



matricelf

REGENERATING THE FUTURE OF
PERSONALIZED MEDICINE



Vision

Driving a new era of **personalized medicine** by delivering **patient-specific** regenerative therapies

Mission

Leveraging cutting-edge **Autologous 3D Tissue Engineering for** transformative patient care

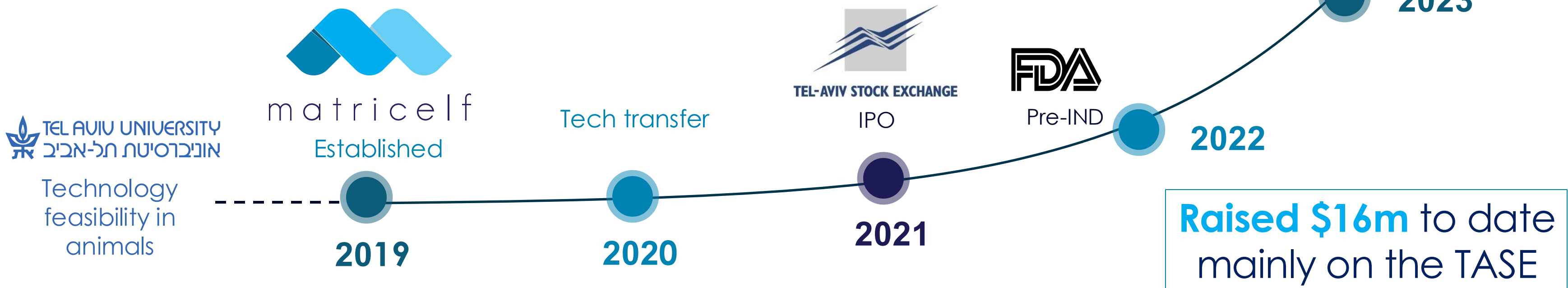


Matricelf: Overview

The 1st Autologous, Engineered Neural Tissue Implant.
One-time curative solution
Starting with Spinal Cord Injuries

Projected Revenue:
\$3 billion over 5 years post-approval

Next milestone:
FIH → H2/2025



Matricelf Assets: Extensive IP

The IP covers the:

- Compositions and methods of manufacturing the **Extracellular Matrix** & the **Engineered Neural Tissue**
- The **support medium** for **3D bioprinting** of biomaterials



Professor Tal Dvir, PhD | Tel-Aviv University | Laboratory for Tissue Engineering & Regenerative Medicine | The Closer Family Chair for Next Generation Organ and Tissue Implants



Award winning researcher; Young and Promising Bio-Medical Researcher Rappaport prize **(2018)**; Juludon foundation research award **(2018)**; The Da Vinci award **(2023)**



