15	$1,951	-7.15%
7	Zimmer Biomet	ZBH	$100.52	$20,011	-5.62%
8	OrthoPediatrics Corp	KIDS	$24.62	$596	-5.60%
9	Alphatec Holdings	ATEC	$10.74	$1,523	-5.37%
10	AxoGen	AXGN	$18.13	$798	-3.20%

LOWEST PRICE / EARNINGS RATIO (TTM)

	COMPANY	SYMBOL	PRICE	MKT CAP	P/E
1	Pacira Biosciences	PCRX	$25.44	$1,175	18.32
2	Zimmer Biomet	ZBH	$100.52	$20,011	18.97
3	ConMed	CNMD	$63.15	$1,951	19.87
4	Johnson & Johnson	JNJ	$156.15	$375,949	20.76
5	Medtronic	MDT	$92.81	$119,009	22.24

HIGHEST PRICE / EARNINGS RATIO (TTM)

	COMPANY	SYMBOL	PRICE	MKT CAP	P/E
1	Xtant Medical Hldgs	XTNT	$0.60	$83	126.08
2	Globus Medical	GMED	$83.93	$11,429	57.44
3	Medacta	MOVE	$153.67	$3,073	50.37
4	Smith & Nephew	SNN	$25.70	$11,236	42.72
5	Stryker	SYK	$385.18	$146,977	35.43

LOWEST P/E TO GROWTH RATIO (EARNINGS ESTIMATES)

	COMPANY	SYMBOL	PRICE	MKT CAP	PEG
1	ConMed	CNMD	$63.15	$1,951	1.35
2	Pacira Biosciences	PCRX	$25.44	$1,175	1.70
3	Medacta	MOVE	$153.67	$3,073	1.81
4	Integra LifeSciences	IART	$24.18	$1,866	2.30
5	Zimmer Biomet	ZBH	$100.52	$20,011	2.92

HIGHEST P/E TO GROWTH RATIO (EARNINGS ESTIMATES)

	COMPANY	SYMBOL	PRICE	MKT CAP	PEG
1	Xtant Medical Hldgs	XTNT	$0.60	$83	6.30
2	Smith & Nephew	SNN	$25.70	$11,236	4.19
3	Globus Medical	GMED	$83.93	$11,429	3.78
4	Stryker	SYK	$385.18	$146,977	3.62
5	Johnson & Johnson	JNJ	$156.15	$375,949	3.52

LOWEST PRICE TO SALES RATIO (TTM)

	COMPANY	SYMBOL	PRICE	MKT CAP	PSR
1	Dynatronics Corp	DYNT	$0.13	$1	0.03
2	Nevro Corp	NVRO	$5.71	$216	0.51
3	Xtant Medical Hldgs	XTNT	$0.60	$83	0.91
4	Orthofix	OFIX	$18.61	$711	0.95
5	Aurora Spine	ASG.V	$0.26	$20	1.03

HIGHEST PRICE TO SALES RATIO (TTM)

	COMPANY	SYMBOL	PRICE	MKT CAP	PSR
1	Aclarion	ACON	$4.50	$5	60.63
2	Globus Medical	GMED	$83.93	$11,429	7.29
3	Stryker	SYK	$385.18	$146,977	6.50
4	Medacta	MOVE	$153.67	$3,073	6.02
5	Paragon 28	FNA	$13.06	$1,093	5.05

PSR: Aggregate current market capitalization divided by aggregate sales and the calculation excluded the companies for which sales figures are not available.

Viscogliosi Brothers Buy Stryker Spine

BY KIM DELMONICO AND ROBIN YOUNG



Stryker Corporation and Viscogliosi Brothers, LLC

The Viscogliosi Brothers, who've been building musculoskeletal (MSK) businesses for more than 30 years and are, arguably, the most consequential MSK entrepreneurs in existence today, have entered into a definitive agreement to acquire Stryker Corporation's United States spinal implants business.

Terms were not disclosed, the deal has not closed, but the chattering class thinks Stryker agreed to sell its spine business for around 1x sales. As one person with knowledge said, "The VBs are getting a great deal."

Ten Years of Stryker Spine Sales, Including K2M Acquisition

Ten years ago, Stryker's spine business represented 7.65% (or $740 million) of total Stryker sales ($9.675 billion). That percent declined over the next four years, until 2018 when Stryker acquired K2M for approximately $1.4 billion (4.7x K2M's $300 million in annual sales).

Post K2m, 2019, Stryker spine sales rose to 7.29% of Stryker's total sales ($14.9 billion). That would prove to be the high water mark for Stryker spine. By the time negotiations with the Viscogliosi Brothers were in full swing, Stryker spine was generating approximately $1.2 billion in sales and had fallen to 5.64% of Stryker's overall business.

If the sale to the Viscogliosi Brothers was, indeed, around 1x sales, it would represent quite a drop in valuation from the days of the 2018 K2M purchase.

Zimmer Spins off Spine, Now Stryker Also Exits Spine, Is DePuy Next?

Is there something inherent in the business of supplying spine surgeons that makes it antagonistic to other MSK businesses in a diversified portfolio of large joint arthroplasty, extremities or durable medical equipment like Zimmer Biomet or Stryker Corporation?

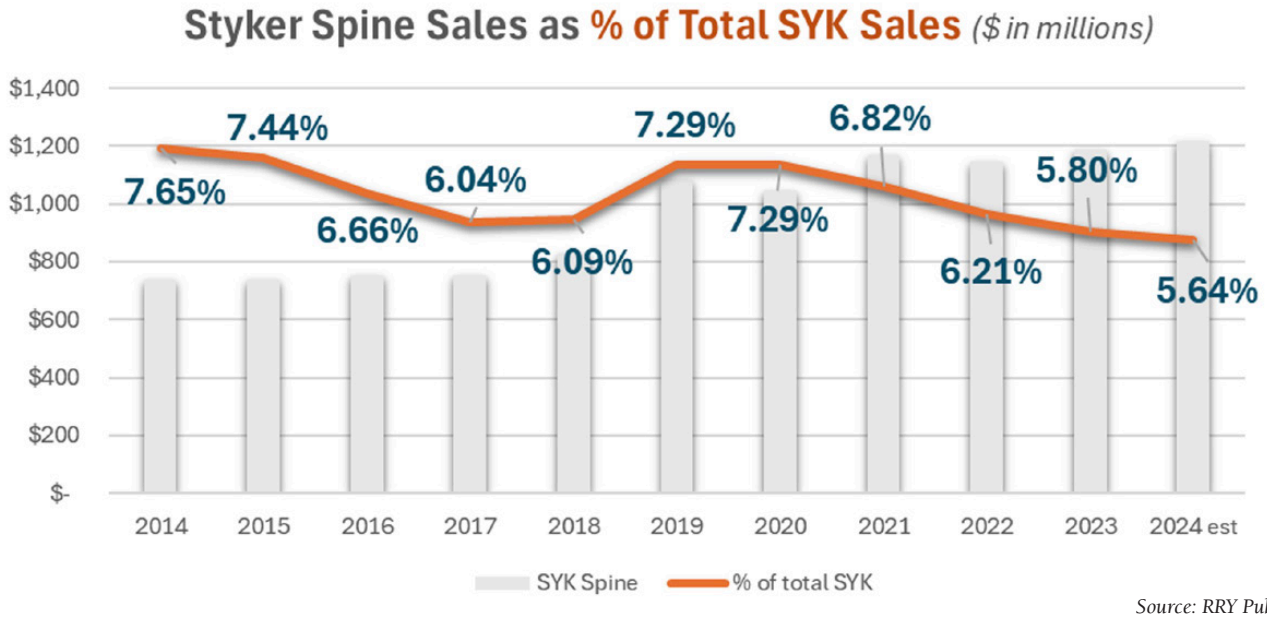
Historically, the most successful spine product suppliers were Sofamor Danek, NuVasive, Globus Medical, Alphatec or K2M. None of the spine divisions at the large integrated suppliers has excelled in the way that the standalone spine firms have.

