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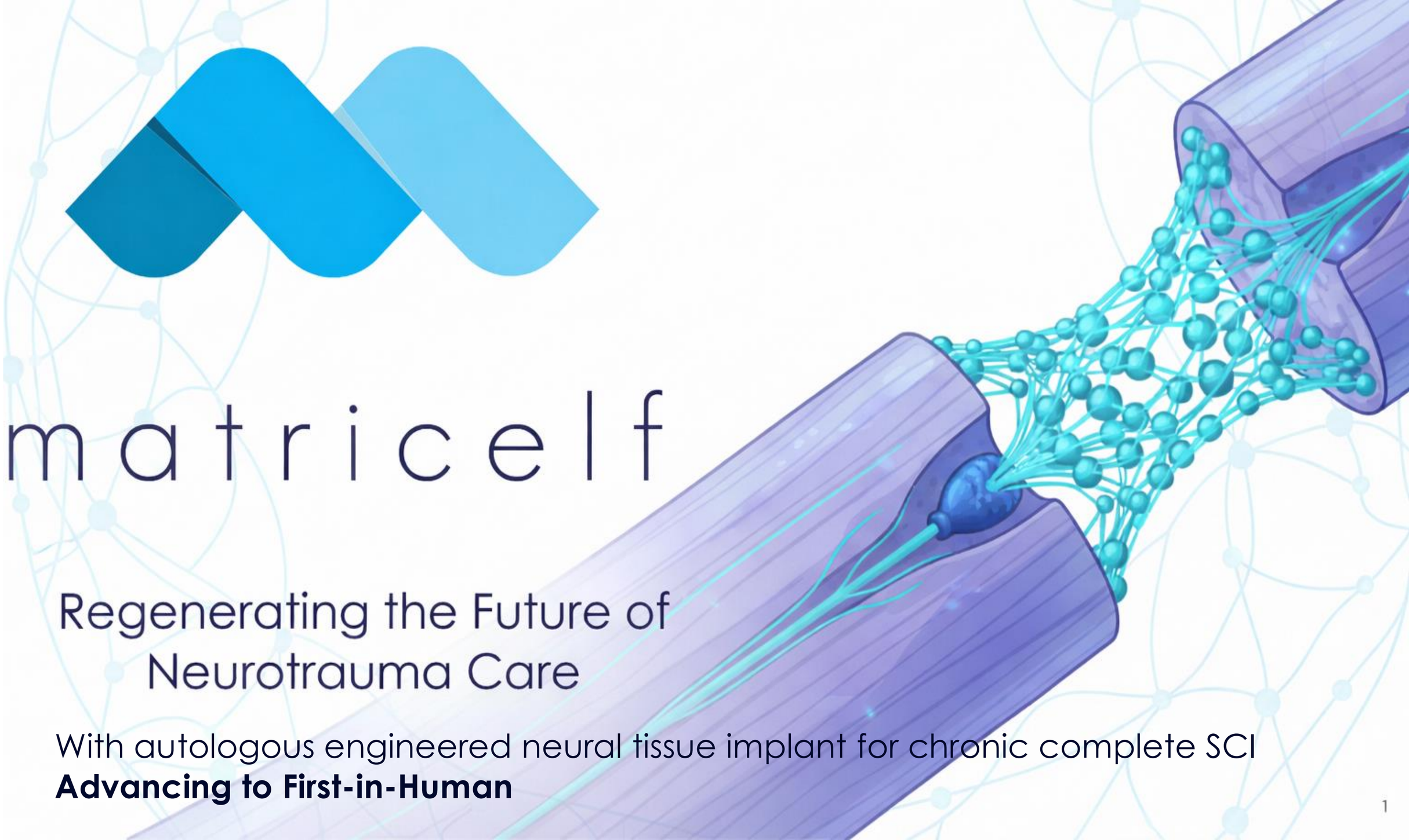
Regenerating the Future of Neurotrauma Care



With autologous engineered neural tissue implant for chronic complete SCI

Advancing to First-in-Human

Forward Looking Statement and Disclosure

מצגת זו הוכנה על ידי מטריסלף (להלן "החברה") כמצגת היכרות כללית בלבד. המידע הכלול במצגת זו אינו ממצה ואינו כולל את מלוא המידע אודות החברה, פעילותה או עסקיה, ואין לראות בו כתחליף לעיון בדוחות החברה כפי שפורסמו או יפורסמו מעת לעת, לרבות תשקיפים, דוחות תקופתיים, דוחות מיידיים או מסמכים אחרים של החברה.

המידע הכלול במצגת זו אינו מתיימר לכלול את כל המידע הדרוש לצורך קבלת החלטת השקעה כלשהי, ואין להסתמך עליו לצורך קבלת החלטה כאמור. החברה אינה מתחייבת לעדכן או לשנות את המידע הכלול במצגת זו, לרבות לשם שיקוף אירועים, שינויים, עדכונים, עריכות, עיבודים או פילוחים, אשר עשויים להתרחש לאחר מועד הכנת המצגת.

