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REGENERATING THE FUTURE OF PERSONALIZED MEDICINE

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Vision

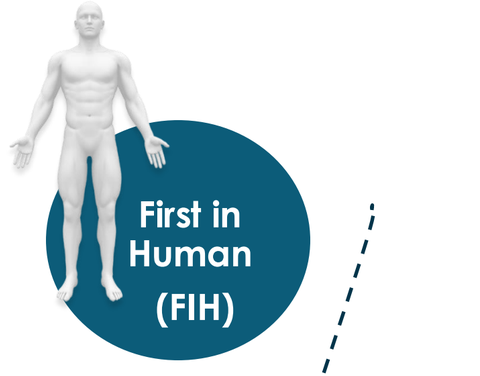
Pioneering a new era of **personalized medicine** through **patient-specific** regenerative therapies

Mission

Harnessing cutting-edge **autologous 3D tissue engineering** to revolutionize patient care

Matricelf: Overview

- **The 1st Autologous, Engineered Tissue Implant**
  One-time curative solution
  Starting with **Spinal Cord Injuries**
- **$16M raised to date. Primarily on the TASE**
- **Next milestone: FIH Clinical Trial → Q1-Q2/2026**
- **SCI healthcare costs: >$40B is spent annually in the U.S.**



2025

Success in Pilot efficacy animal study

2024

Success in Pilot safety animal study

Neural tissue development

2023

FDA

Pre-IND

2022

TEL-AVIV STOCK EXCHANGE

IPO

2021

Tech transfer

2020

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Established

2019

TEL AVIV UNIVERSITY
אוניברסיטת תל-אביב

Technology feasibility in animals

Matricelf Key Assets

Advancing Regenerative Medicine with Two Unique Platforms

Self-derived (Autologous) 3D Engineered Tissues

Personalized tissue implants for advanced regenerative solutions

3D Volumetric Bioprinting for Autologous Tissue/Organ Grafting & Drug Discovery

Cutting-edge bio-fabrication technology for next-generation tissue engineering

Extensively validated through company-university collaboration

- Supported by rigorous research from Tel Aviv University
- Led by Prof. Tal Dvir, PhD.
- Recipient of prestigious awards, including the Da Vinci Award (2023)

Unique IP portfolio enabling an integrated approach to personalized tissue engineering

1st Target Indication: Spinal Cord Injury

U.S. Market & Opportunity

~310,000
patients living with spinal cord injury

~18,500
new cases per annum

Age 16-30: 47% ; **Average**: 44 years

Male (78%) ; **Female** (22%)

Main causes: Vehicle (37%) & Fall (32%)

>$40B
is spent annually on SCI in the U.S.

Up to $6M
lifetime costs per patient
depend on age and severity of impairment

Excluding **annual** indirect costs of **~$95,000.** (i.e, productivity losses)