Senior spine executives told *OTW* that selling spinal implants, instruments and adjuncts to spine surgery is not like other MSK sectors—in three principal ways:

1. Greater need for innovation. Spine surgery outcomes remain too variable when compared to more traditional MSK.

2. Requires greater levels of surgeon (and OR team) engagement. "You can't phone it in."

3. Rewards an entrepreneurial managerial style—which can be out of place in a major diversified corporation.



Source: RRY Publications LLC

Is DePuy next? If so, who's available to buy it?

Transaction Details

The sale will result in a newly formed company called VB Spine LLC. The sale will also result in a partnership between Stryker and the newly formed VB Spine. According to the press release, after closing, "VB Spine will become a strategic partner to Stryker with exclusive access to Mako Spine and Copilot for use with VB Spine's implants in spine procedures."

Stryker Chair and CEO Kevin A. Lobo said, "We believe that the spinal implants business, with its comprehensive portfolio and strong sales channel, will thrive as an independent company."

Lobo continued, "With dedicated resources and a focused strategy, the business will be well positioned to succeed as part of Viscogliosi Brothers."

It is expected that the transaction will close in the first half of this year, subject to customary closing conditions. Until that time, VB Spine and Stryker's U.S. spinal implants business will continue to operate as separate entities.

The definitive agreement also includes a "binding offer to acquire Stryker's spinal implants business in France, subject to required consultations with employees and/or employee representatives."

Stryker has spinal implants businesses in other international markets. The companies similarly anticipates the subsequent sell of those businesses, "pending satisfaction of legal and regulatory requirements, including any required consultations."

Based in New York, but standing alone astride the global musculoskeletal industry, the remarkable Viscogliosi Brothers are at, yet another inflection point after more than 30 years building, financing and driving this industry forward.♦

Two Hormones Slow OA – Amazing Mouse Study

BY ELIZABETH HOFHEINZ, M.P.H., M.ED.

Kind of a big deal. Apparently, in years past, somebody forgot to specify gender when they were ordering mice for osteoarthritis (OA) lab studies.

Why does that matter? Quoting, literally, from the title of this new study from researchers at Spaulding Rehabilitation, a member of the Mass General Brigham Health System: "Menopause-induced 17β-estradiol and progesterone loss increases senescence markers, matrix disassembly and degeneration in mouse cartilage."

Yes, menopause affects osteoarthritis in women. Which everyone knows. Hoping to fill that unexpected gap in the body of OA research, this important new study (cited above) was published in the January 16, 2025, edition of *Nature Aging*.

Source: Shutterstock

Study co-author Fabrisia Ambrosio, Ph.D., M.P.T., director of the Schoen Adams Research Institute at Spaulding Rehabilitation, explained to *OTW*, "Our interest in this topic was inspired by a striking gap in the scientific understanding of one of the most common age-related diseases, osteoarthritis.

For years, our research has focused on uncovering why cartilage breaks down as we age, a process that leads to osteoarthritis."

"While pre-clinical models such as mice have been invaluable in uncovering potential triggers of this disease, our recent comprehensive review of the literature revealed a critical bias: most of the studies in this field were conducted using male model systems (mostly mice)."

"This was troubling because clinical data consistently show that postmenopausal women face a much higher risk and severity of osteoarthritis than men."

"Recognizing this disconnect, we decided to comprehensively compare how cartilage degrades over time in male and female mice. What we found was unexpected. Female mice were relatively protected from osteoarthritis, even into old age—the opposite of clinical reports. Naturally, we wanted to betterunderstand the disconnect."

Study Methodology and Results

Dr. Ambrosio told *OTW*, "Our study was designed to address critical gaps in how we model menopause and its effects on cartilage health. Most previous research into the role of circulating sex hormones in osteoarthritis has relied on surgically induced menopause in young models."

"However, this approach has limitations. First, it creates an abrupt drop in sex hormones, which doesn't mimic the gradual hormone changes that occur during the years leading up to menopause in humans, known as perimenopause. We suspected that this gradual progression was crucial to understanding the full impact of menopause on joint health."

"Another limitation was the use of young animals in the previous studies. Aging creates a very different biological environment for cells and tissues, and we expected that an aged body responds to changes in sex hormones differently than a young body."

"To address these challenges, we chemically induced menopause in middle-aged mice models—a life stage commonly associated with onset of perimenopause in female individuals. This method allowed for a gradual shift in sex hormone levels over time. We then allowed the mice to age further, reaching the equivalent of approximately 60 years in humans. We anticipated that this design would give us a more clinically relevant model to study how menopause impacts cartilage health across the lifespan."

"Our subsequent analyses were comprehensive, spanning many levels of joint health—from molecular and cellular changes to tissue-level alterations and even functional outcomes. This multi-level approach gave us a more comprehensive view into the impact of menopause on joint integrity and provided insights that we hope may eventually pave the way for more effective, targeted therapies for osteoarthritis."

2 Key Hormones Slowed Cartilage Degeneration and Restored Gait

"We found that our model closely paralleled the human menopause experience, including progressive and severe cartilage degeneration over time," explained Dr. Ambrosio to *OTW*. "Further, we discovered that the onset of this degeneration was driven by the loss of two key sex hormones, 17β-estradiol and progesterone, which increased cartilage vulnerability to aging and breakdown."

"When aged menopausal mice were treated with a combination of these hormones, cartilage integrity was preserved, and the progression of osteoarthritis was slowed."

"Additionally, while menopause-induced osteoarthritis was associated with altered gait patterns, treatment with the

hormone combination restored gait to a pre-menopausal state, highlighting a functional recovery alongside structural protection of the joint."

"To ensure that these findings were relevant to humans, we also studied chondrocytes (cartilage cells) that were isolated from the knees of post-menopausal women undergoing a total knee replacement. When treated with 17β-estradiol and progesterone, these cells showed reduced markers of aging and increased signs of cartilage formation."

"Taken together, by mimicking the human experience of menopause, we gained valuable insights that we anticipate will help bridge the gap between laboratory findings and real-world outcomes for individuals with osteoarthritis. Our hope is that these insights may extend to other musculoskeletal pathologies that often accompany the onset of menopause."

"As we dug further, we realized a key difference that, though well-recognized in the field of reproductive biology, has been largely overlooked in the field of aging biology. Female mice do not experience menopause in a manner comparable to humans."

"Although older female mice lose the ability to breed as they get older, their sex hormone levels remain relatively stable throughout life. We wanted to know if the imbalance of sex hormones, rather than just aging itself, may be playing a pivotal role in the onset of osteoarthritis in female individuals. This question changed the way we thought about osteoarthritis, and we wanted to dig deeper."♦

Anxious Patients Have More Positive Outcomes!? New Study

BY ELIZABETH HOFHEINZ, M.P.H., M.ED.

Source: Shutterstock

A new 250-patient study tested the hypothesis that patients with positive pre-op expectations are primed for better outcomes. Surprisingly, the data from the study did not support that hypothesis.

Indeed, the data seemed to show that negative preop patients tended to have more positive postop outcomes.

The study, conducted by the team at the Twin Cities Spine Center in Minneapolis, Minnesota, aimed to measure the extent to which a patient's preoperative expectations correlate with their postoperative outcomes. The study was limited to patients undergoing primary 1-2 level anterior cervical surgery for degenerative conditions.

"This represents a very specific, but large population of patients cared for by spine surgeons," said study co-author Joseph Wick, M.D. "Previous studies had suggested that outcomes may correlate with preoperative expectations amongst patients undergoing cervical spine surgery, but these studies were heterogeneous, including patients with mixed pathologies and surgical indications and mixed approaches such as combined anterior and posterior cervical surgery, multilevel surgery, etc."