מצגת זו כוללת מידע צופה פני עתיד כהגדרתו בחוק ניירות ערך התשכח 1968, לרבות תחזיות, הערכות, אומדנים, יעדים, תכניות ומידע נוסף המתייחס לאירועים עתידיים אשר יתרחשו או עשויים להתרחש, ובכלל זה ביחס להכנסות, לרווחיות ולפעילות העסקית של החברה. מידע צופה פני עתיד מבוסס על אומדנים, הערכות והנחות של הנהלת החברה נכון למועד הכנת המצגת, ואינו ודאי מטבעו, בין היתר בשל תלותו בגורמים שונים ובסיכונים הקשורים בפעילות החברה, אשר חלקם אינם מצויים בשליטתה.

התממשות התחזיות וההערכות האמורות עשויה להיות שונה באופן מהותי מן האמור במצגת זו, והחברה אינה מתחייבת כי מידע צופה פני עתיד כאמור יתממש בפועל. סטייה מהותית כאמור עלולה להשפיע לרעה על תוצאות החברה, פעילותה ומצבה העסקי.

מצגת זו כוללת נתונים סטטיסטיים ומידע אשר פורסמו על ידי צדדים שלישיים, אשר תוכנם לא נבדק או אומת באופן עצמאי על ידי החברה, והחברה אינה אחראית לנכונותם, לשלמותם או לעדכניותם.

המידע הכלול במצגת זו אינו מהווה הצעה לציבור או הזמנה להציע הצעה לרכישת ניירות ערך של החברה, ולא ייחשב כהצעה או כהמלצה לביצוע עסקה בניירות ערך כאמור, בכל תחום שיפוט שהוא.

Non-Confidential

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Unmet Clinical Need

Single injury. A permanent outcome. No repair

- One moment. A spinal cord injury can permanently eliminate function
- In chronic complete SCI, the outcome is typically lifelong paralysis
- Today, care is supportive, not restorative
- Even small functional gains can meaningfully change independence

A massive unmet need.
No restorative therapy. Until now.

Spinal Cord Injury: U.S. Market and Opportunity

Large economic burden, reimbursement supported by cost offset & gain in QALY

Burden In the U.S.

310,000 people living with SCI

$30B spent annually on SCI

Up to $**6M** life-time direct medical cost per patient

+

~$**95,000** per year in-direct cost from productivity loss

Direct and indirect costs creates payer incentives for functional retoration

Initial commercial focus

32% Complete Paraplegia & Tetraplegia

Yet, Drives **52%** of total healthcare costs

- High unmet need with no approved treatment for functional restoration

Breakdown of life-time care costs

- Attendant care & personal assistance (50%)
- Rehospitalization & emergency care (15%)
- Outpatient care & therapy (15%)
- Medications and routine supply (10%)
- Durable medical equipment maintenance & replacement (8%)

Pricing will be aligned to severity and supported by offsetting attendant care and long-term care costs

Clear pathway to premium reimbursement and multibillion dollar annual market

https://meridian.allenpress.com/tscir/article/16/4/1/190917/Costs-of-Care-Following-Spinal-Cord-Injury

https://bpb-us-w2.wpmucdn.com/sites.uab.edu/dist/f/392/files/2025/02/2025-Facts-and-Figures.pdf

Matricelf at a Glance

First to have Autologous Engineered Neural tissue implant; advancing to First-In-Human

Indication

Chronic complete SCI (ASIA A)

High unmet need. No approved solutions

Product

Autologous engineered neural tissue implants

Single implantation

Stage

Ongoing IND enabling studies

FIH expected in early 2027

Differentiation

Next Value Inflection

First-in-Human implantation

Followed by interim clinical readout

Founded in 2019

Based on Prof. Tal Dvir research from Tel Aviv University

Raised to date

Over $25m USD

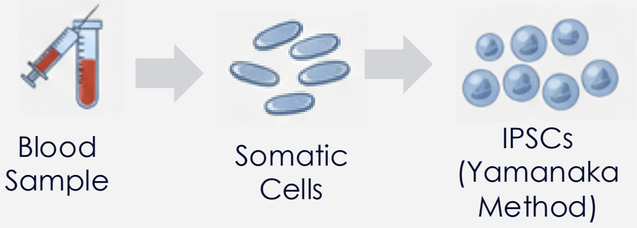
Protected

Strong IP portfolio covering tissue engineering and 3D bio-printing

How It Works. The Science Behind.