6 patent families

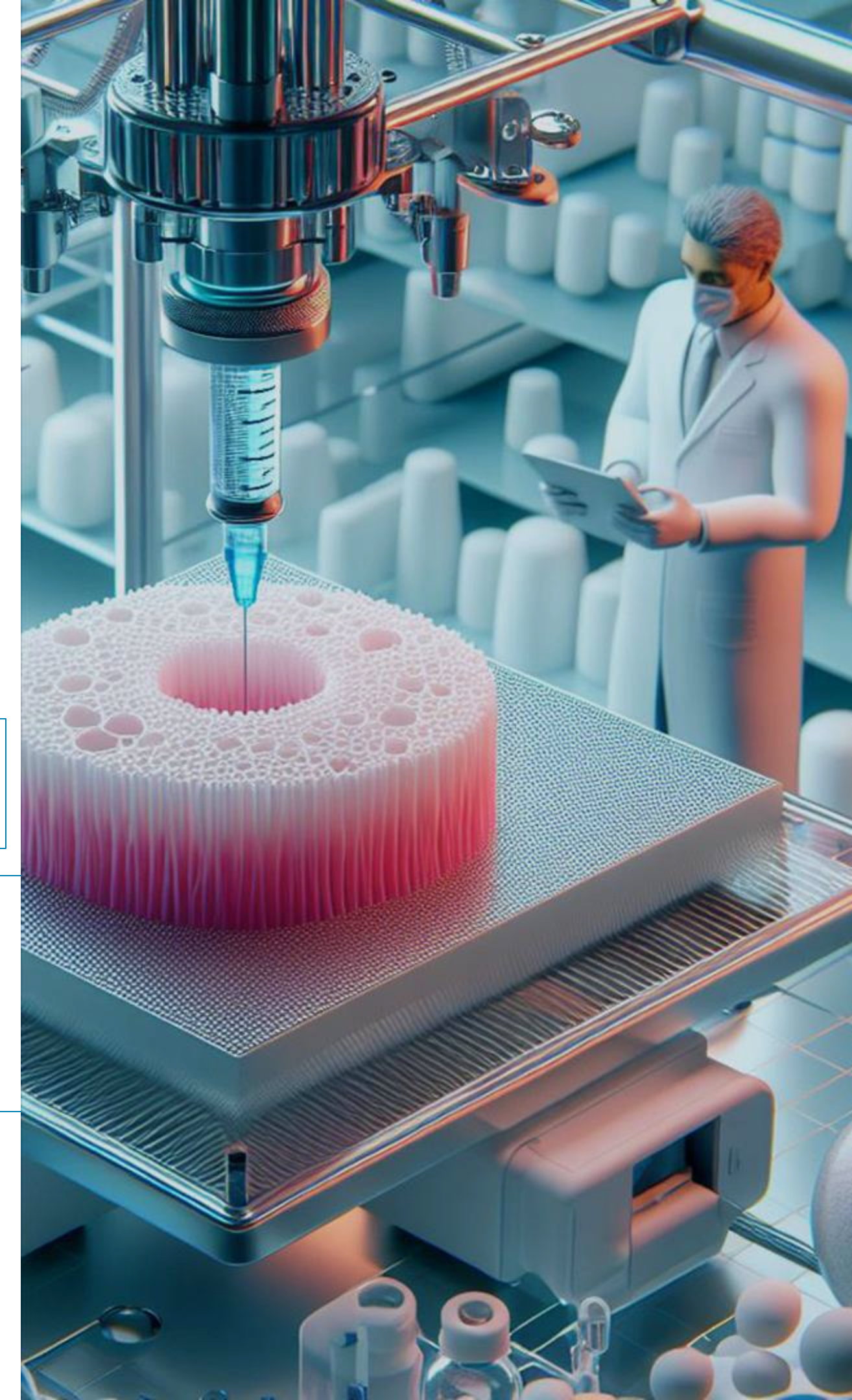


5 patent granted

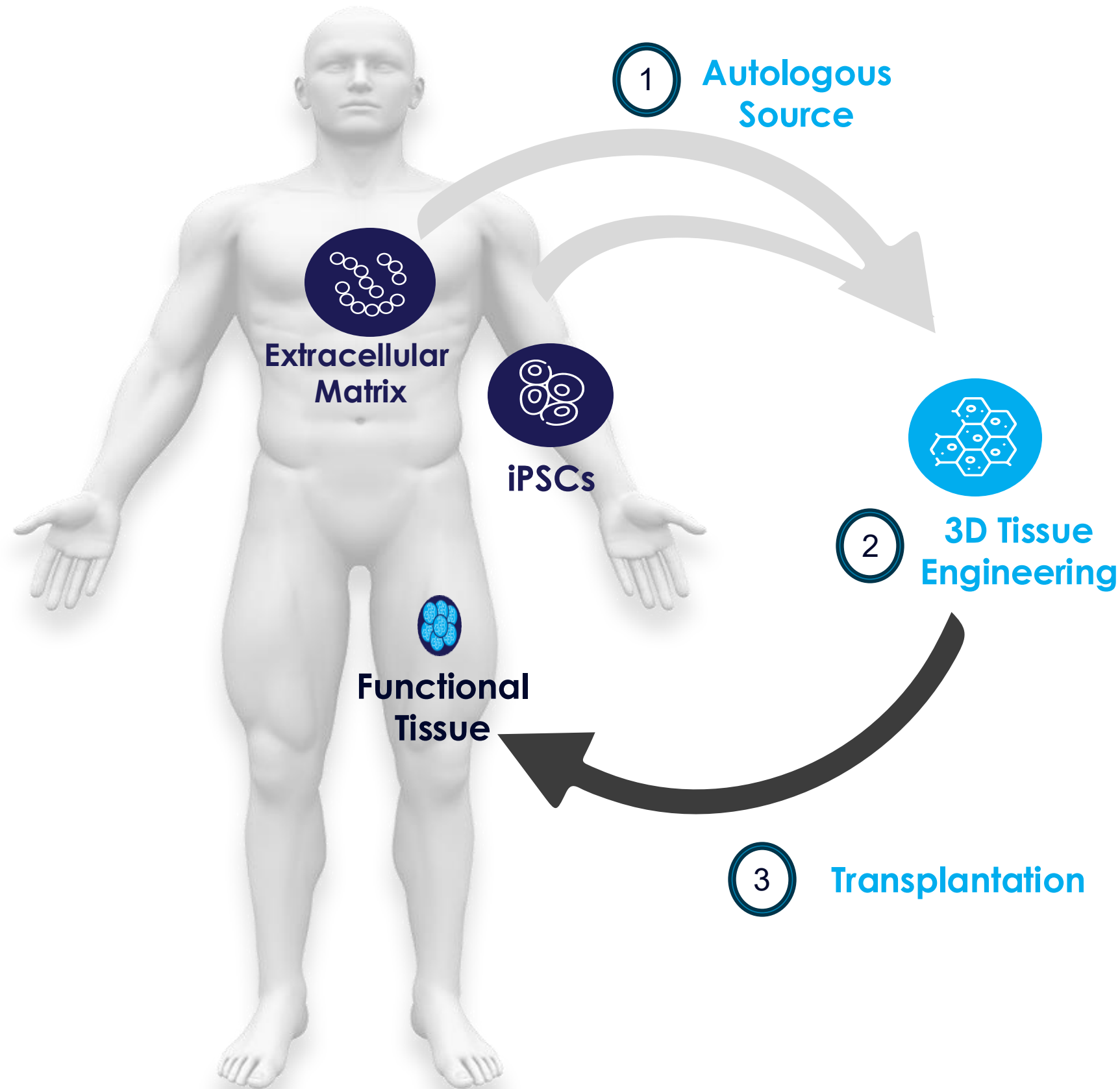


11 patent applications

Unique IP enabling a holistic approach to personalized tissue engineering



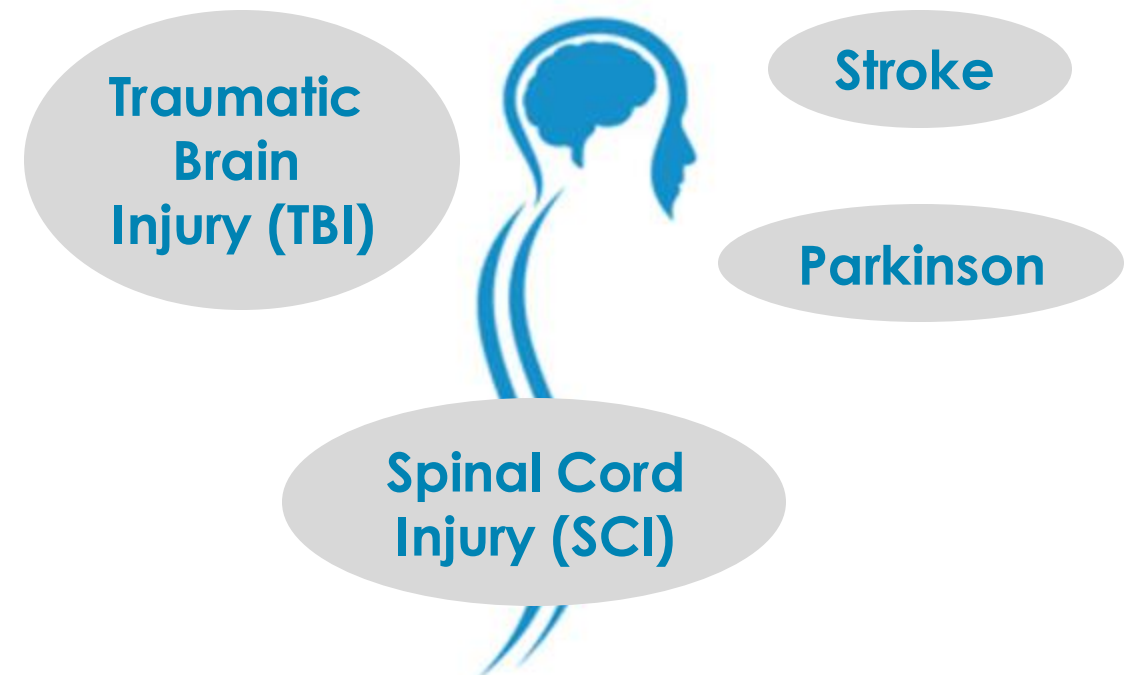
Self-Derived 3D-Engineered Tissue



Generating Autologous Tissue Transplants

Focus on replacing damaged and dysfunctional Neural tissues

For the treatment of neurological disorders

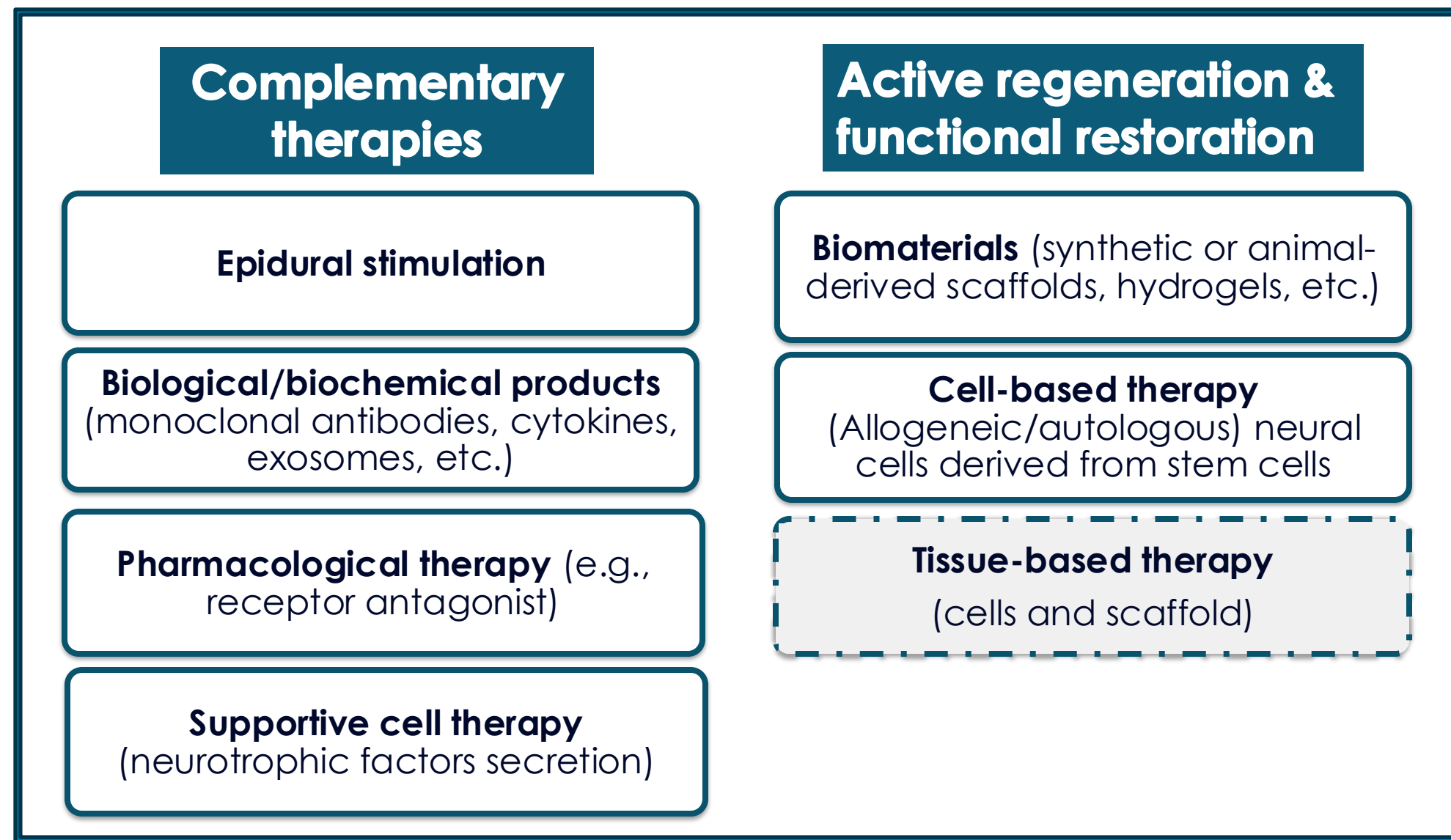


SCI competitive landscape

There is **no Cure to SCI.**

Current treatments are resolved to lifetime palliative care only.

Current investigated approaches



matricell

The only one developing
Tissue-based Cure

Autologous functional engineered
neural tissues (cells & scaffold from
the patient)

- ### key competitive edge
- 1 Minimal rejection risk
 - 2 Enhanced regenerative potency
 - 3 No ethical concerns (none embryonic cells)

Spinal Cord Injury – Market Opportunity



~**300,000**

patients living with spinal cord injury

~**18,000**

new cases per annum



~**15,000,000**

~**250,000**

Average Age: 43

Male (78%) ; Female (22%)

Main Causes: Vehicle (38%); Fall (33%)

>\$50B

U.S. annual costs on SCI

\$2.5M-\$6M

lifetime costs per patient

(pending impairment severity A to D)