Study Methodology and Results

The research team, citing evidence that preop patient expectations are linked with postoperative outcomes

among spine patients, decided to take a deeper dive into the relationship between preop patient expectations for pain improvement and 12-month postoperative functional outcomes among two specific types of patients: patients undergoing primary 1–2 level anterior cervical discectomy and fusion and/or cervical disc arthroplasty for degenerative spine disease.

The single-center study pulled data from 250 patients—198 who had been treated with anterior cervical discectomy and 52 who had been treated with cervical disc arthroplasty between 2016 and 2021.

"There are two important findings," Dr. Wick told *OTW*. "First, amongst the specific population of patients undergoing primary 1-2 level anterior cervical surgery for degenerative conditions, there was no correlation between preoperative expectations and postoperative functional outcomes or satisfaction. This was a surprising result, as we had hypothesized that patients with higher preoperative expectations would demonstrate less functional improvement and satisfaction at the one-year postoperative timepoint."

"The other important finding was that patients with greater baseline *dissatisfaction*—those who were subjectively doing the worst before surgery—demonstrated significantly more functional improvement as measured by Neck Disability Index scores at one year after surgery. This should not be surprising but reflects the fact that those who are doing the worst preoperatively have the most to gain from surgery."

"The results of our study show that when considering the specific (and very common) population of patients with 1-2 level degenerative cervical pathology, surgeons do not need to be apprehensive about patients with high preoperative expectations."

"This does not discount preoperative counseling but instead indicates that patients with high preoperative expectations are not 'primed' to be dissatisfied after surgery."

"Our results also show that surgeons should pay attention to patients' preoperative dissatisfaction when recommending and counseling patients on surgery, as those who are most dissatisfied with their preoperative condition appear to also be those who demonstrate the most functional improvement postoperatively."

"Follow-up is also important, and it can be difficult to collect data on an appropriate number of patients at the one-year postoperative timepoint without using either a registry (such as our institutional registry used for this study) or conducting a prospective study. Finally, there may not be more information on this because the answer to the question seems intuitive: one might think that if patients have very high expectations, then *obviously* they are going to be less satisfied or perhaps not do as well after surgery, so why study this? The results of our study show that sometimes our intuition can be incorrect."

Discussion

"We aimed to provide data from a homogenous population undergoing 1-2 level anterior cervical surgery with the understanding that if we identified a correlation between expectations and outcomes, then expectations may be both a modifiable risk factor (through preoperative counseling) as well as a risk factor to account for when interpreting postoperative outcomes and satisfaction scores," said Dr. Wick. *OTW* asked Dr. Wick why there isn't more information on the relationship between patients' preoperative expectations for pain relief and subsequent functional and satisfaction outcomes following this type of surgery.

"I think there are multiple factors that have limited the amount of information available on patients' preoperative expectations and subsequent functional and satisfaction outcomes following 1-2 level anterior cervical surgery for degenerative conditions," said Dr. Wick.

"First, collecting preoperative expectation data from patients can be challenging—this is reflected by the variety of instruments/forms previous studies have used to assess preoperative expectations. We collect preoperative expectations for all patients using a version of the validated 'MODEMS' scale [Musculoskeletal Outcomes Data Evaluation and Management System] and therefore had readily available expectations data for a large number of patients." ♦

First of a Series on the History of Modern Orthopedics and Spine Surgery

FROM OUR READERS

"Robin Young has so meticulously and thoroughly crafted the incredible and true story of the spine and orthopedic industry - I felt as though I was reliving every moment. Fascinating recollection. A real page turner. Kudos!" **– Alex Lukianov, Founder and past chairman & CEO of NuVasive**

"Spectacular book. Loved it!" **– Alexander R. Vaccaro, M.D., Ph.D., M.B.A., President Rothman Orthopedic Institute, Philadelphia, PA.**

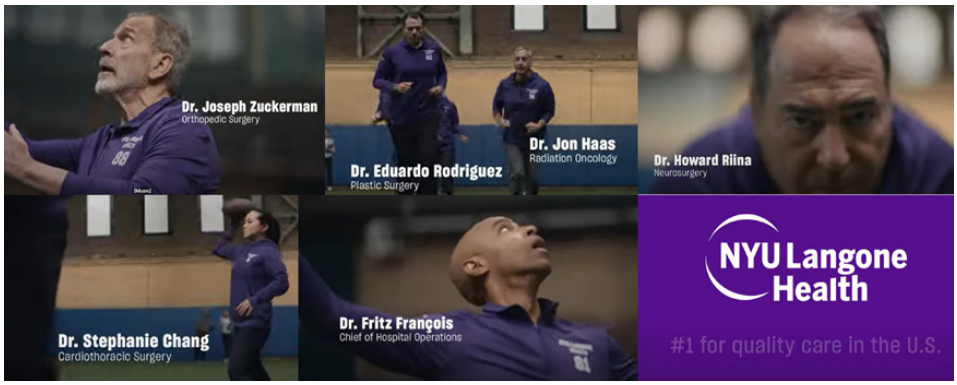
"Robin Young has taken us on a splendid journey from the origins of orthopedic surgery as a specialty through it's early development to the important and essential collaboration between orthopedic surgeons, engineers and industry that has produced a compendium of treatments that have enriched the lives of millions of patients. For those of us who love orthopedic surgery, the best part is that this is only volume 1 with more to come!!" **– Joseph D. Zuckerman, M.D., Walter A.L. Thompson Professor of Orthopedic Surgery and Chair, Department of Orthopedic Surgery, NYU School of Medicine, New York, NY**

"Robin Young describes the early development of orthopedic medical devices and the intersection of surgeons, corporate, and engineering leaders. The manuscript is an easy read. Dr. Charnley who is most responsible for bringing innovation to orthopedic surgery, like Thomas Edison, failed at many techniques and materials before finding success. Ron Pickard built Danek into the industry leader Sofamor-Danek but more importantly withstood the attacks by plaintiff attorneys in their pedicle screw ligation. In both cases and as demonstrated in many other examples in the book, holding to what is best for patients and to basic core principles will result in the best outcomes. Robin shows convincingly how anyone who has the idea, commitment, can assemble a team and overcome the many hurdles and failures can produce dramatic results that can help patients and revolutionize an industry." **– Paul A. Anderson MD, Former Professor of Orthopedic Surgery, Neurologic Surgery and Biomedical Engineering, University of Wisconsin, Madison.**

"Anyone not knowing the history might think the currently available orthopedic devices either always existed or formed on their own, but each product needed the right people at the right place at the right time working with a company to develop, produce, and introduce to surgeons the new advance. This book chronicles the roots of today's orthopedic/spine industry and tells the untold story of often unknown people who by their actions ended up helping millions of orthopedic surgery patients around the world. "The book Robin Young wrote is is Orthopedics This Last Century. I recommend all the OTW readers order a copy." **– Richard Treharne, Ph.D., Vice President Orthopedic Research, Active Implants, Inc., Memphis, TN**

COMPANY

NYU Langone's Super Bowl Ad – In Case You Missed It



Source: NYU Langone Health

The best ad in this year's Super Bowl was from and about NYU Langone Health—part of a broader campaign to highlight the system's integrated approach and exceptional patient outcomes. If you didn't see it, get ready to stand up and cheer. It was amazing.

That guy at the end of the ad doing the shimmy shimmy—that's the inimitable and irrepressible Joseph D. Zuckerman, M.D., FAOA, pillar of the Orthopaedic Profession, Walter A. Thompson Professor of Orthopedic Surgery at the NYU Grossman School of Medicine and NYU Langone's Chair of the Department of Orthopedic Surgery.

Dr. Zuckerman, a Cornell and Medical College of Wisconsin grad, told *OTW*, "It was a lot of fun to do. Can you believe it took nine hours to film a 30 second commercial?"