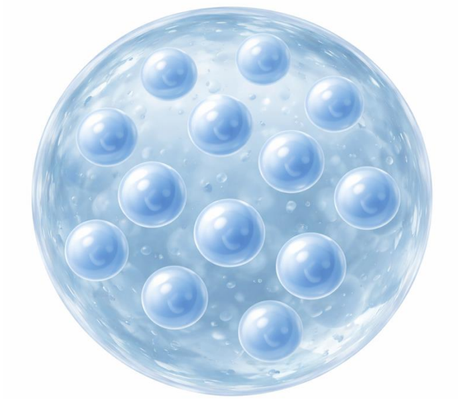
Generation of patient specific neural tissue

Patient's Blood Sample

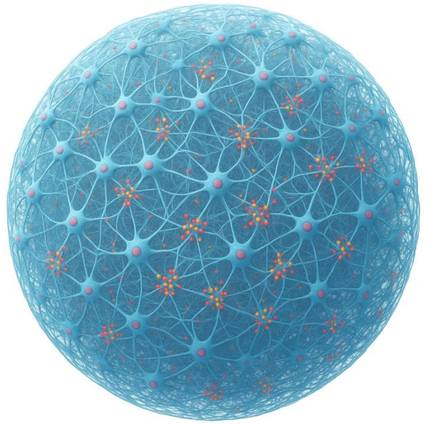


Patient's Omentum Sample

Bioengineering



Controlled Differentation

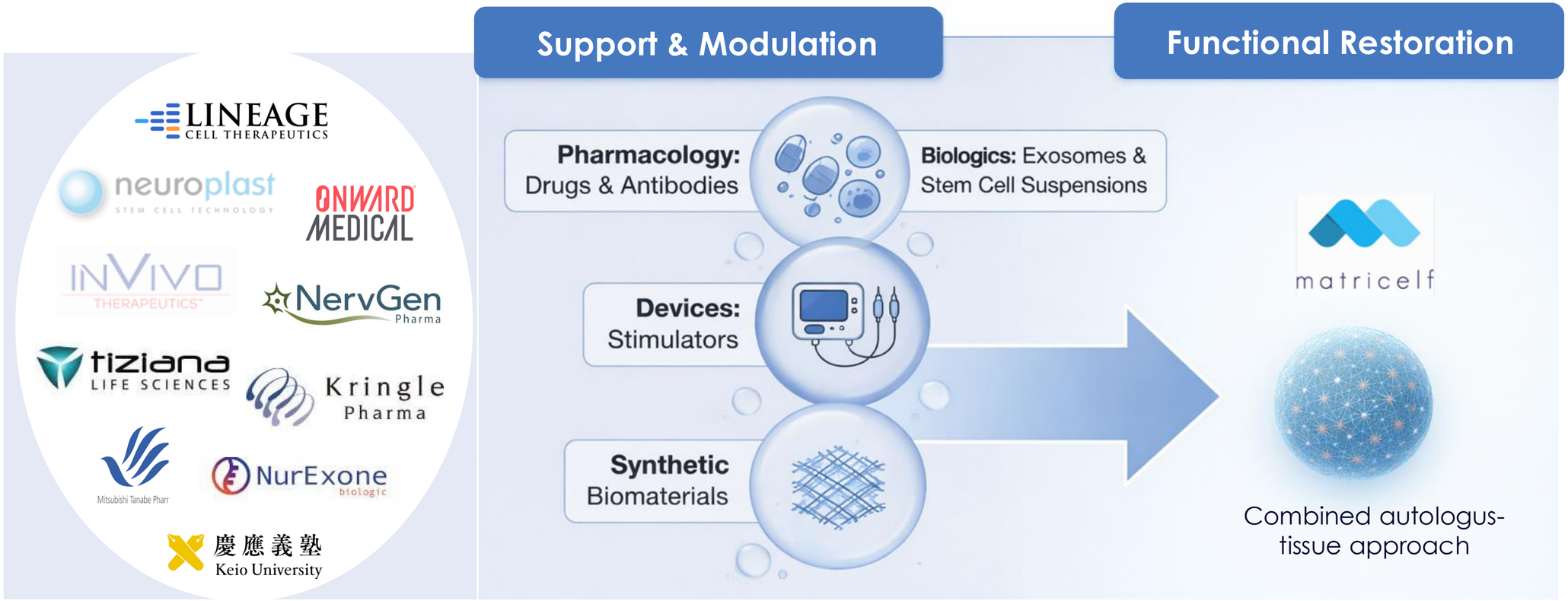


Functional Engineered Personalized 3D-Neural Tissue

Designed to biologically integrate.
Autologous approach reduces immunogenicity.

From Modulation to Restoration:

Redefining the SCI Landscape



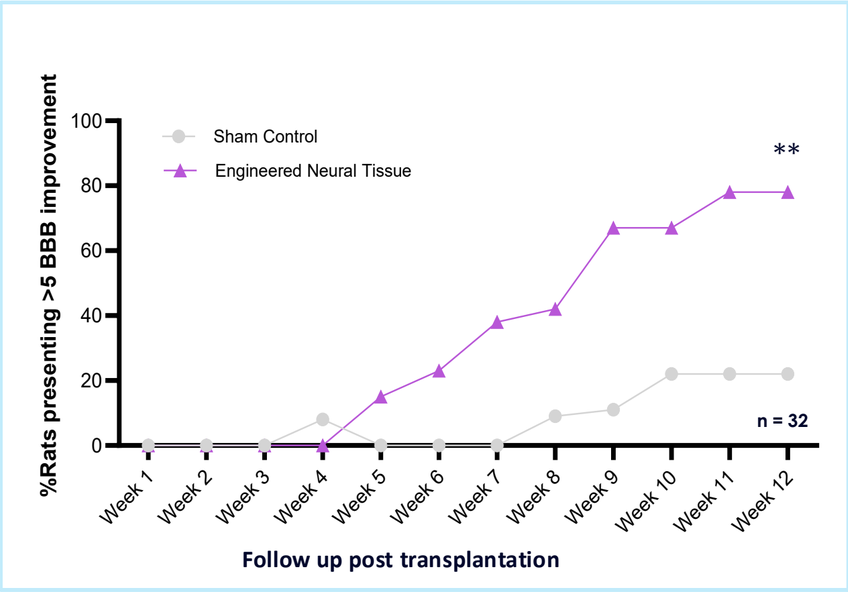
Most competitors modulate injury response.
Matricelf restores tissue function.