\$

+

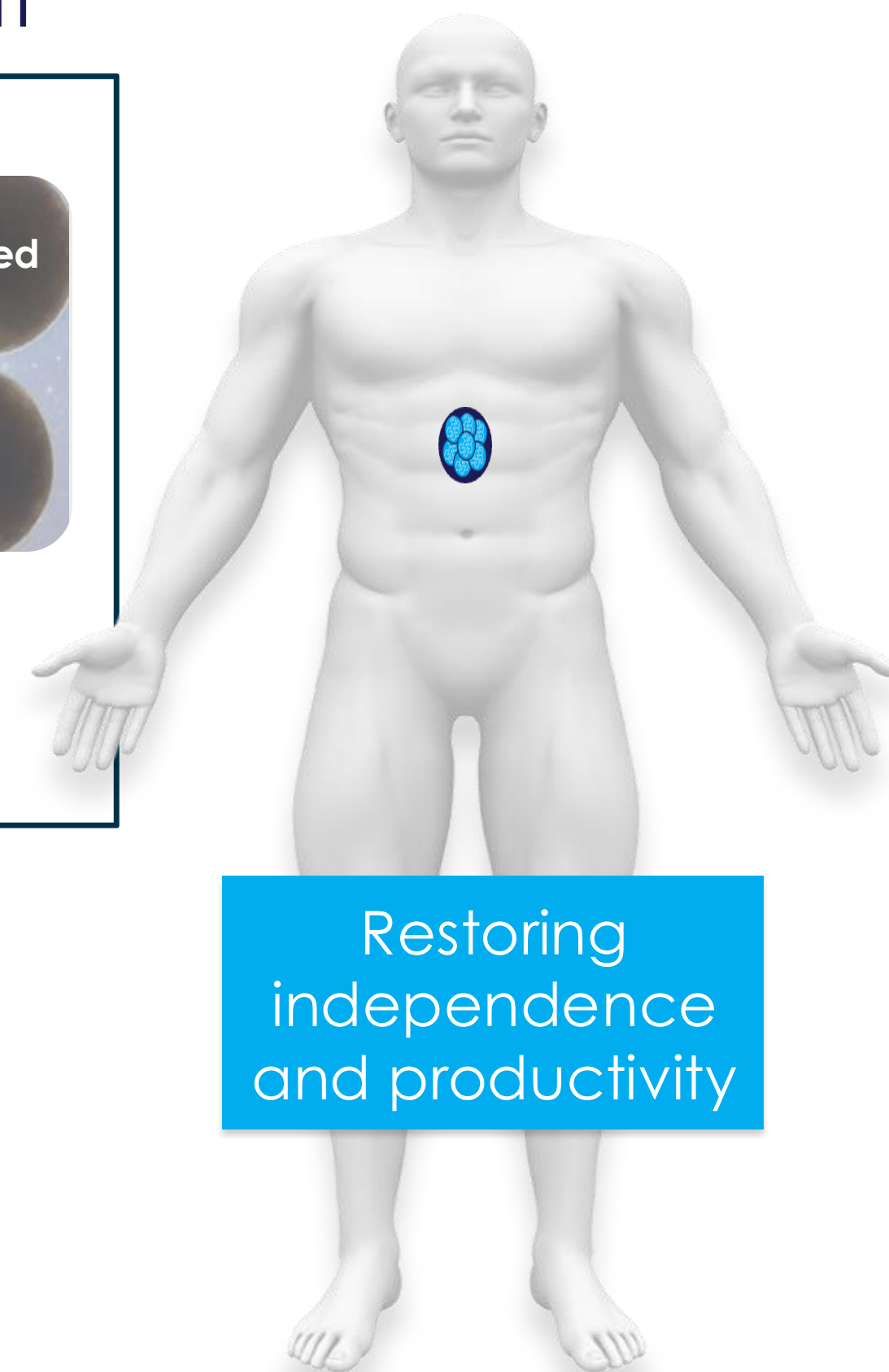
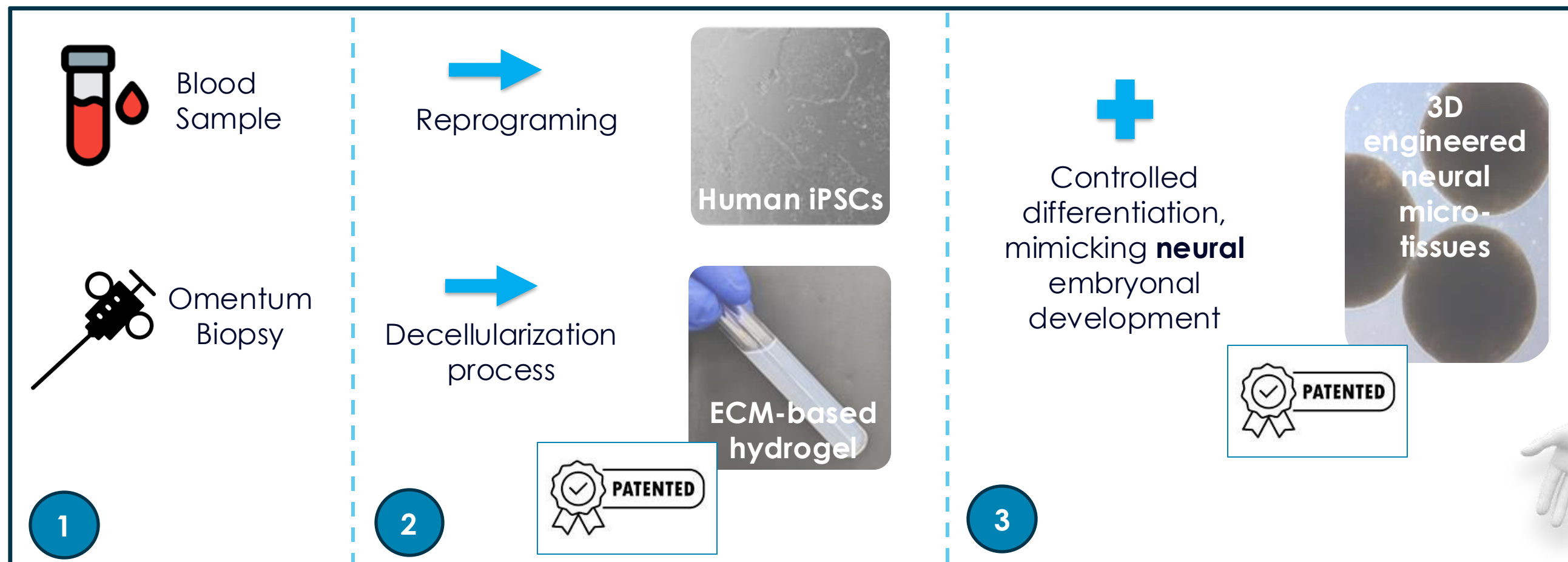
Do not include any indirect costs such as losses in wages, fringe benefits, and productivity of:

~\$1.5M

Each improvement in impairment severity can reduce lifetime costs by **up to \$1.5 million**

Matricelf Solution

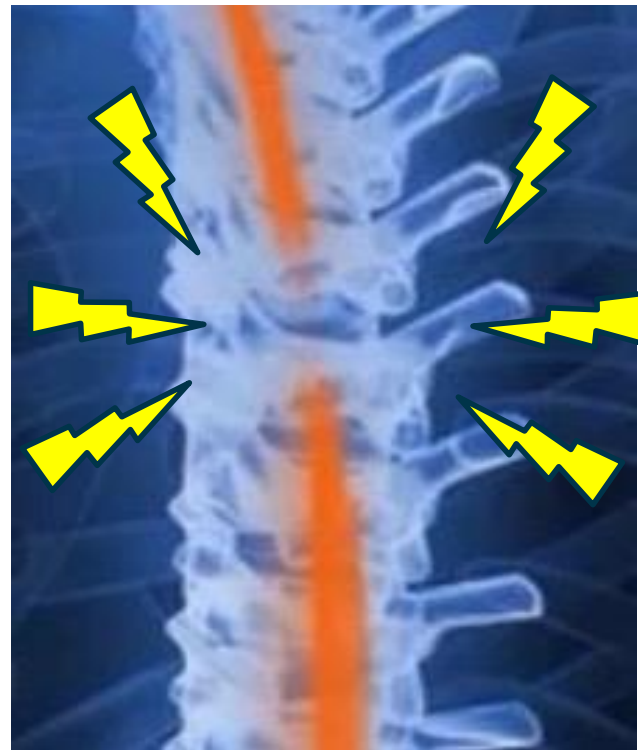
Autologous engineered **neural** tissue transplant