Actually, I can't believe Joe had those moves.

Seriously, though, nine hours for 30 seconds of brilliance? We believe it. We see that kind commitment to excellence every day in the modern practice of musculoskeletal care.

NYU Langone's Salute to The Practice of Medicine – The Back Story

Vizient, which is the new name for the University Health Consortium—an organization which collects and analyzes hospital data for its 170 members or so—has consistently rated NYU Langone number one, Dr. Zuckerman told *OTW*, "for quality, length of stay, readmissions, mortality, hospital acquired conditions, patient safety, all those things, across the United States."

"That's a great story and we wanted people to know about that."

So, with Zuckerman leading the way, NYU Langone decided to create a 30-second ad that the system will air over the next nine months and debuted at the 2025 Super Bowl.

The ad itself is about NYU Langone's top doctors attempting to play football but really highlighting the top-ranked system's integrated team approach to medicine.

Ad filming began at 8am, not early for most caregivers, but in this case, there is a remarkable back story. "Stephanie Chang, M.D., the quarterback in the ad, had a double lung transplant at 2:30 that same morning. After surgery, she went home, changed, and came back for the 8 o'clock start of filming," recalled Zuckerman.

"Joining Dr. Chang on the NYU Langone super bowl team was Fritz François, who's the chief of hospital operations. He, more than anyone else, is responsible for that whole Vizient rating. Joining them was Eddie Rodriguez, M.D. and chief of plastic surgery who has performed face transplants, including the world's first face and whole-eye transplant. And there was Howard Riina, M.D., globally renowned neurosurgeon, and Jon Haas, M.D., chair of radiation oncology department," said Dr. Zuckerman.

"We truly have an integrated healthcare system that succeeds because of our team approach. Like athletics, right? Everything is based upon is based upon a team."

"If caregivers don't function as a team, they're not gonna win."

The ad is part of a broader NYU Langone campaign called Better Health Starts with a Better Health System. The campaign makes the point that choosing the right health system, particularly one with strong length of stay, readmission and other patient outcome stats, is key to patient success and for NYU Langone, an important differentiator.

The Reaction

Coming to work the Monday after the Super Bowl, all the surgeons in the ad heard from their patients. "I saw 20 patients that first clinic day after the Super Bowl, and 17, as soon as I walked in the room, brought up the commercial. It's been absolutely, uniformly positive," said Dr. Zuckerman.

The creative team behind the ad were:

- NYU Langone's Communications, Marketing, Government and Community Affairs team
- Creative Agency: BBDO New York,
- Director: Aaron Stoller,
- Production: Biscuit Filmworks,
- Edit: Arcade
- Legendary Athlete: Victor Cruz

Big Heart

Has the Super Bowl ever featured a big-hearted ad like this from a major hospital system?

If so, I can't recall it.

NYU Langone. Thanks guys, you made us all proud. — *RRY*

Onkos Surgical Secures $35M

New Jersey-based Onkos Surgical®, whose goal is to solve seemingly impossible surgical problems like infection risk or failed orthopedic implants, has secured a $35 million venture loan facility from Horizon Technology Finance Corporation.

Horizon Technology Finance Corporation is an affiliate of Monroe Capital, an asset management firm. The finance company provides secured loans to venture capital-backed companies in select industries. Of the $35 million, $30 million has been initially funded.

Onkos Surgical develops solutions for complex orthopedic conditions. According to Onkos, its product portfolio serves "adult and pediatric patients who have bone loss from tumor, trauma, or revision of failed orthopaedic implants," with a family of products including: ELEOS™ limb salvage system featuring BioGrip® technology; NanoCept™ antibacterial implant technology; JTS extendible prothesis; and My3D® personalized solutions.

Onkos Surgical CEO and Co-founder Patrick Treacy said, "We are committed to transforming the standard of care across complex orthopaedic procedures, with the goals of providing benefit to patients, clinicians, and health systems while creating value for our investors as we expand our footprint in a $3 billion market."

Treacy continued, "Horizon's support will further fuel our growth engine by accelerating the commercialization of NanoCept, a transformative and first-of-its-kind orthopaedic technology that has substantial potential to meaningfully improve patient outcomes."

NanoCept is based on a proprietary coating. According to the press release, it is "used on FDA-granted orthopaedic implants to reduce bacterial contamination at the time of implantation." Last year it was granted the "first-ever FDA De Novo authorization for an antibacterial coating technology used on orthopaedic implants."

Horizon President Gerald A. Michaud said, "Onkos Surgical is disrupting the orthopaedic marketplace with a suite of differentiated products, including NanoCept."

Michaud continued, "We are pleased to support the growth of Onkos as it continues to innovate novel solutions that address diverse unmet needs in a growing and important market segment." — *KD*

ONKOS SURGICAL

Source: Onkos Surgical

Centinel Spine's Incredible 2024 Sales Report

Centinel Spine's prodisc Total Disc Replacement set new records in 2024, according to the company, and this accelerated growth is expected to continue in 2025.

Centinel Spine, LLC is a West-Chester, Pennsylvania-based global medical device company exclusively focused on treating cervical and lumbar spinal disease with its total disc replacement technology platform.

Centinel Spine CEO Steve Murray said in a statement, "The Centinel Spine team achieved records in all aspects of our global business in 2024. We are exclusively committed to total disc replacement, with the goal of becoming the clear global leader in this fast-growing segment of the spine market."

prodisc Total Disc Replacement revenue for the full-year 2024 was over $95 million, up 38% over 2023.

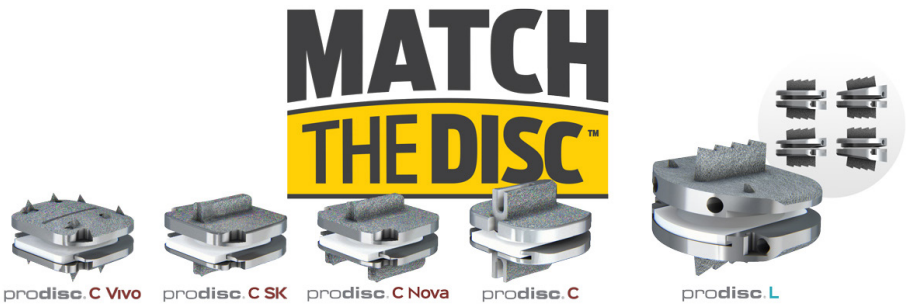
Both international and U.S. sales grew substantially during the year. In the U.S., sales increased 41% while international sales experienced a 24% year-over-year increase.

prodisc Cervical revenue for the year was over $59 million, which was a 39% year-over-year increase.

prodisc Lumbar revenue was almost $36 million, a 35% improvement to 2023. The company also reported that over 1,000 U.S. healthcare facilities used prodisc in 2024, up 28% from the previous year.

Fourth Quarter Highlights

For the fourth quarter alone, prodisc Total Disc Replacement revenue was up 47% from the year before with a revenue of almost $30 million.



Centinel Spine's Match-The-Disc Total Disc Replacement System / Source: Centinel Spine, LLC

- Global prodisc Cervical revenue of almost $17 million, a 38% year over year increase.
- Global prodisc Lumbar revenue of almost $13 million, a 62% year over year increase.
- U.S. prodisc Total Disc Replacement revenue of more than $25 million, up 52% from the previous year.
- International prodisc Total Disc Replacement revenue of $4.6 million, up 27% from the previous year.

Match-the-Disc prodisc Cervical TDR System

Since its limited release in Third Quarter 2022, the Match-The-Disc prodisc Cervical TDR System has steadily increased its sales growth. By the end of 2024, more than 9,000 procedures had been completed in the U.S. using the new system, making it a major driver in the record growth in U.S. prodisc Cervical sales.

More than 900 surgeons are now using the system. In 2024, new surgeons were added at an average of more than 100 a quarter, according to the company.