Robust Recovery in Chronic, Severe SCI

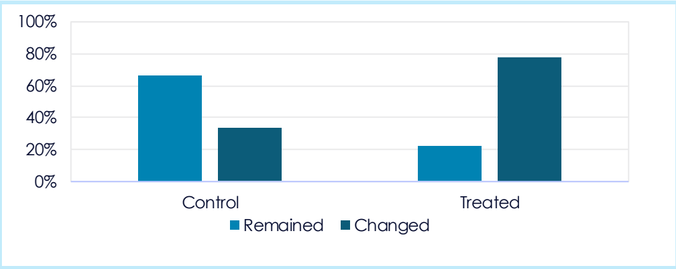
Pre-IND Feedback

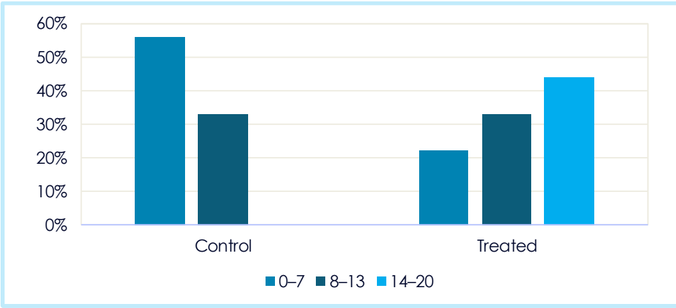
Pilot **efficacy** study: **Chronic**[1] spinal cord injury nude rat model (T10 contusion)

% of BBB improvement (>5 pts)



Category change and distribution from Baseline to 12 weeks

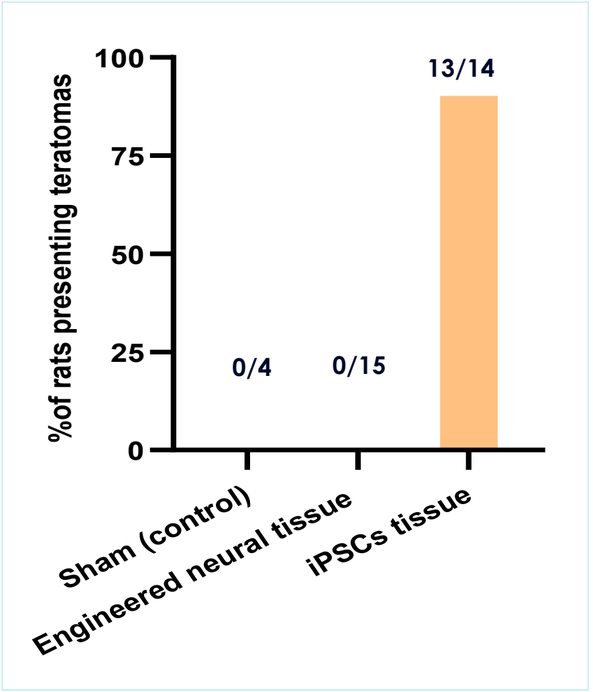




(**) A 5-point improvement signifies functional recovery

(1) Transplantation performed 4-weeks post injury

Pilot **safety** study: C4 corticospinal tract transection in a nude rat model



Engineered neural tissue drove meaningful BBB locomotor recovery and upward category shifts in chronic SCI compared with control. Safety was supported by the absence of teratomas, in contrast to iPSC tissue.