key Benefits

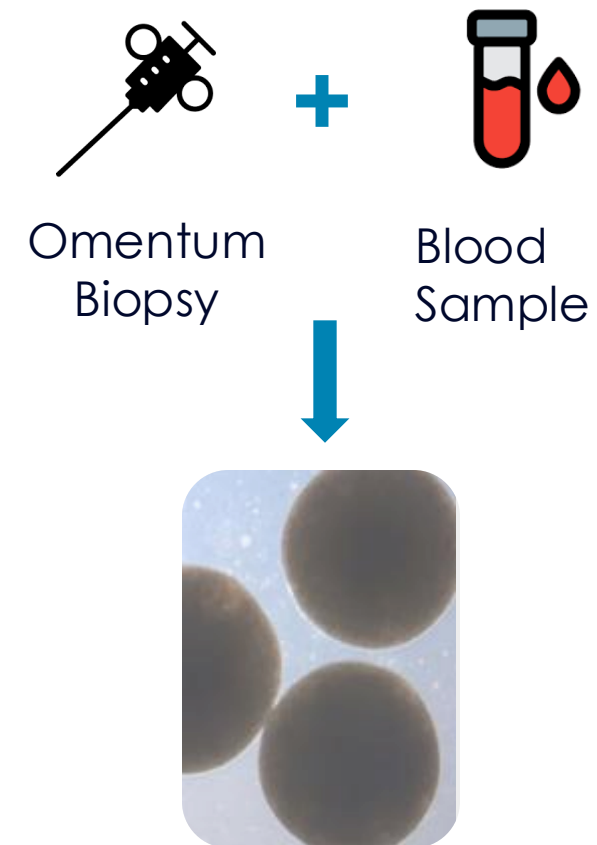
- 1** **One-time curative Treatment**
- 2** **Direct impact on patient quality of life**
- 3** **Direct impact on economic burden**

Treatment Procedure



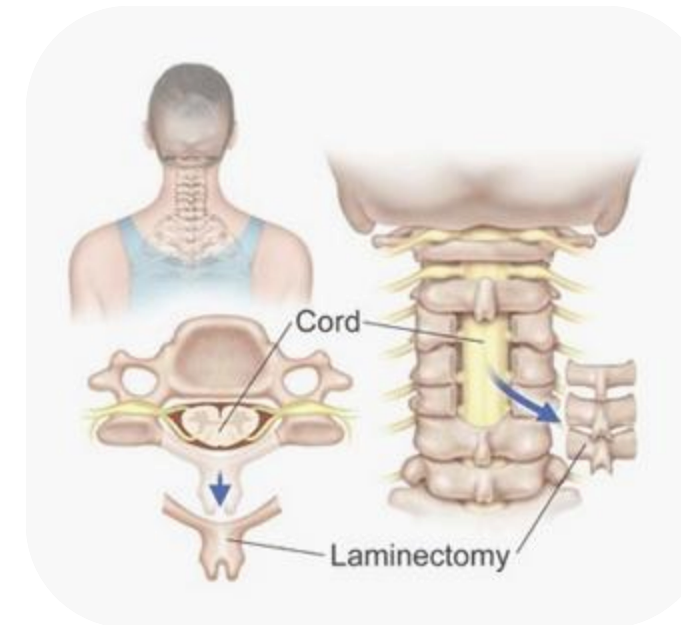
Site of spinal cord injury. disruption in nerve signal transmission

SCI

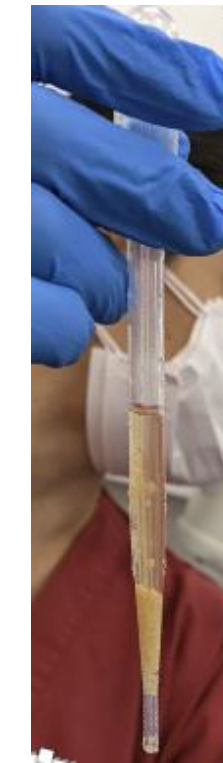


Autologous engineered neural micro-tissues

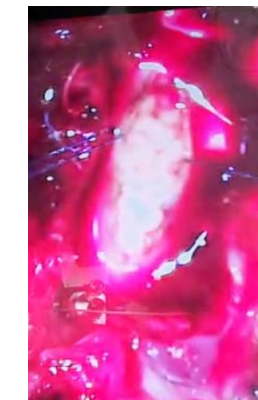
Autologous engineered neural tissue production



Laminectomy



Transfer pipettes filled with engineered neural tissue



SCI site with engineered neural tissue



Neural tissue continuity & regeneration

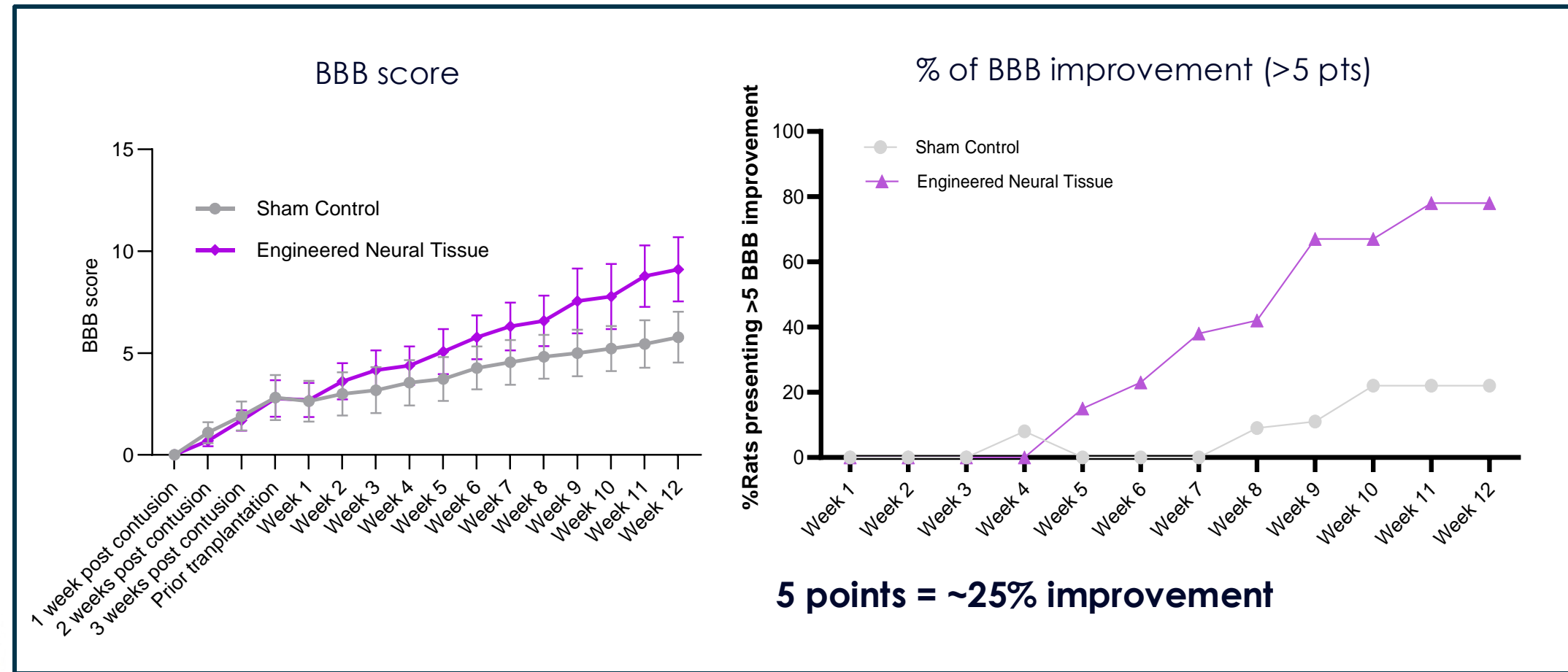
Performed by neurosurgeons using standard surgical procedures and tools