The prodisc C Vivo implant features a domed, keel-less endplate that make one-step implantation easier. It also has unique spikes that provide equivalent fixation to keeled devices.

The prodisc C SK features the flat endplates and keel fixation of prodisc C, but it has a smaller keel, and the preparation of the keel is simplified.

The prodisc C Nova has unique trikeels designed to improve fixation in certain endplate morphologies.

All three of these implants were designed with an anatomical trapezoidal footprint shape that lessens intraoperative remodeling.

The original prodisc C implants utilize flat endplates with larger central keels. What makes prodisc CORE technology unique is its fixed center of rotation which was designed to stabilize the motion segment and resist shear forces.

A Recipe for Continued Growth in 2025

Murray said all of this has positioned the company for accelerated growth in 2025. One of the key ingredients for another record year is that with the recent release of the prodisc C Nova

technology, Centinel Spine now offers four anatomic products in the Match-the-Disc prodisc Cervical TDR System.

pro**disc** Lumbar revenue is also continuing to grow. Surgeons can now choose anatomic endplates that provide a more customized fit to the patient through full range of levels L3 to S1. Reimbursement for lumbar total disc replacement has also been expanding increasing access to patients, and now there is more positive long-term implant survivorship data available to validate the pro**disc** L Lumbar total disc replacement system.

Other important ingredients the company said are:

- Centinel Spine added 665 new pro**disc** users in the U.S. in 2024, which was a 90% increase from the previous year.
- As more patients become aware of the potential benefits of these motion-preserving systems, the demand for them is expected to increase.
- Through the company's global Medical Education program, over 800 surgeons were trained in 2024.
- The pro**disc** implant manufacturing capacity expanded throughout 2024 strengthening the supply chain.

Murray added, "The pro**disc** technology not only offers the benefits of our 'Match-the-Disc' innovation, it is coupled with the longest demonstrated history of clinical success in disc replacement. We are all-in on total disc replacement and well-positioned for continued success in 2025 and beyond." — *TR*

LEGAL

Florida Sales Rep Ordered to Pay $19 million

A Florida federal judge has issued a report and recommended that a sales representative pay more than $19 million to resolve a contractual dispute with NuVasive, Inc., now a part of Globus Medical, Inc.this accelerated growth is expected to continue in 2025.

Centinel Spine, LLC is a West-Chester, Pennsylvania-based global medical device company exclusively focused on treating cervical and lumbar spinal disease with its total disc replacement technology platform.

In the order and report and recommendation NuVasive Inc. is named as the plaintiff. The following are listed as defendants: Absolute Medical, LLC; Greg Soufleris; and Absolute Medical Systems, LLC.

NuVasive is a California-based medical device company. It develops devices and procedures for minimally invasive spinal surgery.

According to court documents, NuVasive sold its products in central Florida via an "exclusive distribution agreement with Absolute Medical, LLC, a company owned by Greg Soufleris." Allegedly, before the end of the agreement, "Soufleris informed NuVasive that he was dissolving Absolute Medical and ending its business relationship with NuVasive." Subsequently, Soufleris purportedly "started a new company, Absolute Medical Systems, LLC, which began selling products for one of NuVasive's competitors."

The litigation has been ongoing since 2017. The case history is extensive and according to the order and report and recommendation, over the course

Source: Pexels and Nicola Barts

of litigation the parties have "engaged in extensive discovery and dispositive motions practice, arbitration proceedings and motions related thereto, a bankruptcy case and related stay, and interlocutory appellate proceedings."

In 2023, according to court documents, a district judge found that the defendants "engaged in a course of 'brazen, serious misconduct,' to include numerous falsehoods, misrepresentations, intentional spoliation of evidence, and falsified testimony." The defendants were sanctioned, and a default judgment was entered in favor of NuVasive as to all claims.

The order and report and recommendation was issued related to damages in the matter. The court awarded NuVasive a total of $19,361,057.00 in damages. Per court documents, the damages were broken down as follows: "$13,645,938.00 in lost profits under Delaware law for the breach of contract claims"; "$4,415,119.00 in pre-judgment interest under Delaware law for the breach of contract claims, with additional interest accruing daily at a rate of $2,524.00 through the entry of judgment"; and "$1,300,000.00 in attorneys' fees and costs under Delaware law for the breach of contract claims."

The parties have 14 days from the date of the report and recommendation to serve and file written objections. The written objections can apply to the report and recommendation's factual findings and legal conclusions. As of January 27, 2025, no written objections had been filed.

The case is captioned NuVasive Inc. v. Absolute Medical LLC et al. It is case number 6:17-cv-02206 and was filed in the U.S. District Court for the Middle District of Florida. — *KD*

SPINE

AANS February 20th Spine Summit Features Spine Who's Who

The American Association of Neurological Surgeons is bringing orthopedic spine surgeons and neurosurgeons together again this year for its premier spine summit.

The 2025 AANS Spine Summit will be held February 20-23, 2025, in Tampa, Florida. Juan S. Uribe, M.D., FAANS, AANS/Congress of Neurological Surgeons Section on Disorders of the Spine & Peripheral Nerves Chair, recently shared with *Orthopedics This Week* what makes this spine meeting a premier event.

"It is the only meeting to bring together orthopedic spine surgeons and neurosurgeons to share research and to network," he explained.

"Ours is the only meeting exclusively for spine surgeons and peripheral nerve professionals. It is superfriendly with surgeons and with industry. It is 100% surgeon driven. Normally the North American Spine Society is the lead spine meeting, but in last five years ours has taken the lead," said Uribe who is also Chief of Spinal Disorders, Sonntag Chair of Spine Research and Vice Chair of Neurosurgery at the Barrow Neurological Institute.

This year's theme is "Innovation in Surgical Technology" and the summit is welcoming Nikki Bella (Stephanie Nicole Garcia Colace) as a special keynote speaker. She is a former spine patient and World Wrestling Entertainment wrestler.

Another highlight of the meeting, he said, will be the CEOs of the spine implant industry sharing their latest innovations.

"We invited all the rockstars of spine and neurosurgery. It will basically be a who's who in spine," Uribe said. "We will also be co-partnering with seven other spine societies during the summit as well."

Highlights from the 2024 AANS Spine Summit / Source: American Association of Neurological Surgeons

Along with awards for the best research abstracts, Shay Bess, M.D. will be presented with the Emeritus orthopedic award. He is the driving force behind the International Spine Study Group. He specializes in scoliosis and spine deformity conditions. Dr. Luiz Pimenta who invented the lateral approach to the lumbar spine will receive the Emeritus neurosurgery award.

The program also includes debates between orthopedic spine and neurosurgeons on hot, controversial topics like the ideal way to place a lumbar pedicle screw.

"There will also be a lot of Continuing Medical Education activities. We will have more than 1,000 participants this year," Uribe said.

"If you are a spine surgeon, you won't want to miss this meeting. Every ground-break innovation will be highlighted, not only in abstracts, but in lectures by leading spine surgeons and there will be lots of opportunities to interact with the faculty."

"The venue is amazing; it is brand new; and the weather in Tampa is nice this time of year."

Your Guide to the Summit's Highlights

Thursday, February 20, 2025

Special Course 1 – Transforming Spine Surgery: The Power of Artificial Intelligence, Registries and Data Science, 1:30 p.m. – 5:30 p.m.

In partnership with the American Academy of Orthopaedic Surgeons, Mohamad Bydon, M.D., a neurosurgeon at the Mayo Clinic, will lead an exploration of the intersection of spine surgery, data science, registries, and Artificial Intelligence. Attendees will hear from leading spine surgeons and industry experts on the use of registries and AI in spine surgery.

Friday, February 21, 2025

Scientific Session 2: The Future of Spine Surgery: What Does It Look Like?, 11:30 a.m. – 12:30 p.m.