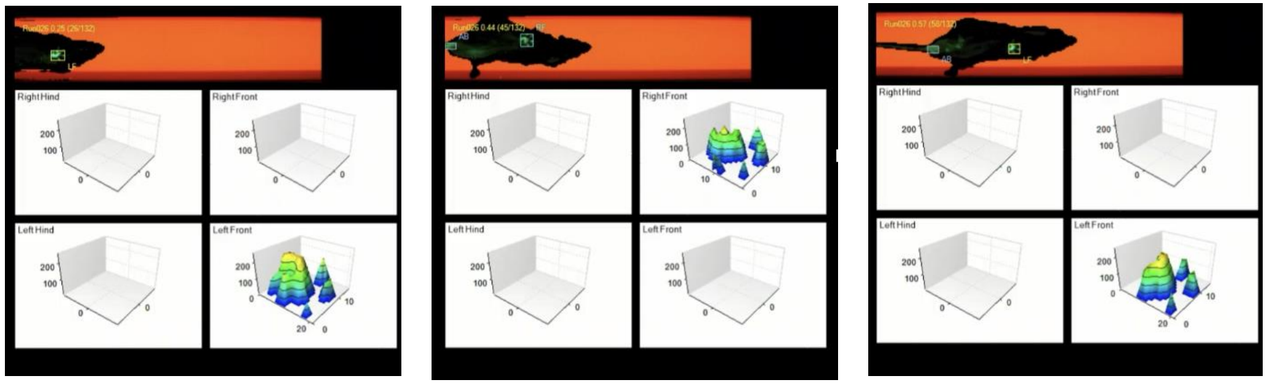
- The BBB score measures motor function recovery in rats after spinal cord injury, ranging from 0 (no movement) to 21 (normal movement), providing an assessment of treatment effectiveness
- 0 to 7 Severe impairment; 8 to 13 Intermediate recovery; 14 to 20 Advanced recovery; 21Normal locomotion

Robust Recovery in Chronic, Severe SCI Rat Model

CatWalk XT gait analysis shows coordinated limb use and posture.

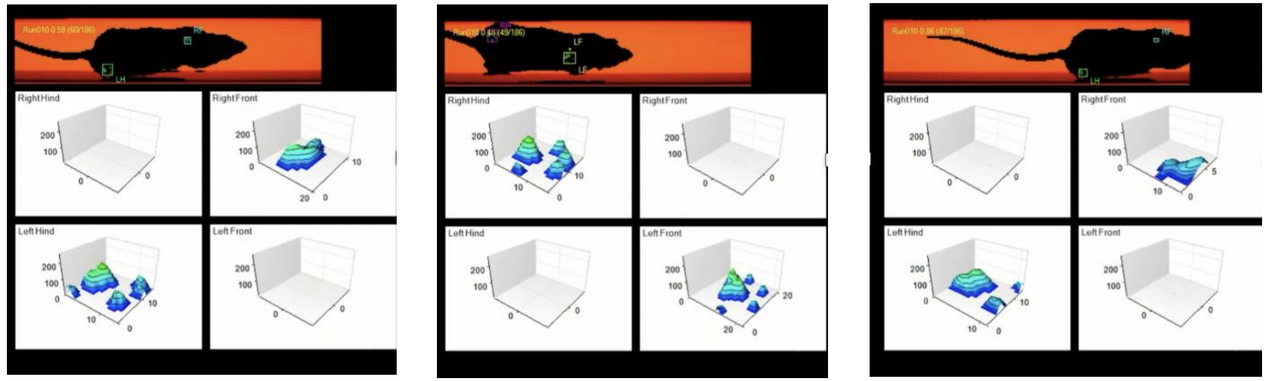
Pilot **efficacy** study

Pre-treatment, Paralysed Rat



- Hind limbs show limited movement
- No measurable paw contact from rear limbs
- Hind paws drag behind front limbs
- Clear indication **of paralysis and loss of coordinated gait**

Post-treatment, With Matricelf



- All four limbs regain coordinated movement
- Measurable paw contact from all limbs
- Restored coordinated gait pattern
- Evidence of **functional recovery** approaching **normal mobility**

https://matricelf.com/solutions/spinal-cord/

Journey to Recovery: Rebuilding the Spinal Cord

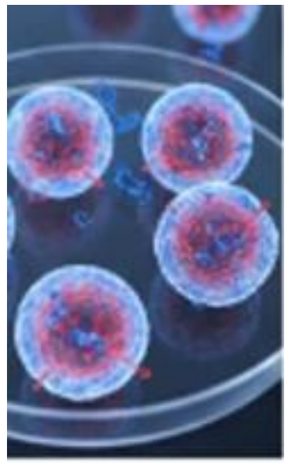
Traumatic Spinal Cord Injury (*)