12% with complete Tetraplegia

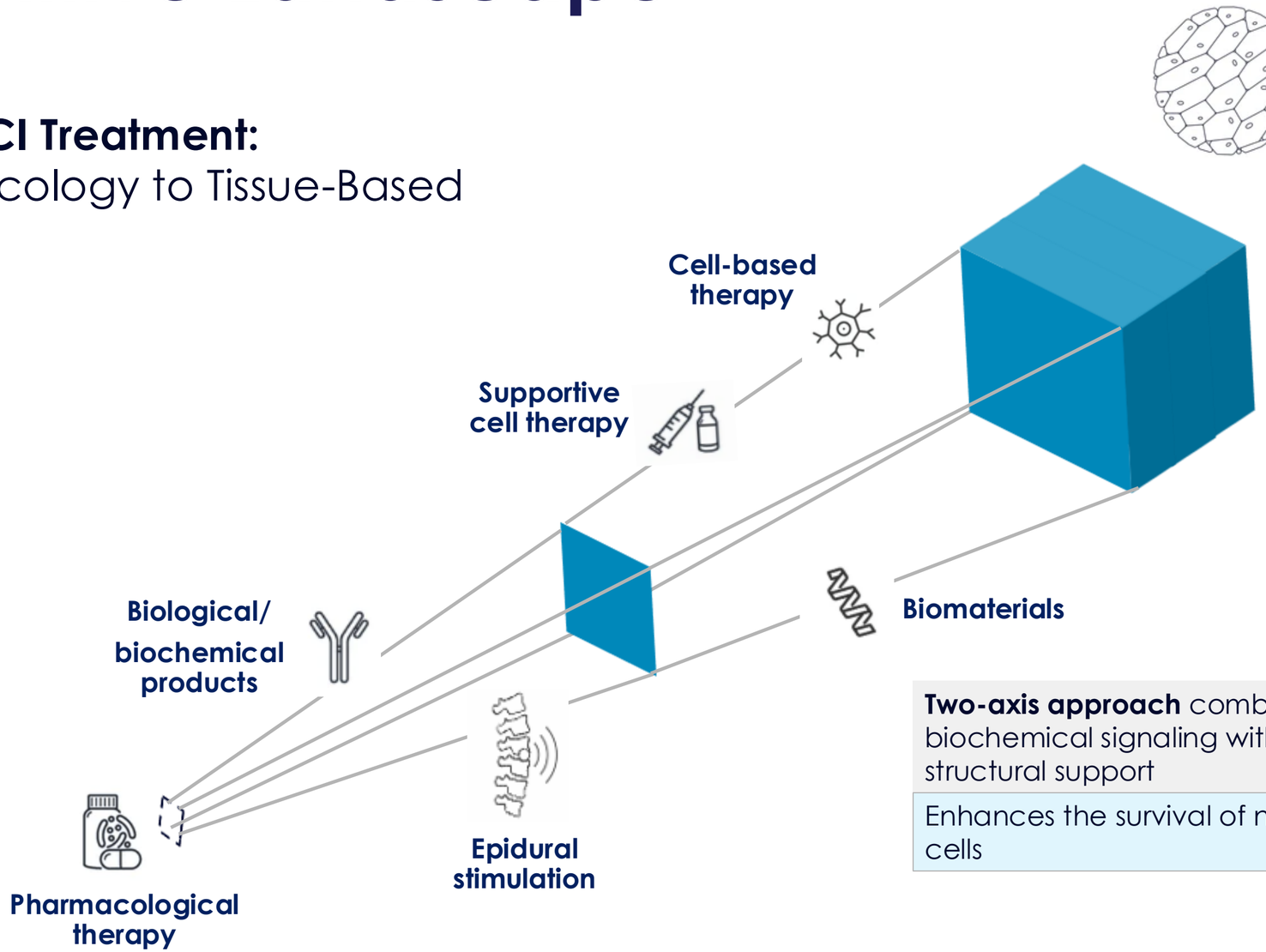
20% with complete Paraplegia

Investing in breakthrough SCI therapies presents both a chance to transform lives and a significant financial opportunity

https://msktc.org/sites/default/files/Facts-and-Figures-2025-Eng-508.pdf

Spinal Cord Injury (SCI) Competitive Landscape

Advancing SCI Treatment:
From Pharmacology to Tissue-Based Therapies



Multi-axis (3D) approach, integrating biochemical, cellular, and mechanical factors simultaneously