Dr. Uribe and Erica Bisson, M.D., MPH of the University of Utah, will moderate a scientific session on the future of spine surgery from an orthopedic perspective as well as a neurological perspective and the pros and cons of a combined ortho/neuro approach to spine. Speakers include Lawrence G. Lenke, M.D. of Columbia University and Christopher I. Shaffrey, M.D., FACS, FAANS of Duke University Medical Center.

Controversial Spine Topics: Debates by the Experts, 5:15 p.m. to 6:15 p.m.

Luis Tumialan, M.D. of the Barrow Neurological Institute and Domagoj Coric, M.D. of Wake Forest University will moderate the debates. The topics will include "PT With Radiographic Cervical Stenosis But No Arm Symptoms Needing Low Back Surgery," "Lumbar Pedicle Screw Placement: The Ideal Way" and "Adjacent L3-4 Stenosis After a Flat L4-5 Fusion Years Ago".

Saturday, February 22, 2025

Specialty Abstract Sessions – Latin America/Spanish/Portuguese Abstracts

Scientific Session 5: Artificial Intelligence: How It Will Affect Your Practice, 9:30 a.m. – 11:00 a.m.

Moderated by Mohamad Bydon, M.D. of the Mayo Clinic and Erica Bisson, M.D., MPH of the University of Utah, this session will cover both the negative and positive impact AI is having on spine surgery including the use of ChatGPT in surgical practices, the use of AI for preop planning for robotic spine surgery, and the ethical and medical-legal aspects of AI use in patient care.

Cahill Debates, 11:00 a.m. to 12:30 p.m.

Moderated by Michael Steinmetz, M.D., of the Cleveland Clinic, Zoher Ghogawala, M.D., of UMass Chan Medical School, and David Polly Jr., M.D. of the University of Minnesota, the Cahill Debates will cover hot topics like limited lumbar fusion versus T10 to the Pelvis surgery, whether 3D titanium nanotechnology cages actually fuse better or are just an overprice allograft in Anterior Cervical Discectomy and Fusion and the cost-effectiveness of custom, patient specific implants.

Speakers will include Gregory M. Mundis, Jr. M.D. of the San Diego Spine Foundation, Daniel Resnick, M.D. of the University of Wisconsin, Peter G. Passias, M.D. of Duke University, and Sigurd Berven, M.D. of University of California, San Francisco.

Sunday, February 23, 2025

Scientific Session 6: Modern Spine Tumor Management: Latest Updates and Advances, 9:30 a.m. to 11:00 a.m.

Moderated by John Shin, M.D., FAANS of the University of Pennsylvania and Matthew Goodwin, M.D. of the Washington University School of Medicine and Nicholas Theodore, M.D., MS of Johns Hopkins University, this scientific session will explore how advances in robotic surgery are transforming spine tumor surgery.

Speakers include Ori Barzilai, M.D. of Memorial Sloan Kettering, Matthew Goodwin, M.D. of Washington University, Ziya L. Gokaslan, M.D. of Brown

University and Lifespan Health System, Roger Hartl, M.D. of Weill Cornell Medicine and New York Presbyterian Hospital-Och Spine and Laurence Rhines, M.D. of MD Anderson Cancer Center.

Topics include patient-specific custom implants, pre-operative tumor surgery planning using virtual and extended reality, augmented reality for intradural spine tumor surgery planning and resection, MIS Prone Lateral and the use of 3D Models and Virtual Cutting Guides.— *TR*

FDA Clears Cervical Spine Fracture Analysis Software

The U.S. Food and Drug Administration (FDA) has granted 510(k) clearance to a radiological computer aided triage and notification software for the detection of cervical spine fractures.

According to the FDA's summary document, the device is a "radiological computer aided triage and notification software indicated for use in the analysis of cervical spine CT images." It is "intended to assist hospital networks and appropriately trained physician specialists by flagging and communication of suspected positive findings compatible with acute cervical spine fractures including non-displaced fracture lines and/or displaced fracture fragments."

The device utilizes "an artificial intelligence algorithm to analyze images and highlight cases with detected findings on a standalone application in parallel to the ongoing standard of care image interpretation." It is "not designed to detect vertebral compression fractures."

The user of the device is "presented with notifications for cases with suspected findings." Device notifications are meant for informational purposes only and not meant for diagnostic purposes. Furthermore, the device "does not alter the original medical image, and it is not intended to be used as a diagnostic device."

Additionally, the results from the device are "intended to be used in conjunction with other patient information and based on professional judgment to assist with triage/prioritization of medical images." Clinicians who receive the notifications are "ultimately responsible for reviewing full images per the standard of care."

in order to qualify for shorter and earlier 510(k) clearance a device must be substantially equivalent to a predicate device. Here, the device is substantially equivalent to the BriefCase for CSF Triage manufactured by Aidoc Medical, Ltd. It is substantially equivalent with regard to indications for use, performance, and technological characteristics. The predicate device is a radiological computer aided triage and notification software.

France-based Avicenna.AI submitted the device for 510(k) clearance. Avicenna.AI is a medical imaging company focused on artificial intelligence solutions. The device is called the CINA-CSpine.

Avicenna.AI Co-Founder and CEO Cyril Di Grandi commented, "Cervical spine fractures are serious injuries that require prompt and appropriate medical attention, especially if the spinal cord is involved, so accurate diagnosis is essential."

Di Grandi continued, "With CINA-CSpine, we aim to help reduce the delay between scan and interpretation, which is critical in the treatment of this condition." — *KD*

Courtesy of Avicenna.AIgeons

Spine Pain Catastrophizing: Measurement, Treatment

Source: Shutterstock

The lived experience of severe pain, understandably, can lead to a process of catastrophizing, which is a cognitive distortion where patients assume the worst possible outcome in any situation where it is unlikely, not just spine surgery. Catastrophizing can manifest in two ways:

- **Magnification:** Making a current situation seem like a catastrophe
- **Future catastrophizing:** Imagining the worst possible outcome of a future event

In such cases, how can a caregiver know when to refer a spine patient to a psychologist?

Researchers from The University of Iowa Hospitals and Clinics Department of Orthopedics and Rehabilitation, who use the Pain Catastrophizing Scale to assess a patient's response to pain and identify any catastrophic thinking, designed a study which could, possibly, serve as the basis for a psychological referral protocol.

Their study, "Evaluation of Pain Catastrophizing Scale for surgical referral to pain psychology in patients undergoing spinal surgery," was published in the September 2024 edition of *NASSJ*.

Co-author Valerie J. Keffala, Ph.D., clinical associate professor at University of Iowa Health Care, a Board-Certified Clinical Health Psychologist specializing in pain management (and is the *only* person in the state of Iowa with these credentials), told *OTW*, "I work with patients who experience persistent pain, though I also work with patients presenting a variety of medical health concerns across the medical spectrum. I have clinical expertise in using Acceptance and Commitment Therapy, which is my primary therapeutic intervention. I have been part of the Department of Orthopedics and Rehabilitation (we are not just a surgical department) for nearly 30 years."

"This study came about when a medical student at University of Iowa Hospitals and Clinics—Shray Kumar (first author)—was interested in completing a study in the department of Orthopedics and Rehabilitation. He approached Dr. Catherine Olinger, clinical assistant professor in that department, who then brought the idea to me."

What Is the Pain Catastrophizing Scale?

The Pain Catastrophizing Scale is a validated patient-reported outcome measure which quantifies experienced pain and maps underlying thought processes. Patients rate 13 statements describing pain with a score from 0–4 for each question, 0 being seen as "not at all" and 4 being "all the time. Additionally, the scale poses questions which cover rumination, magnification, and helplessness, indicators of intrusive thoughts, inability to cope with pain, and exacerbation of pain symptoms.

Once each patient finished filling out the scale, researchers sum the scores. The maximum score is 52, minimum 0.