Disrupted nerve pathways, complete injury

Patient's Blood & Omentum sample

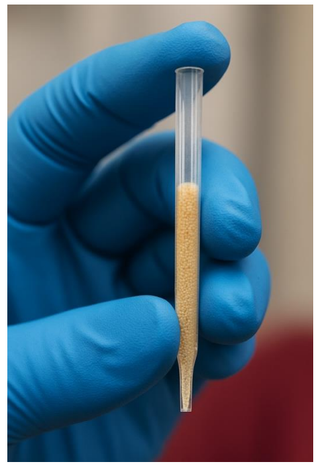
Done at stable impairment

Production

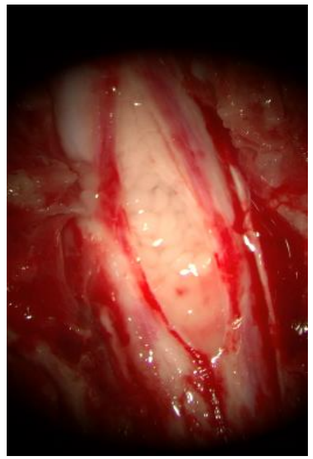


Engineering functional autologous neural tissue spheres

Standard Spine Surgery Techniques



No novel instrumentation is required

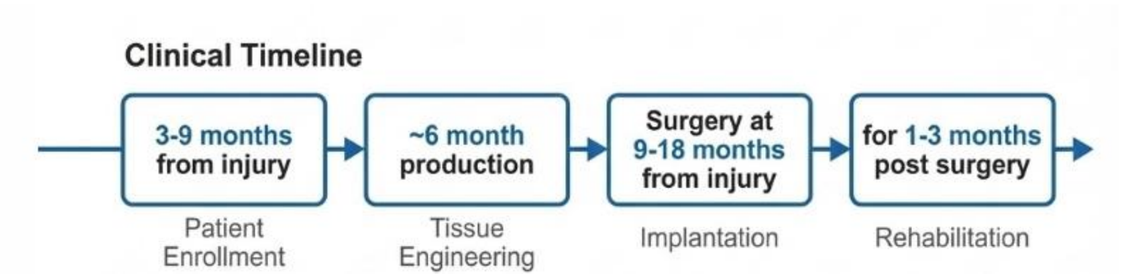


Cavity is filled with neural tissue spheres

Neural repair & Regeneration (*)

Rehabilation

Restored signaling, potential for improved function



Single implantation, no repeated dosing

* Images are provided for demonstration purposes only

Why Matricelf?

A first-in-class spinal cord functional restoration with a near-term validation in human

Category defining approach

We create an **autologous engineered neural tissue** implant. Replacing damaged spinal cord tissue, not only modulating the injury.

De risked by PoC Chronic SCI model

Strong **functional recovery and a clean safety** profile In FDA accepted SCI animal models

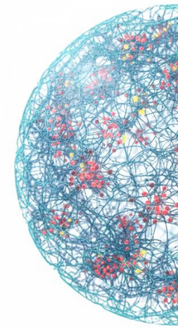
Near term value catalysts

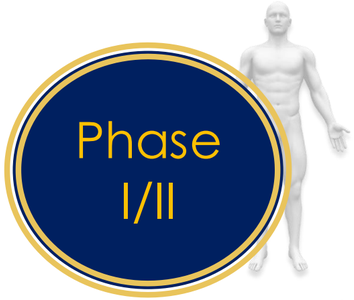
Advancing to **First in Human implantation** followed by interim readouts.

Near term First in Human milestone in a $30B+ high unmet need market

Strategic Roadmap

Integrated Plan | Multiple Inflection Points | Sustainable Value Creation (2026-2029)





Primary Value Inflection

Clinical
- Clinical - Type C meetings
- First-In-Human screening
- First-in-Human IRB approval
- **FIH**
- Interim Data readout (3-5 patients)
- Interim Data readout (8-10 patients)
- Complete Phase I/II

Regulatory
- CMC - Type D meetings
- Israeli MoH submission
- FDA - IND submission
- RMAT Designation
- Breakthrough Designation

CMC
- GMP clinical production readiness
- Scaling production capacity & production for FIH
- Optimizing production

Pre Clinical
- IND enabling studies - Safety
- IND enabling studies - Efficacy

Financing
- $7m – $10m
- Nasdaq
- ~$25m
- Partnering inflection point
- ~$50m

Q1 Q2 Q3 Q4 — **2026**

Q1 Q2 Q3 Q4 — **2027**

2028

2029

Go-To-Market:

Anchored in capacity & reimbursement

Near-term SOM (Annual Capacity):

1

~3,000 patients

New (~1y) SCI cases, age 18-55 (50%) suffering from **complete** impairment (32%)

Based on manufacturing capacity and center-of-excelence (COE) rollout

Estimated treatment price:

$700K – Paraplegia
$1.8m – Tetraplegia

Based on ~50% of lifetime direct medical costs & QALY gain, excluding first-year post-injury expenses.

Potential market value

~$3.2B annually

Based on 25 COE, ~115 cases per year/COE, ~$130m per center

Long-term SAM (cumulative U.S. population)

2

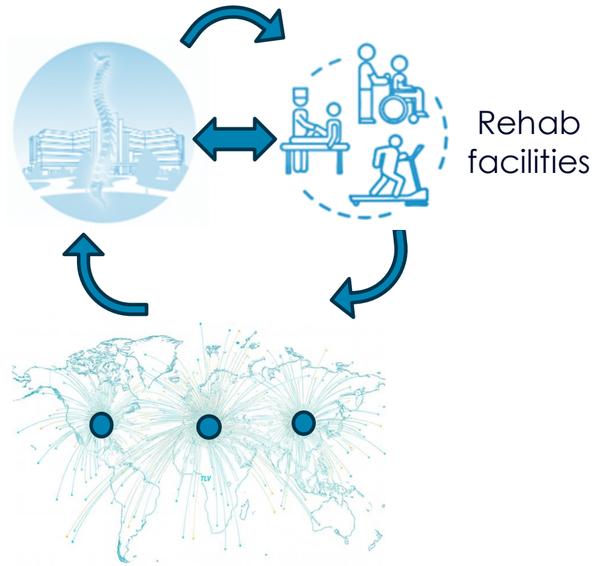
Approximately 25,000 eligible U.S. chronic complete SCI patients (>10 years) support a potential market of about $15 billion based on projected treatment pricing.