Neural reconstruction and functional restoration

Two-axis approach combining biochemical signaling with structural support

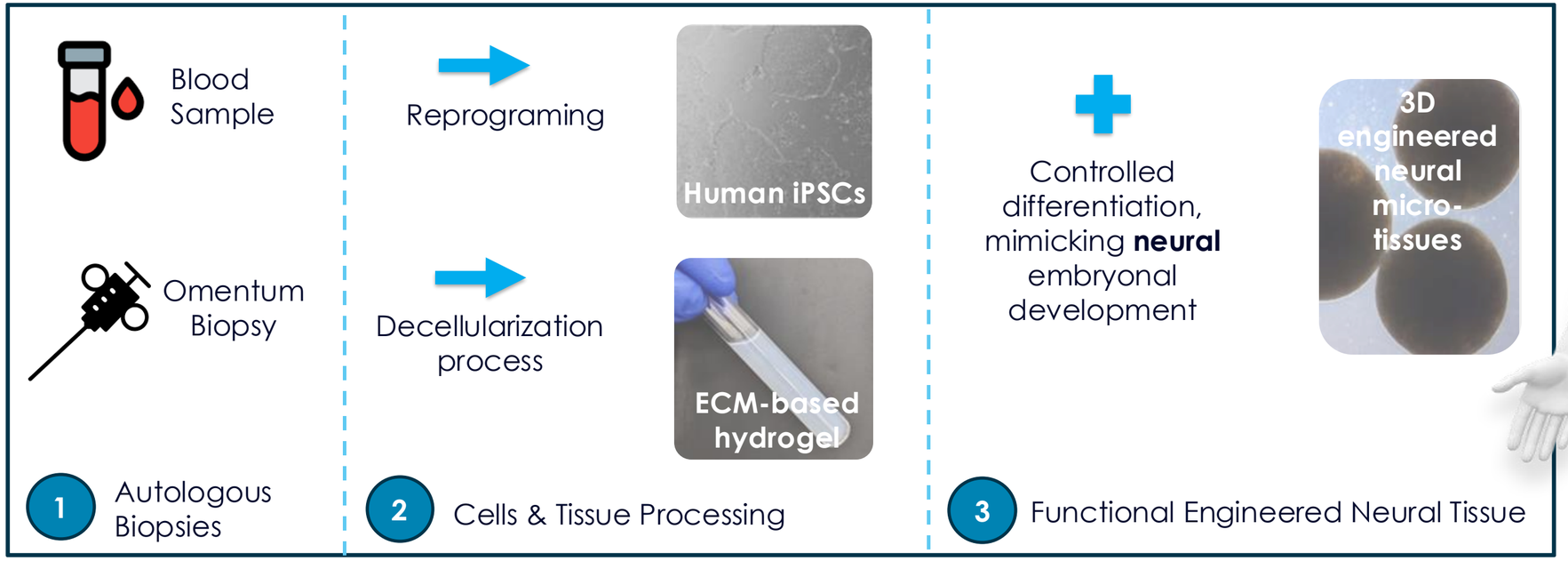
Enhances the survival of native cells

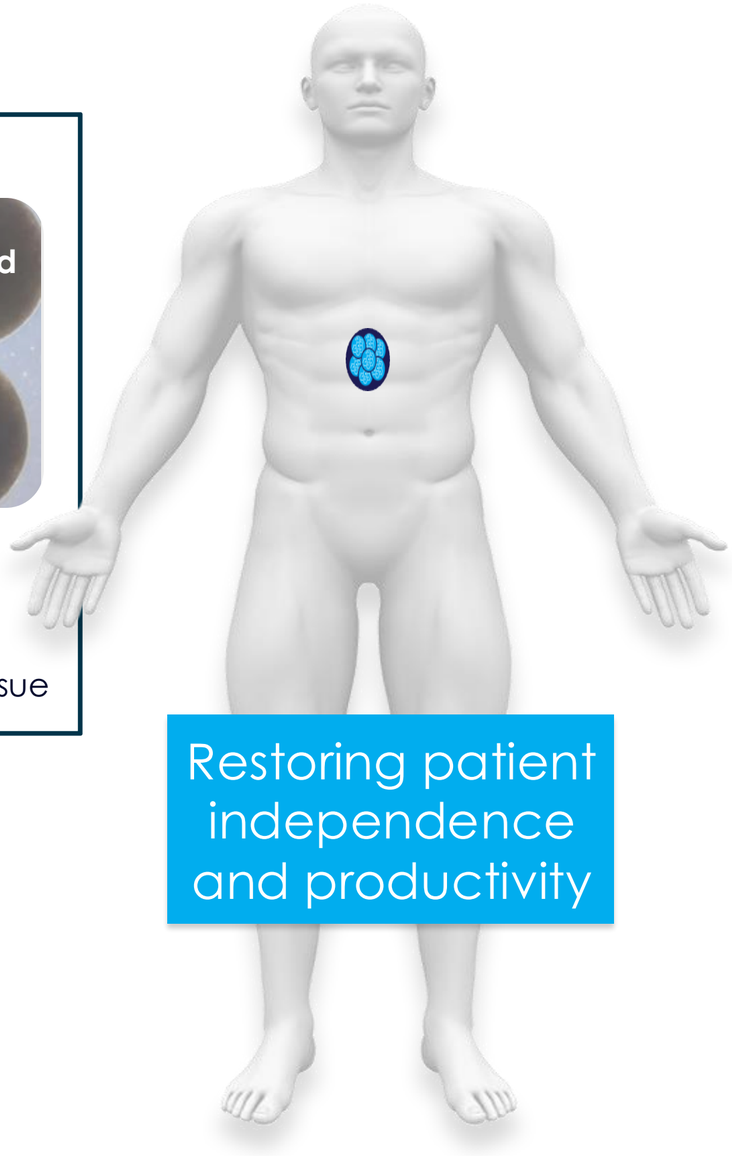
Single-axis approach, primarily targeting molecular pathways