As Dr. Keffala explained to OTW, "I have been interested in using Pain Catastrophizing Scale as a marker for referring patients to pre- or post-surgical psychological interventions. Spine surgeons are not trained to make decisions about the need for psychological intervention or, usually, to consider psychological factors in pre-surgical screening (see The Psychology of Spine Surgery by Andrew R. Block for a good review of this topic)."

"Therefore, we wanted to see if the Pain Catastrophizing Scale might be a helpful screening tool for psychological evaluation and intervention in this setting and

compare that to surgeons' judgments about the need of referral for psychological evaluation and intervention."

Study Conclusions

According to Keffala, "This study showed that the Pain Catastrophizing Scale was a useful tool for helping identify psychological distress (rumination, magnification, and hopelessness) in patients experiencing pain.

"Though it is only one tool, it can bring the patient's experience of distress to the attention of clinicians, whereupon a referral to a pain psychologist can be made," explained Keffala.

Furthermore, "We looked at three orthopedic surgeons' decision-making process in referring patients to me, the department clinical health/pain psychologist, comparing their responses to each other and to Pain Catastrophizing Scale standardized scores."

Keffala noted that spine surgeons are typically not trained to detect patients with significant psychological distress symptoms which may affect their patients pain levels. "Using standardized assessment, such as the Pain Catastrophizing Scale, and clear operationally determined criteria in pre-surgical screening can help identify patients who would benefit from evaluation and intervention by a clinical health psychologist who specializes in pain management prior to surgery."

Treating Pain Triggered Catastrophizing

Dr. Keffala explained to *OTW* that some interventions, notably Acceptance and Commitment Therapy, have shown promise for patients for whom pain has led to catastrophizing. "Acceptance and Commitment Therapy uses six core processes (acceptance/willingness, cognitive diffusion, being in the present moment, self as context/perspective taking, values, and committed action) to help build psychological flexibility and live in ways that reflect what matters to patient (their values)."

"Acceptance and Commitment Therapy can help individuals change their relationship with their health concerns, including persistent pain, so that it no longer becomes the focus of their lives, improving quality of life and mental health."

"My work in Acceptance and Commitment Therapy stresses that pain is part of the patient's experience, it's not who they are. Though experience of pain may be present, the experience is always changing. I focus with patients on how they are responding to their experience of pain. We explore the actions patients can take to live in a manner that reflects the things and people who matter to them."

The Key? Psychological Flexibility

"While living with persistent pain will likely be different than life prior to the presence of pain, one can continue to live a life rich with meaning and purpose. Our minds set rigid rules and expectations about how things 'must' be, but reality shows us that when we live with psychological flexibility, rather than rigidity, there are many ways to engage in our lives with meaning and purpose. Following Acceptance and Commitment Therapy interventions patients typically demonstrate improvement in function and quality of life, and reduction of anxiety and depression. There are hundreds of randomized controlled trials using Acceptance and Commitment Therapy across a wide number of persistent pain and health concerns demonstrating this." — *EH*

SPORTS MEDICINE

Game Changing Innovation at 2025 Sports Med Meeting

Innovation is the name of the game at this year's American Medical Society for Sports Medicine in Kansas City, Missouri. From April 22 through April 27, attendees will be "Elevating the Field: Inspiring Innovation in Sports Medicine."

Source: AMSSM via Facebook

Andrea Kussman, M.D., this year's program chair and a primary care sports medicine and family medicine physician at the University of Washington, shared with *Orthopedics This Week* some of the highlights of the upcoming meeting.

She told *OTW*, "The conference is geared to nonoperative sports medicine doctors. It is a great resource, especially for the provider population."

She added, "It will be a nice blend of important updates on sports medicine—cutting edge innovations as well as essential standard operations."

Kussman described the meeting as a good blend of large sessions and smaller groups as well as plenty of opportunities to get involved in various projects and committees.

Attendees will also be able to schedule one-to-one tutorials and attend pre-conferences on Advanced Sports Ultrasound, Essentials of Sports Ultrasound Lower Extremity, Therapeutic Needling, Extracorporeal shockwave therapy, Sideline Management Assessment Response Techniques – Emergency Sports Trauma Workship, Hands-On Workshop: Complex Laceration Repairs In The Training Room, Hands-On Sports Ultrasound Workshop, Orthobiologics and many more.

She said that they have planned an all-star lineup of both national and international experts to challenge attendees to apply cutting-edge research to their clinical practices and to connect with diverse patients.

Keynote speakers will include Olympian Suni Lee who will deliver the Presidential Keynote, Paul Dijkstra, MBChB, DPhil, who will discuss artificial intelligence (AI) in sports medicine in the Hough Memorial Lecture, and Nonhlanhla Mkumbuzi, PT, Ph.D., who will share innovations from low-resource settings in the Anderson Memorial Lecture.

Hot topics to be explored during the meeting include AI in sports medicine, REDS and female/male athlete triad, wearable technology, the efficacy of screening tools, surgical innovations, novel muscular injury treatment, BEAR protocol for ACL tears, and cross-bracing.

The meeting will also feature case-based sessions, evidence-based fracture care, sideline management essentials, and updates from the Collaborative Research Network on safe sport environments and the latest research findings.

This year there will be a new special interest group on the Care of the Underserved, and popular programs like the MSK Exam Boot Camp, Fellowship Fair and the Fellows Quiz Bowl will return.

If you miss anything, she said, educational sessions will also be available through online video access and audio playback.

The Fellows Quiz Bowl is making a return to allow fellowship programs to participate in some friendly game-based competition. Educational sessions will be available via online video access and audio playback, so you never miss key insights.

Program Highlights

Wednesday, April 23, 2025

2:30 p.m. - 4:00 p.m. Session #1: Wearable Technology in Sport: Turning Big Data into W's

5:00 p.m. – 6:30 p.m. Session #2: Muscle and Tendon Injuries: Clinical Pearls for Diagnosis and Treatment

Thursday, April 24, 2025

8:00 a.m. – 9:30 a.m. Session #3: ACL Care from Start to Finish — During the session, Martha Murray, M.D. from Boston Children's Hospital will address if reconstruction is the only reasonable surgical option for an ACL Tear and Tom Cross, MBBS, DCH from The Stadium Sports Medicine Clinic in Sydney, Australia will discuss the Cross Brace Protocol.

10:30 a.m. – 12:00 p.m. Session #4: Concurrent Sessions: Fuel Success – The Role of Energy Balance in Athletic Health and Performance — Louise Burke, OAM, Ph.D., APD, a sports dietitian at the Australian Catholic University will do a segment on low carbohydrate availability.

12:30 p.m. – 1:30 p.m. Team Physician Breakout Sessions

- Collegiate/NCAA
- Olympic/Paralympic (USOPC)
- Professional

Friday, April 25, 2025

11:00 a.m. – 12:30 p.m. Session #8B: Concurrent Sessions: Upper Extremity Sports – Using Technology and Science to Improve Diagnosis, Treatment and Performance.

2:00 p.m. – 3:30 p.m. Session #9A: Concurrent Sessions: Commonly Missed Musculoskeletal Problems in Sports Medicine.

Session #9B at same time: Elevating the Female Athlete – Optimizing Health and Performance — Margie H. Davenport, Ph.D., an associate professor at University of Alberta in Canada, will give an update on Postpartum Return to Sport.

Saturday, April 26, 2025

2:00 p.m. – 3:30 p.m. Session #13: AI in Sports Medicine

4:30 p.m. – 6:00 p.m. Session #14: Dream Big – Sleeping for Success – Jesse D. Cooke, Ph.D. of the University of Wisconsin-Madison, will lead the segment on "Building a Sleep Heath Program for Athletes: Best Practices and Essential Principles".

Sunday, April 27, 2025

9:45 a.m. – 11:15 a.m. Session #16: Practical Applications from The Cutting Edge Of Research – Top Articles of 2024 and CRN Highlights.