Laminectomy and transplantation of autologous engineered neural tissue

Animal studies validation

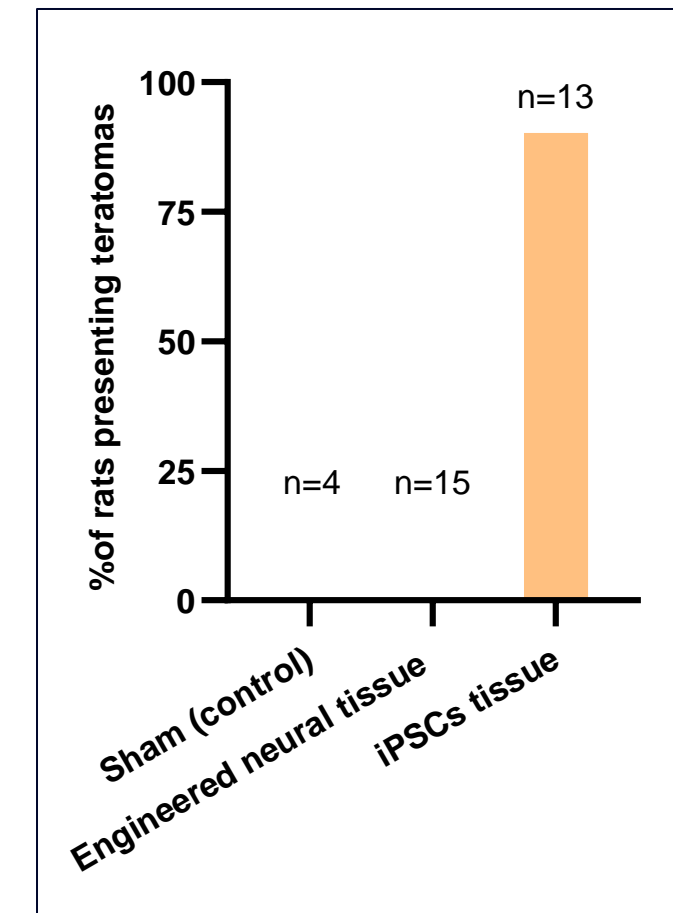
Pilot **efficacy** study

Chronic spinal cord injury rat model (T10 contusion)