A game-changing opportunity: unlocking a $15B+ cumulative U.S. SCI market with a multibillion-dollar annual entry point

Matricelf: Integrated SCI Solutions & Scalable Commercial Strategy

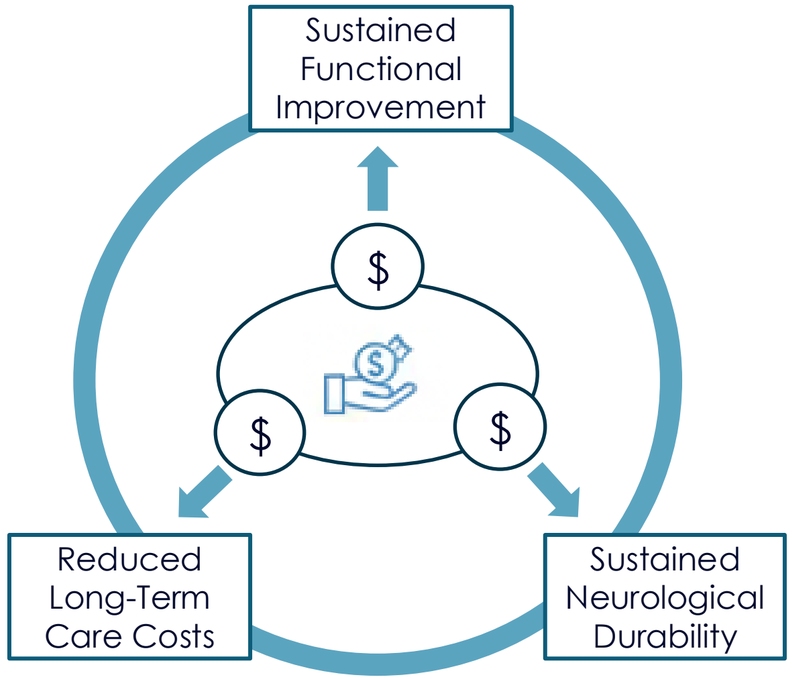
Defensible | Outcome-Driven | Capital-Efficient Growth in Multibillion Dollar Market

Vertically Coordinated Care Model



Proprieteray Manufacturing & Logistics (regional coverage)

Value-Based Payment Milestones

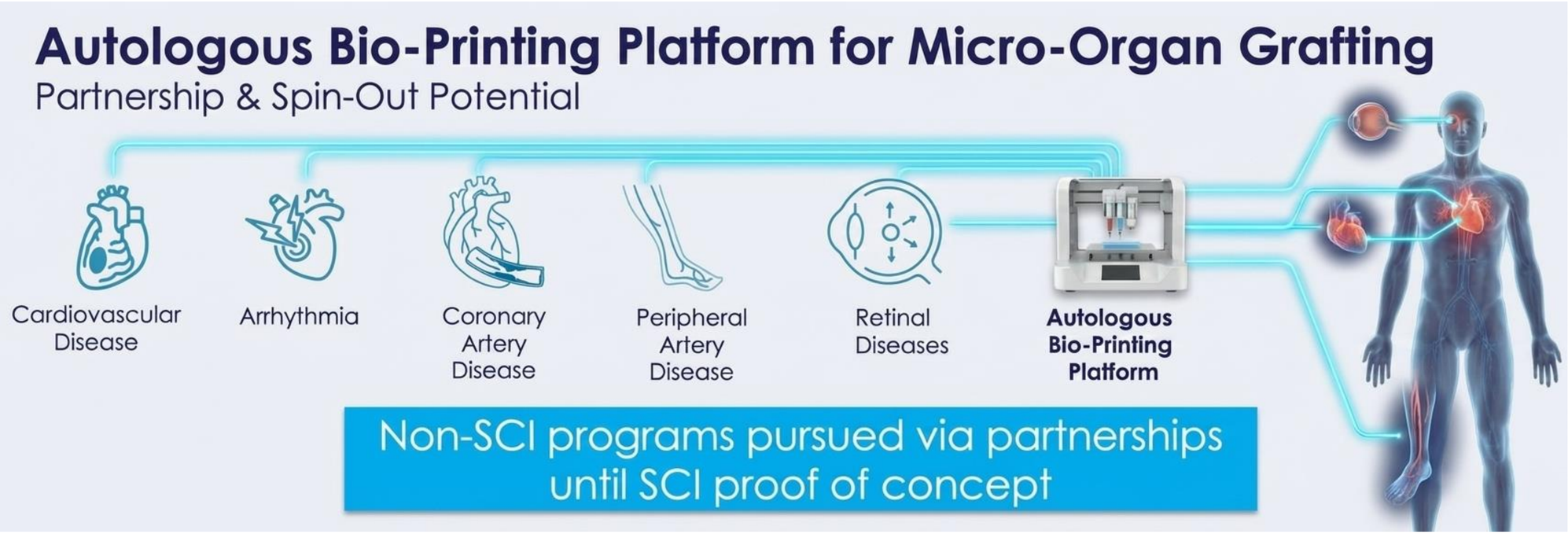


Reimbursement path: outcomes-based payments tied to functional improvement and durability