Symptomatic relief or neuroprotection

Matricelf Regenerative Treatment for Spinal Cord Injury

Autologous engineered **neural** tissue transplant





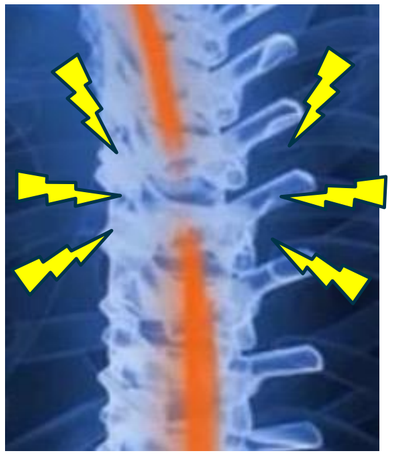
Restoring patient independence and productivity

Key Benefits

- **A one-time curative Treatment**
- **Direct impact on patient quality of life**
- **Directly reduces the economic burden**

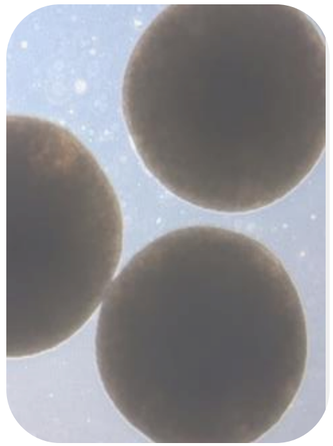
From Injury to Regeneration:

A Step-by-Step Neural Repair Process



Spinal Cord Injury

Nerve signal disruption at injury site



Autologous engineered neural tissue production

Engineered micro-tissues produced over six months

Laminectomy

Surgical Transplantation

Laminectomy performed, followed by neural tissue transplantation

Neural Repair & Regeneration

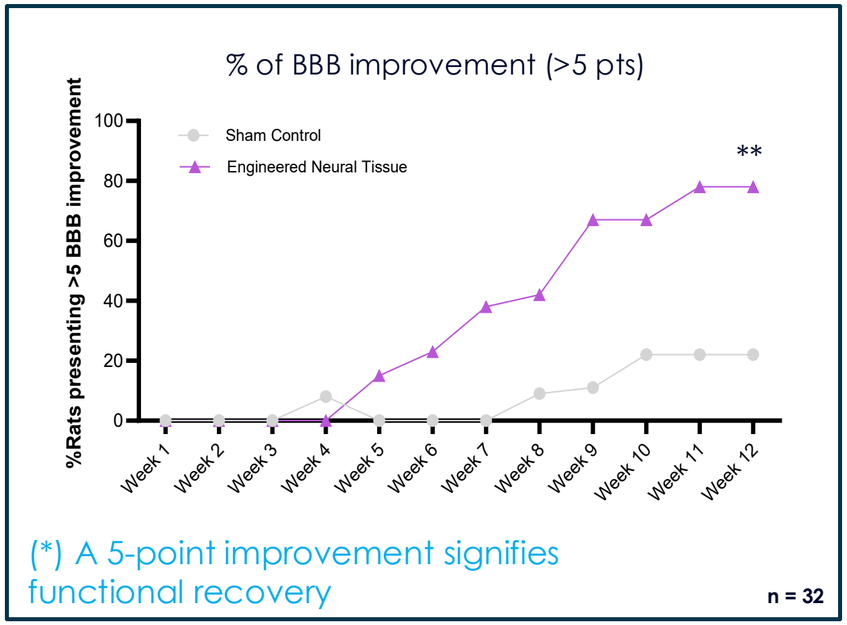
Targeting chronic cases with stable, complete impairment and minimal recovery potential, meeting a critical unmet need

Efficacy & Safety

FDA accepted animal models

Pilot **efficacy** study

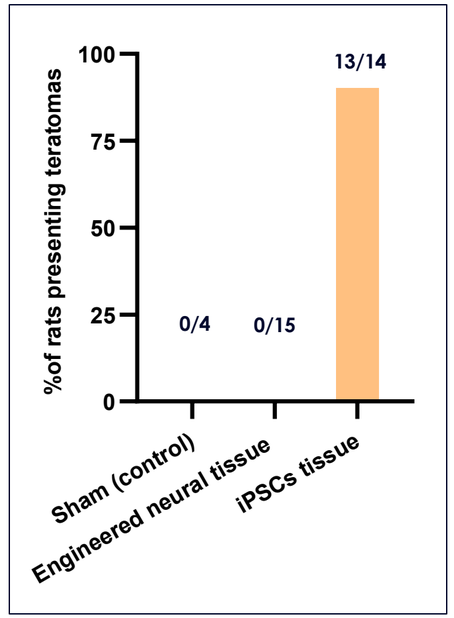
Chronic spinal cord injury nude rat model (T10 contusion)



>80% of treated rats presented **significant functional improvement**

Pilot **safety** study:

C4 corticospinal tract transection in a nude rat model

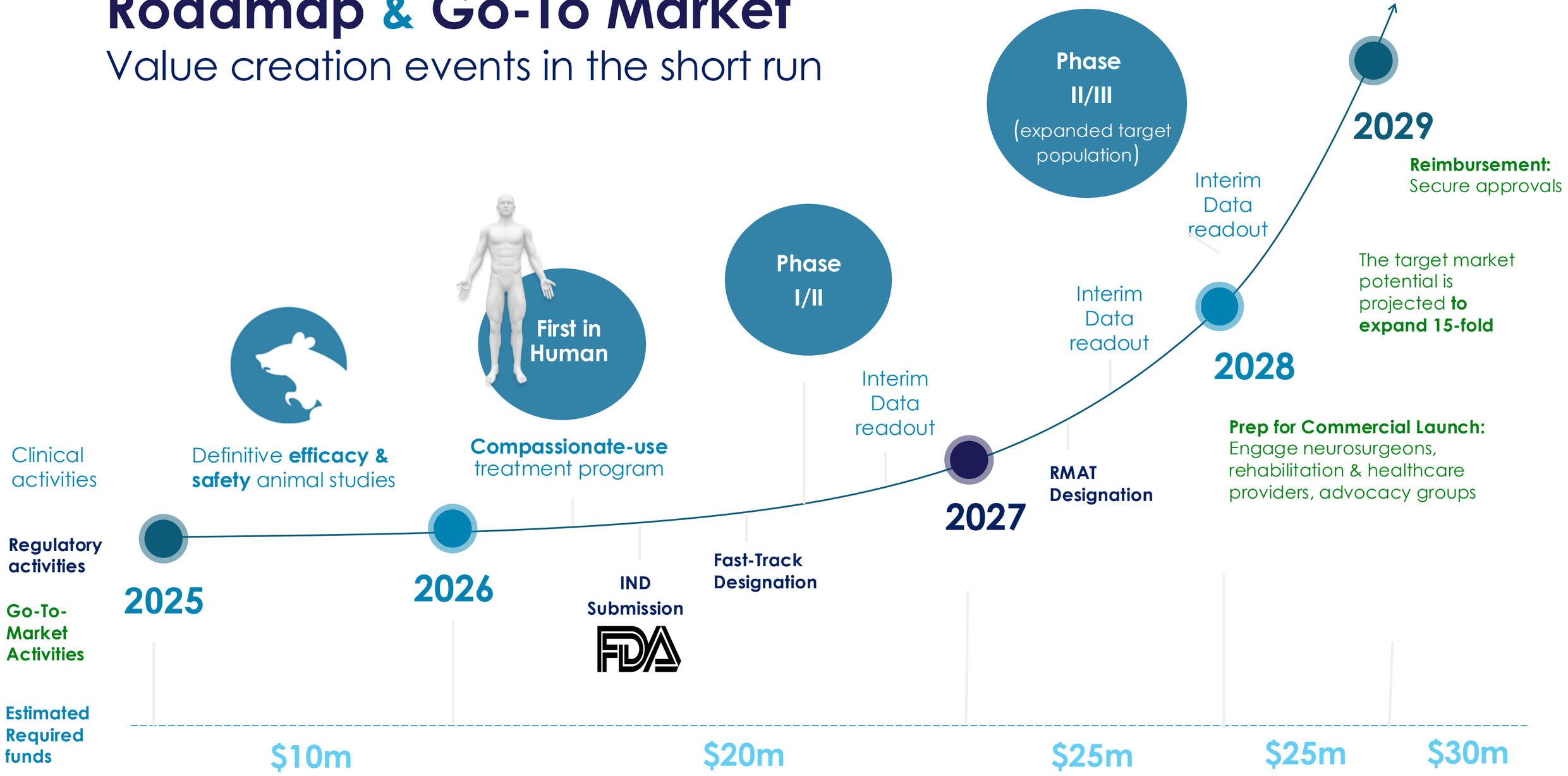


100% of treated rats exhibited a **safe** profile

* 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

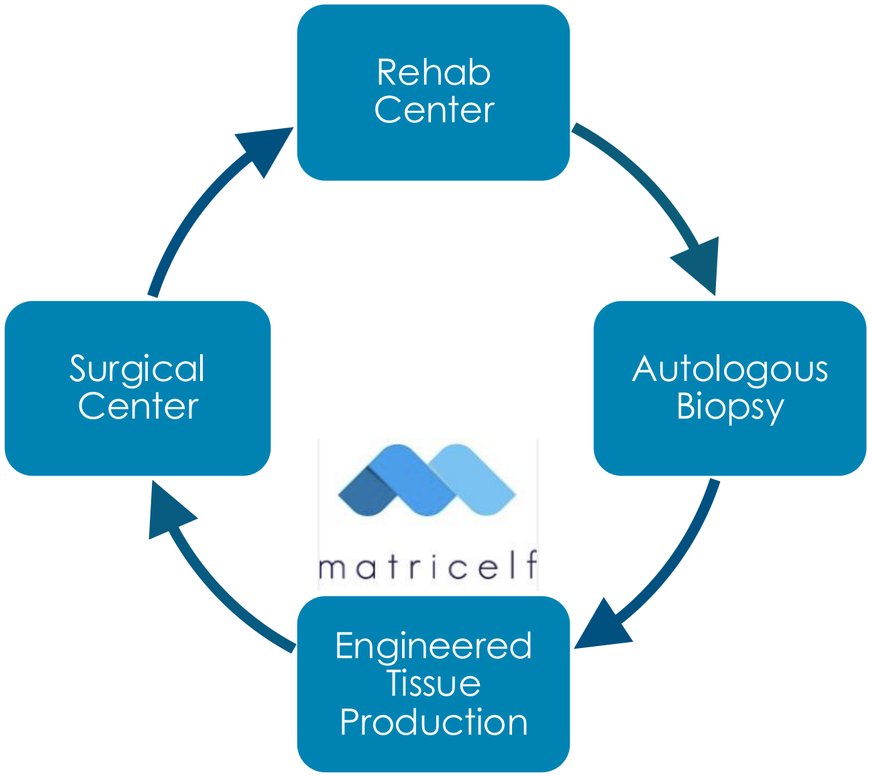
Roadmap & Go-To Market

Value creation events in the short run



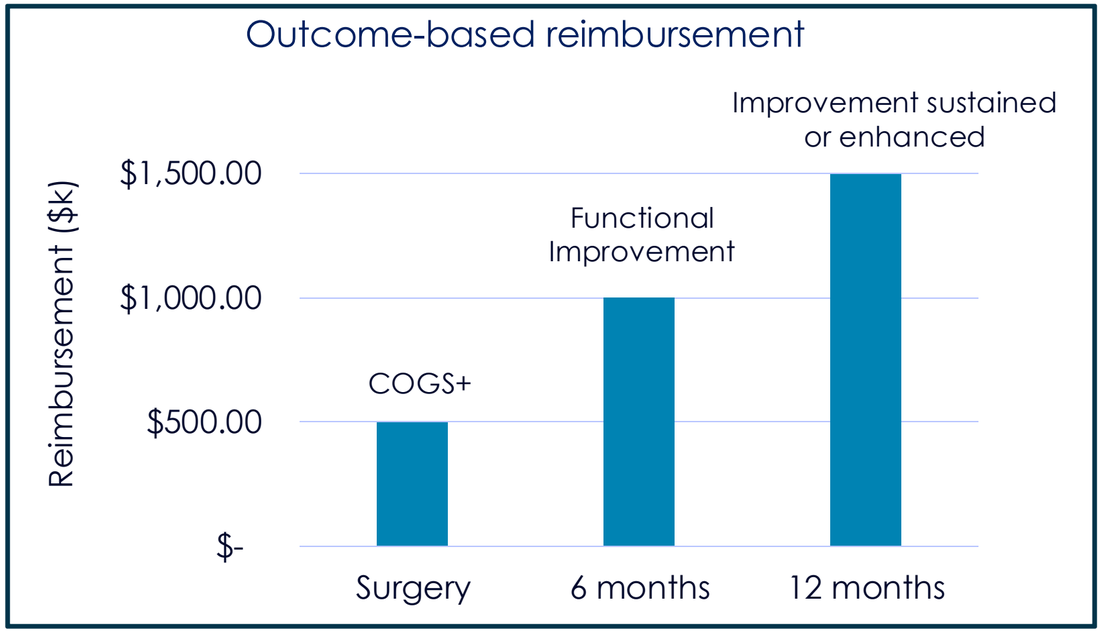
Business Model

Comprehensive Care Coordination for Personalized SCI Treatment



Price Structure:

align financial incentives with clinical success



Treatment Price targeted at $1.5 million

Matricelf's outcome-driven model ensures sustainable, high-impact SCI treatment by aligning innovation with patient success

https://www.spinalcord.com/blog/2017-spinal-cord-injury-statistics-you-ought-to-know

Step-wise Go-To-Market approach

SOM (Serviceable Obtainable Market):

1

~3,000 patients

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

Estimated treatment price:

~$1.5M

Potential market value

~$4.5B annually

SAM (Serviceable Available Market)

2

~50,000 patients

* **All** SCI Patients, age 18-55 (50%) suffering from **complete** impairment (32%)

Estimated treatment price:

~$1M

Potential market value

>$50B

A game-changing opportunity: pioneering SCI treatment in a $50B+ market.