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

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

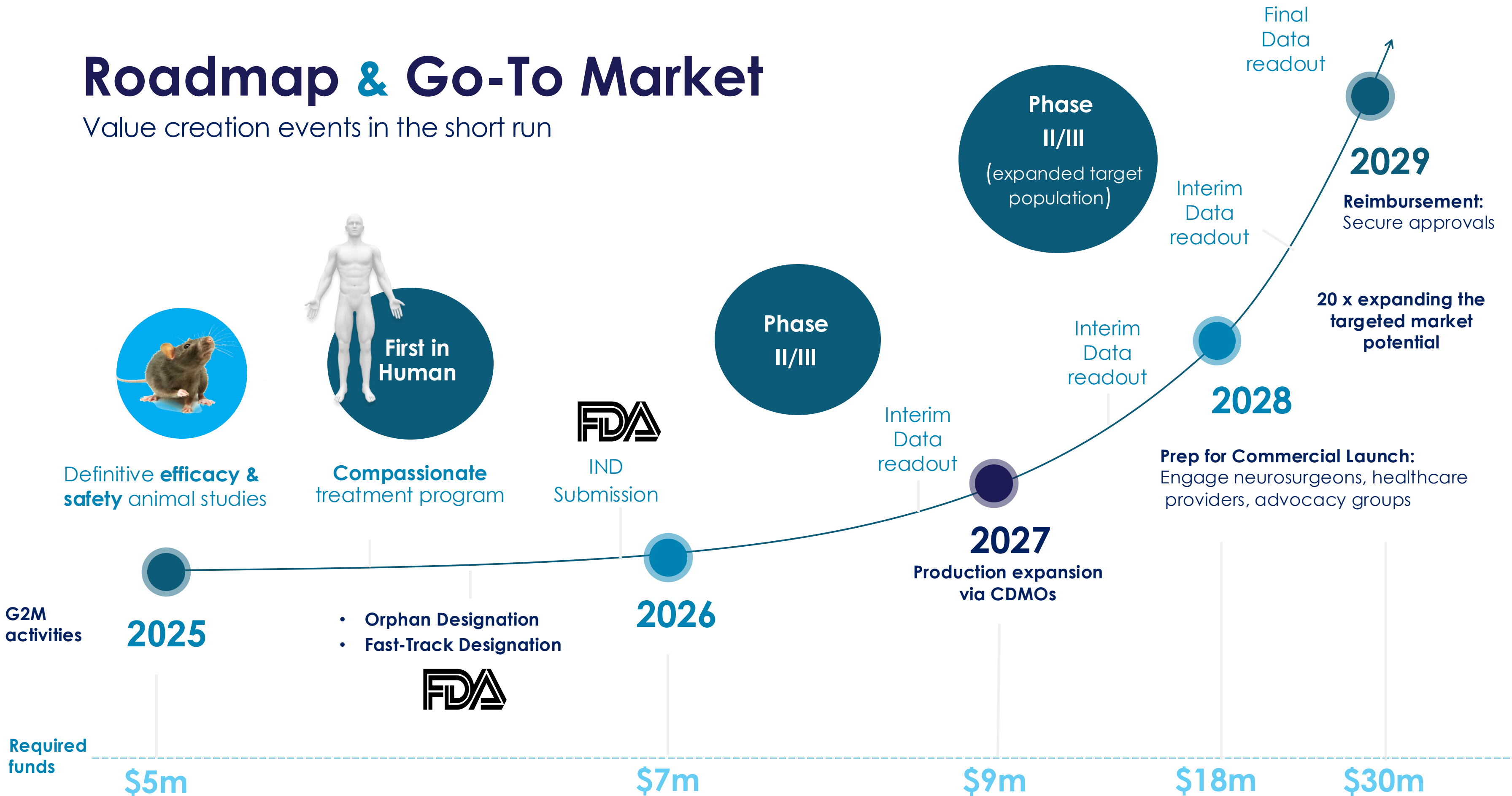


100% of rats presented **a safe profile**

The **BBB score** is a scale used to measure how well rats regain movement after a spinal cord injury, ranging from 0 (no movement) to 21 (normal movement), and helps assess the effectiveness of treatments.

Roadmap & Go-To Market

Value creation events in the short run



Step-wise Go-To-Market approach

1

~4,000 patients

* New patients, suffering from complete thoracic (13%) or cervical (20%) spinal cord injuries, NSCISC 2023

Estimated treatment price 

~\$1.5M

Potential market value 

\$6B annually

2

~90,000 patients

SCI Patients, suffering from chronic complete thoracic (13%) or cervical (20%) spinal cord injuries, NSCISC 2023.

Estimated treatment price 

~\$1.2M

Potential market value 

>\$105B

3

~300,000 patients

All SCI Patients

Estimated treatment price 

~\$900K

Potential market value 

>\$250B

Business Model

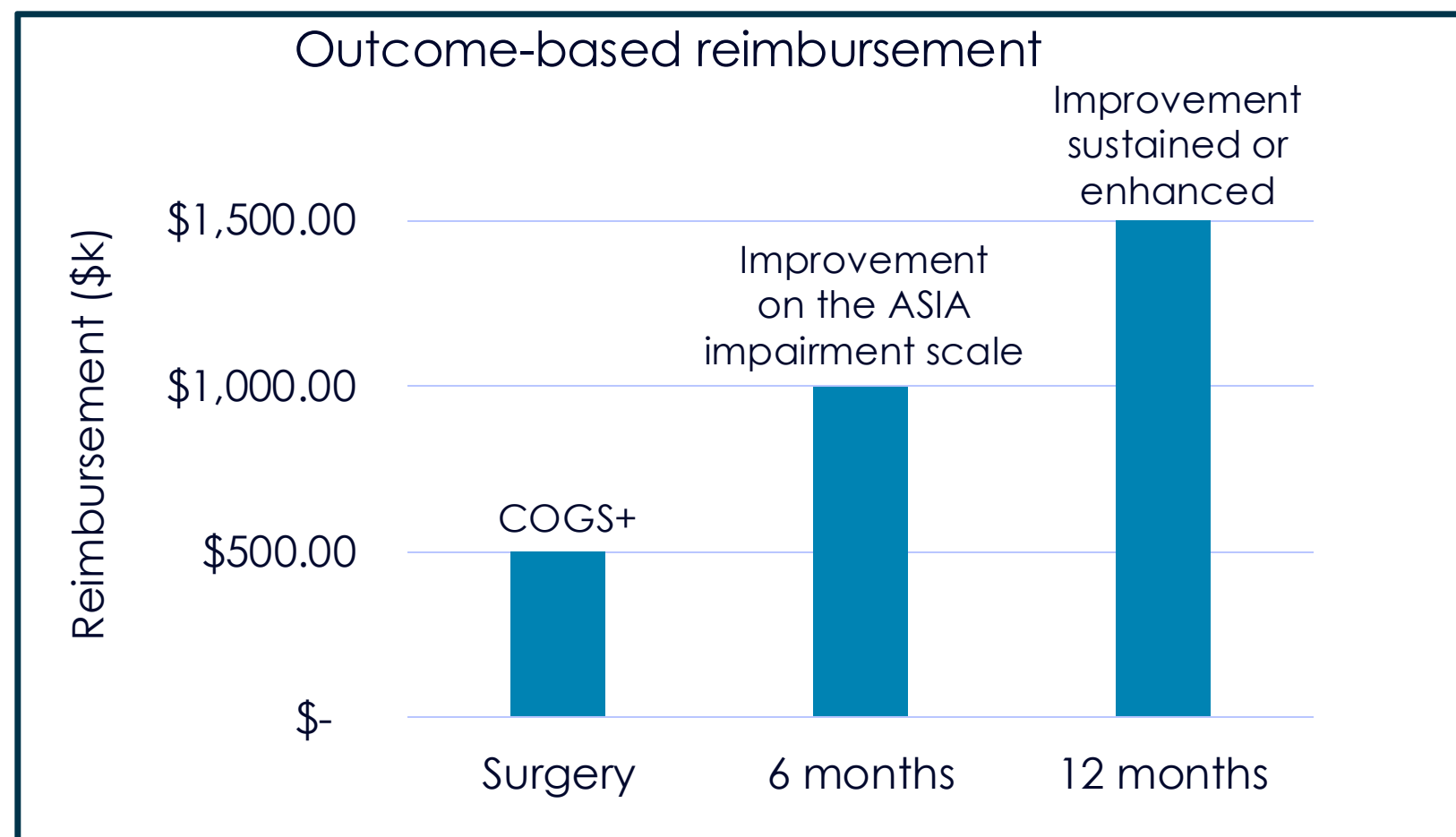
End-to-End Approach for Personalized SCI Treatment



End-to-end product and service, covering all steps up to transplantation and rehabilitation, with centers in strategic locations