Platform Potential Beyond SCI

SCI an anchoring indication, but technology modularity supports scale-out to other neurological injury disorders

Platform	Tissue	Indication	Discovery	Preclinical	Clinical
Micro-tissue — Engineered Autologous tissues	Motor Neurons	**SCI** (Spinal Cord Injury)		**IND enabling studies**	**2027**
	Cortical Neurons	**TBI** (Traumatic Brain Injury)	**In-vivo**		
	Cortical Neurons	**Stroke**	**In-vivo**		



Accomplished Management Team

a powerhouse of expertise in biotech innovation, regenerative medicine, and business strategy

Gil Hakim
CEO

Alon Sinai; PhD
Deputy CEO; President & Co-Founder

Tal Dvir, PhD
CSO & Co-Founder

Tamar Harel Adar, PhD;
VP R&D

Tal Ben Neriah
VP Operations

Sigal Russo
CFO

Hadas Shoham Nissan
Director Clinical and Regulatory affairs

Anat Shnaiderman
QA Manager

World class science, proven biotech execution, de risking delivery and accelerated value creation.

Board of Directors

Board includes Nasdaq IPO, M&A, and global pharma operating leadership

Ron Mayron,
Director &
Chairman

Former CEO, Teva Israel, senior Teva leadership, decades in global pharma operations, business development, and scaling

Tal Dvir, PhD
Co-Founder,
Director and CSO

MIT trained tissue engineering pioneer, leads the scientific platform, founder of TAU Tissue Engineering Lab.

An award-winning researcher and recipient of the Young and Promising Bio-Medical Researcher Rappaport Prize (2018), the Juludan Foundation Research Award (2018), and the Da Vinci Award (2023).

Alon Sinai; PhD
Co-Founder ,
Director, Deputy
CEO & President

25 plus years in MedTech and Biotech operations, former LBT Laser Beam Therapeutics, brings execution and scaling experience

Stanley Hirsh
Director

Biotech and pharma CEO and board member, experience across US and UK public markets, fundraising and M&A

Lori Confino
Independent
Director

Corporate and capital markets attorney, guides financings, M and A, governance, and IPO readiness

Neomi Enoch, CPA
External Director

Senior financial executive, CFO and public company experience, IPO and capital raise track record, audit and controls.

Meir Clifi-Amir;
Maj, Gen. (Res.)
External Director

Senior executive and strategic leader, deep governance and international operations experience, supports scaling and stakeholder management

IPO and M&A expertise, global pharma leadership, strong governance

Clinical Advisory Board

Pioneers in Neurosurgery and SCI Treatment

Prof. Michael G. Fehlings, M.D., PhD

Prof. Michael G. Fehlings is Professor of Neurosurgery at the University of Toronto, Vice Chair of Research, and neurosurgeon at Toronto Western Hospital. Holder of the Robert Campeau Foundation Dr. C.H. Tator Chair, he leads spinal cord injury research, publishing 1,100 papers and advancing neuroprotection, stem cell repair, and guidelines.

Prof. Allan D. Levi, M.D., PhD

Dr. Allan Levi is Professor and Chair of Neurosurgery at the University of Miami and Chief of Neurosurgery at Jackson Memorial Hospital. Renowned for spinal cord injury, peripheral nerve repair, and spine surgery, he advances regenerative therapies and develops innovative surgical approaches to improve outcomes in acute and chronic SCI.

Prof. Nicholas Theodore, M.D.

Dr. Nicholas Theodore is Professor of Neurosurgery and Director of the Johns Hopkins Neurosurgical Spine Center. Internationally recognized for brain and spinal cord injury, minimally invasive spine surgery, and robotics, he has authored 180 articles, 30 chapters, and holds 10 device patents. His research advances trauma, SCI, and surgical care.

.

Prof. Ran Harel, M.D.

Prof. Harel is Director of the Spine Surgery and Spine Radiosurgery Division at Sheba Medical Center. An expert in minimally invasive spine surgery, spinal oncology, and radiosurgery, he trained at Sheba and the Cleveland Clinic. He introduced Novalis based spine radiosurgery in Israel, publishes widely, and lectures at Tel Aviv University.

Dr. Moshe Bondi, M.D.

Dr. Moshe Bondi currently directs Neurological Rehabilitation and outpatient services at Sheba Medical Center. A PM&R specialist, he focuses on spinal cord injury, pain, and secondary complications. Trained at Sheba and Toronto Rehabilitation Institute, he leads bone health and SCI clinics, researches osteoporosis prevention, and lectures at Tel Aviv University.

Provides clinical and surgical oversight to optimize trial design and execution

matricelf

Thank you

www.matricelf.com

Gil@matricelf.com