Instructional Course Lectures

Instructional Course Lectures will also be held throughout the meeting in the early morning. Some of the topics will include:

- A Day in the Life of a Sports Medicine Physician
- Intraosseous Orthobiologics: Where Are We?
- Management of Menstrual Symptoms in the Athlete
- Sideline Cardiac Arrhythmia Emergencies
- What is the Work-up for Return to Sport for Exertional Heat Stroke, Exertional Rhabdomyolysis and ECAST?
- Can We Crack the Code of Rib Pain in Athletes?
- How to Perform Genicular Nerve RFAs and Incorporate RFAs into Your Practice

Kussman said that her best advice for getting the most out of this meeting is to not limit yourself to just the main stage events. Also check out the Instruction Course Lectures (ICL?), pre-conferences, interest groups and committees.

She emphasized that socializing is also important and that the AMSSM Foundation Party at the National Collegiate Basketball Hall of Fame on Friday night is always a lot of fun.

For more information about this year' program, visit amssm.org. — *TR*

TRAUMA

Massive 639,000 Patient Fracture Study Released

A research team from the Warren Alpert Medical School of Brown University research team collected data from 638,999 cervical and thoracic fractures reported in the U.S. between

Source: Shutterstock

2003 to 2021. Their work, "What Is the Epidemiology of Cervical and Thoracic Spine Fractures?" was published in the December 1, 2024 edition of *Clinical Orthopaedics and Related Research*.

Describing the impetus for this work, co-author Bassel G. Diebo, M.D., assistant professor of orthopedics at the Warren Alpert Medical School, Brown University, told *OTW*, "Insufficiently powered studies exist due to the high proportion of undiagnosed fractures, limited focus on younger populations, and challenges in collecting data in trauma settings, where the unpredictable timing and urgency of injuries make comprehensive data collection difficult."

Armed with the United States National Electronic Injury Surveillance System-All Injury Program database, the researchers analyzed:

- location of injury (the most common categories being "home," "recreation/sports facility," or "public property"),
- mechanism of injury ("fall," "sports," or "other," which included injuries of unknown mechanism along with motor vehicle accidents, auto-pedestrian, gunshot wounds), and
- disposition ("admitted" or "treated and released").

Study Results: Aging Population and Osteoporosis Driving Higher Fracture Rates

The team found that the incidence of cervical and thoracic fractures increased from 2.0 and 3.6 per 10,000 person-years in 2003 to 14.5 and 19.9 in 2021, respectively.

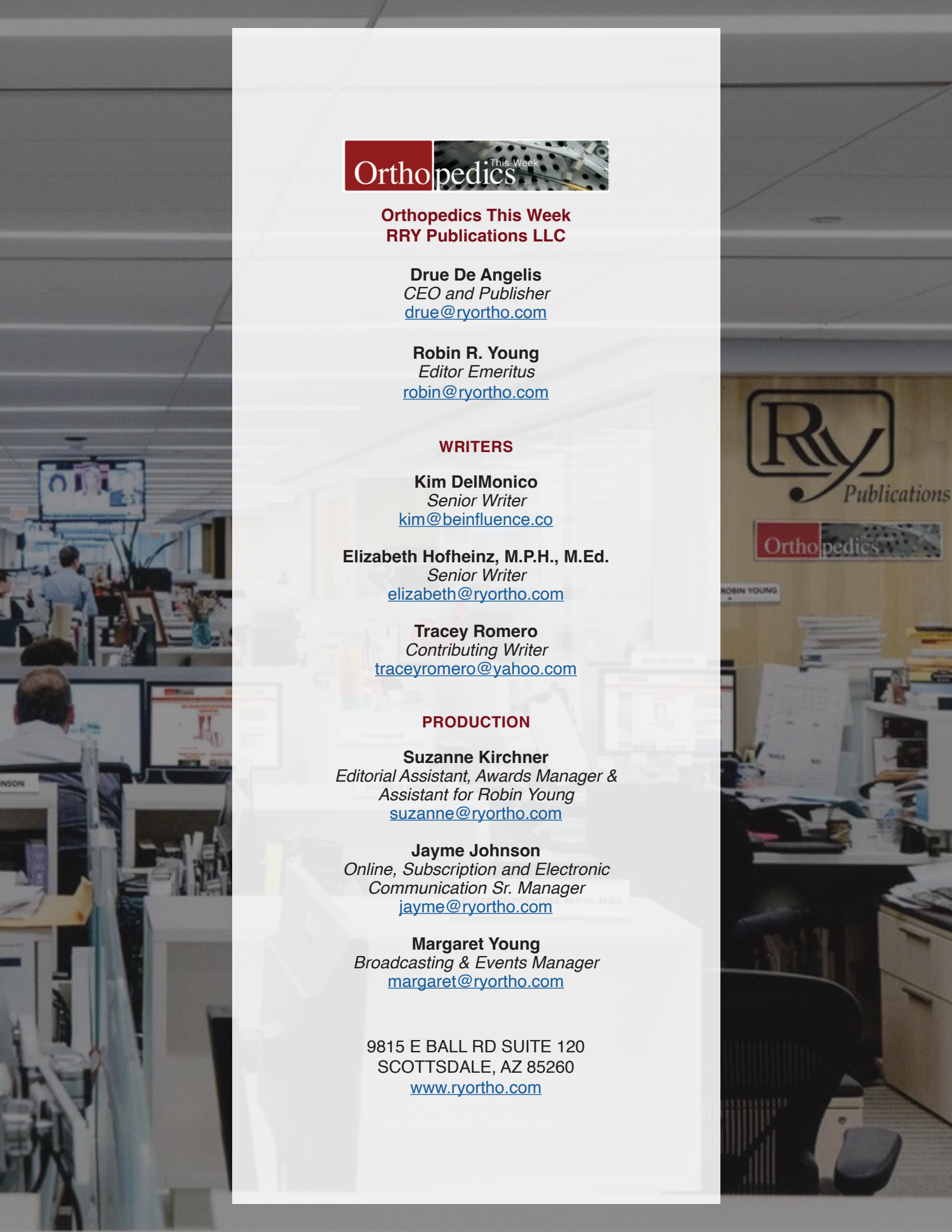
Specifically, the authors wrote, "Incidence rates of cervical and thoracic fractures increased for all age groups from 2003 to 2021, with peak incidence and the highest rate of change in individuals 80 years or older."

"Most injuries occurred at home (median 69%), which were more likely to impact older individuals (median [range] age 75 [2 to 106] years) and females (median 61% of home injuries); injuries at recreation/sports facilities impacted younger individuals (median 32 [3 to 96] years) and male patients (median 76% of sports facility injuries). Falls were the most common injury mechanism across all years, with females more likely to be impacted than males. The proportion of admissions increased from 33% in 2003 to 50% in 2021, while the proportion of treated and released patients decreased from 53% to 35% in the same period."

"We believe this large increase is primarily due to the aging population, rising osteoporosis prevalence, and higher fall rates among older adults," stated Dr. Diebo.

"The findings from our study could potentially drive changes that affect clinical care. Early diagnosis and management of osteoporosis might reduce fracture incidences and associated healthcare costs. Some may argue that increased screening could initially strain healthcare systems, but it can potentially lower long-term demands by reducing hospital admissions and lower the need for surgical treatment of these fractures."

OTW asked Dr. Diebo how osteoporosis screening might affect these results. He answered: "Strong epidemiological evidence is needed to justify lowering the age threshold or broadening the screening population, which would require consensus from major health organizations to balance public health benefits with resource constraints. Additionally, advocacy from our organizations like AAOS [American Academy of Orthopaedic Surgeons], AOA [American Orthopaedic Association] and public health experts would be crucial to overcome institutional inertia and drive policy change." — *EH*



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