Autologous Neural Tissue Regeneration Platform

Neurological Injury Disorders starting with **SCI Micro-Tissue Treatment**

Platform	Tissue	Indication	Discovery	Preclinical	Clinical
 Micro-tissue **Engineered Autologous tissues**	Motor Neurons	**SCI** (Spinal Cord Injury)		**IND enabling studies**	**2026**
	Cortical Neurons	**TBI** (Traumatic Brain Injury)	**In-vivo**		
	Cortical Neurons	**Stroke**	**In-vivo**		

Autologous Bio-Printing Platform for Micro-Organ Grafting

Partnership & Spin-Out Potential

Cardiovascular Disease

Arrhythmia

Coronary Artery Disease

Peripheral Artery Disease

Retinal Diseases

Accomplished Management Team

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

Gil Hakim
CEO

With over 20 years of experience in life sciences, specializing in early-stage innovation and market strategy. Previously with Urogen Pharma **(NASDAQ: URGN**), he holds a B.Sc. in Life Sciences from Ben-Gurion University.

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

With over 25 years of experience in medical operations and biotech, previously with LBT Laser Beam Therapeutics, he holds a Ph.D. in Health Systems Management from Ben-Gurion University

Tal Dvir, PhD
CSO & Co-Founder

A pioneer in regenerative medicine, trained at MIT under Prof. Robert Langer. He founded Tel Aviv University's Tissue Engineering Lab and leads research in nanotechnology-based tissue regeneration.

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).

Tamar Harel Adar, PhD;
VP R&D

An expert in biotechnology with experience at CollPlant **(NASDAQ: CLGN)** and Cellect **(NASDAQ: APOP)**. She holds a Ph.D. in Biotechnology Engineering from Ben-Gurion University.

Member of the 'Best Practice Task Force' focused on the standardization of iPSC-based therapy, led by ISSCR (International Society for Stem Cell Medicine)

Tal Ben Neriah
VP Operations

A leader in biotechnology operations with expertise in regenerative medicine and product development. Previously with CollPlant **(NASDAQ: CLGN),** she holds an M.Sc. in Materials Engineering & Nanotechnology from Tel Aviv University.

Sigal Russo
CFO

With over 16 years of financial experience in biotech and pharmaceuticals. Previously with OWC Pharma **(OTCQB: OWCP)** and Rosetta Genomics **(NASDAQ: ROSG),** she holds a B.A. in Economics and Accounting from Ruppin Academic College.

Hadas Shoham Nissan
Director Clinical and Regulatory affairs

With over 15 years of experience in cell and gene therapy, spanning clinical, regulatory, and business aspects. Previously with Emendo and Gamida Cell (**NASDAQ: GMDA)**, she holds an M.Sc. in Medical Research and an M.B.A. in Finance & Marketing from the Hebrew University.

Anat Shnaiderman
QA Manager

Brings over 15 years of QA and GMP experience in cell therapy and biologics. Previously held roles at BrainStorm Cell Therapeutics (**NASDAQ: BCLI),** Teva Pharmaceuticals (**NYSE: TEVA**), and Cognate BioServices (acquired by Charles River Laboratories, NYSE: CRL). She holds an M.Sc. in Medical Sciences and a B.Sc. in Biology from Tel Aviv University.

Why Matricelf?

Pioneering, innovator in **PERSONALIZED REGENERATIVE THERAPIES**, leveraging proprietary tissue engineering technologies that utilizes patients' own tissues and cells

Transformative platforms:
autologous engineered tissue & 3D bioprinting

Life-changing solutions
restore function and independence

Massive market potential
resolving SCI economic burden of $40b's

Value creation events in the short term
through interim clinical trial readout
& strategic collaborations

Unmatched Investment Opportunity:
Matricelf is positioned for significant valuation growth, provides a high ROI within 3-5 years,
Driven by clinical milestones, regulatory acceleration, and a multi-billion-dollar market entry.

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Thank you

www.matricelf.com

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