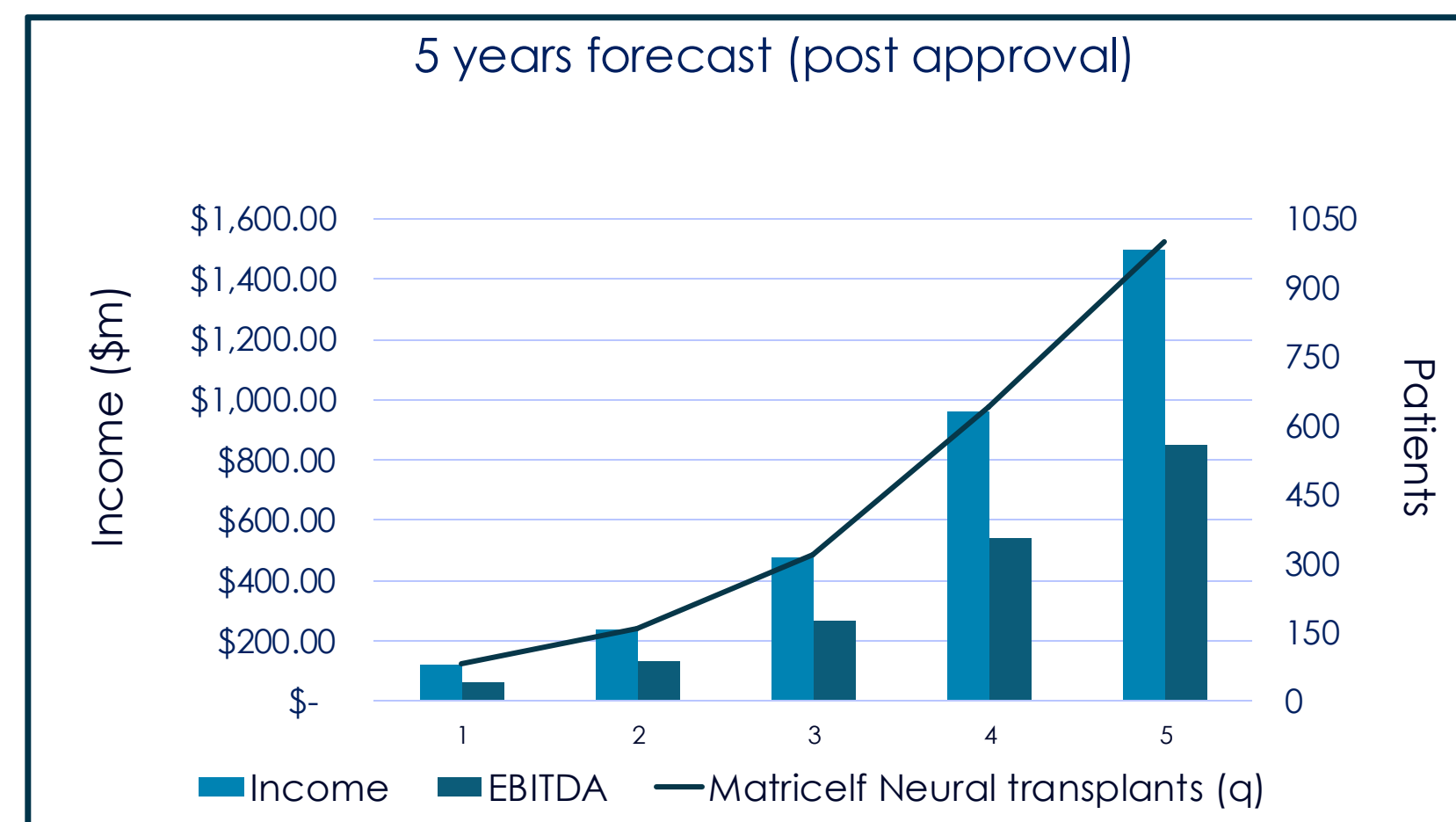
Revenue & Cost Structure

Treatment priced at \$1.5 million



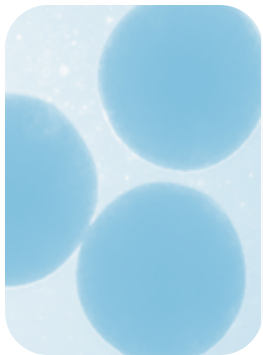
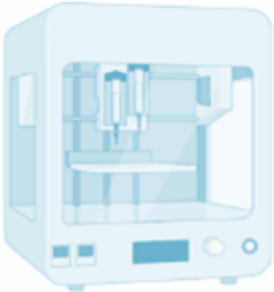
Projected Revenue:

\$3 billion in revenue over five years post approval



Matricelf – Growth Drivers

- Neurological disorders – Core activity, leading product for SCI treatment
- 3D bio-printing – Commercialization for drug discovery and autologous micro-organ grafting

Platform	Product	Indication	Discovery	Preclinical	Clinical
 <p>Micro-tissue</p> <p>Engineered Autologous tissues</p>	Motor Neurons	SCI (Spinal Cord Injury)		IND enabling studies	2025
	Cortical Neurons	TBI (Traumatic Brain Injury)	In-vivo		
	Cortical Neurons	Stroke	In-vivo		
	Dopaminergic Neurons	Parkinson Disease	In-vivo		
	Conduction Tissue	Arrhythmia	In-vitro		
 <p>Volumetric Bioprinting</p> <p>Bio-printed Autologous organs</p>	Myocardial patch	CVD (Cardio-Vascular Disease)	In-vivo		
	Retinal Tissue	Vision Restoration	In-vitro		
	Blood Vessels	Vascular Disease	Ex-vivo		
	3D vascularized tissue (Retinal, Neurological, Cardiac)	Drug Discovery	Ex-vivo		

Accomplished Management Team



GIL HAKIM
CEO
NASDAQ: **URGN**



ALON SINAI, PhD
Dep. CEO, Co-
Founder & President



SIGAL RUSSO, CPA
CFO
NASDAQ: **ROSG**



TAMAR HAREL ADAR, PhD
VP R&D
NASDAQ: **CLGN**



TAL BEN NERIAH, MSc
VP Operations
NASDAQ: **CLGN**



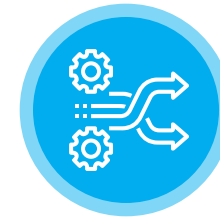
DORON BIRGER
Chairman
Given Imaging
(**Medtronic**); Elron



TAL DVIR, PhD
CSO & Co-Founder
Tel Aviv University

Why Matricelf?

Pioneering, innovative developer of **PERSONALIZED REGENERATIVE THERAPIES**, based on proprietary tissue engineering technologies utilizing patients' own tissues and cells



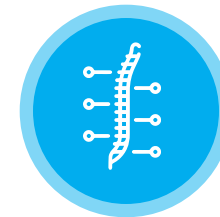
Game-changing platforms

autologous engineered tissue & 3D bioprinting



Life-changing solutions

restore function and independence



Massive market potential

resolving economic burden of \$100b's



Value creation events in the short run

Interim readouts from clinical trials & strategic collaboration for the bioprinting technology

Forward Looking Statement and Disclosure

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