



matricelf

REGENERATING THE FUTURE OF
PERSONALIZED MEDICINE



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הבהרה משפטית ומידע צופה פני עתיד

מצגת זו אינה מהווה הצעה לרכישת ניירות הערך של מטריסלף בע"מ ("החברה") או הזמנה לקבלת הצעות כאמור, והיא נועדה אך ורק למסירת מידע. בהתאם, המצגת נערכה כמצגת תמציתית בלבד, אינה כוללת את כל המידע העשוי להיות רלוונטי לצורך קבלת החלטה כלשהי בנוגע להשקעה בניירות ערך של החברה ואינה ממצה את מלוא הנתונים לגבי החברה ופעילותה. כמו כן, אין במצגת כדי להוות תחליף לייעוץ השקעות או שיווק המתחשב בנתוניו ובצרכיו המיוחדים של כל אדם או משקיע והאמור בה אינו מהווה חוות דעת מקצועית או תחליף לשיקול דעת של משקיע פוטנציאלי וכן אינה מחליפה את הצורך בבדיקה עצמאית.

כל האמור במצגת כפוף לאמור בדיווחים הרלוונטיים של החברה המתפרסמים באתרי ההפצה של רשות ניירות ערך והבורסה ואינה מיועדת להחליף את העיון בהם. כמו כן, מובהר כי חלק ניכר מן המידע המוצג במצגת זו לקוח או נגזר מדיווחיה של החברה, אם כי מוצג באופן מרכז או גרפי או תמציתי, ולפיכך, מצגת זו אינה מהווה תחליף לעיון בדיווחי החברה.

מצגת זו עשויה לכלול נתונים שהחברה אספה מצדדים שלישיים שהחברה אינה יכולה לערוב לנכונותם היות ולא בדקה את הנתונים בעצמה. במצגת זו כללה החברה מידע הצופה פני עתיד, כהגדרתו בחוק ניירות ערך, תשכ"ח-1968. מידע כאמור כולל, בין היתר, תחזיות, מטרות, הערכות ואומדנים, לרבות מידע המובא בדרך של איורים, גרפים או טבלאות, המתייחסים לאירועים או עניינים עתידיים אשר התממשותם אינה וודאית ויכול שיושפעו מגורמים אשר לא ניתן להעריכם מראש ושאינם בשליטת החברה. בהקשר זה יובהר כי, נכון למועד פרסום מצגת זו טרם הושלם הליך המחקר והפיתוח של המוצר ו/או הטיפול אותו מפתחת החברה, השתל טרם נוסה בבני אדם וכי אין כל ודאות כי פיתוח כזה יושלם ו/או האם יתקבל אישור רגולטורי לשיווק השתל. כמו כן, הערכות החברה בדבר תוכניותיה לתהליך המחקר והפיתוח הן מידע צופה פני עתיד. הערכות ותחזיות אלו עשויות שלא להתממש, כולן או חלקן, או להתממש באופן שונה מהותית מכפי שנצפה, וזאת, בין היתר, לנוכח העובדה שהמחקר והפיתוח הוא ראשוני ותקדימי מסוגו; כמו כן, בשל שינויים בשווקים ו/או בשל שינויים רגולטוריים ו/או צורך בגיוסי הון נוספים במסגרת הליך הפיתוח. התממשותו של המידע הצופה פני עתיד, כולו או חלקו, או באופן שונה מכפי שהעריכה החברה, או אי התממשותו, יושפעו, בין היתר, מגורמי הסיכון המאפיינים את פעילות החברה, לרבות יכולתה לגייס הון הדרוש לשם הוצאת תוכניותיה אל הפועל, מההתפתחויות בסביבה הכללית ובגורמים החיצוניים המשפיעים על פעילות החברה.

אלא אם נדרש על פי דין, החברה אינה מתחייבת לעדכן או לשנות את המידע הכלול במצגת על מנת שישקפו אירועים או נסיבות שיחולו לאחר מועד עריכת המצגת.

Vision

To drive **personalized medicine** into a new era by enabling each patient with their own **dedicated bio-factory**

Mission

Employing an innovative **Autologous 3D Tissue Engineering** technology

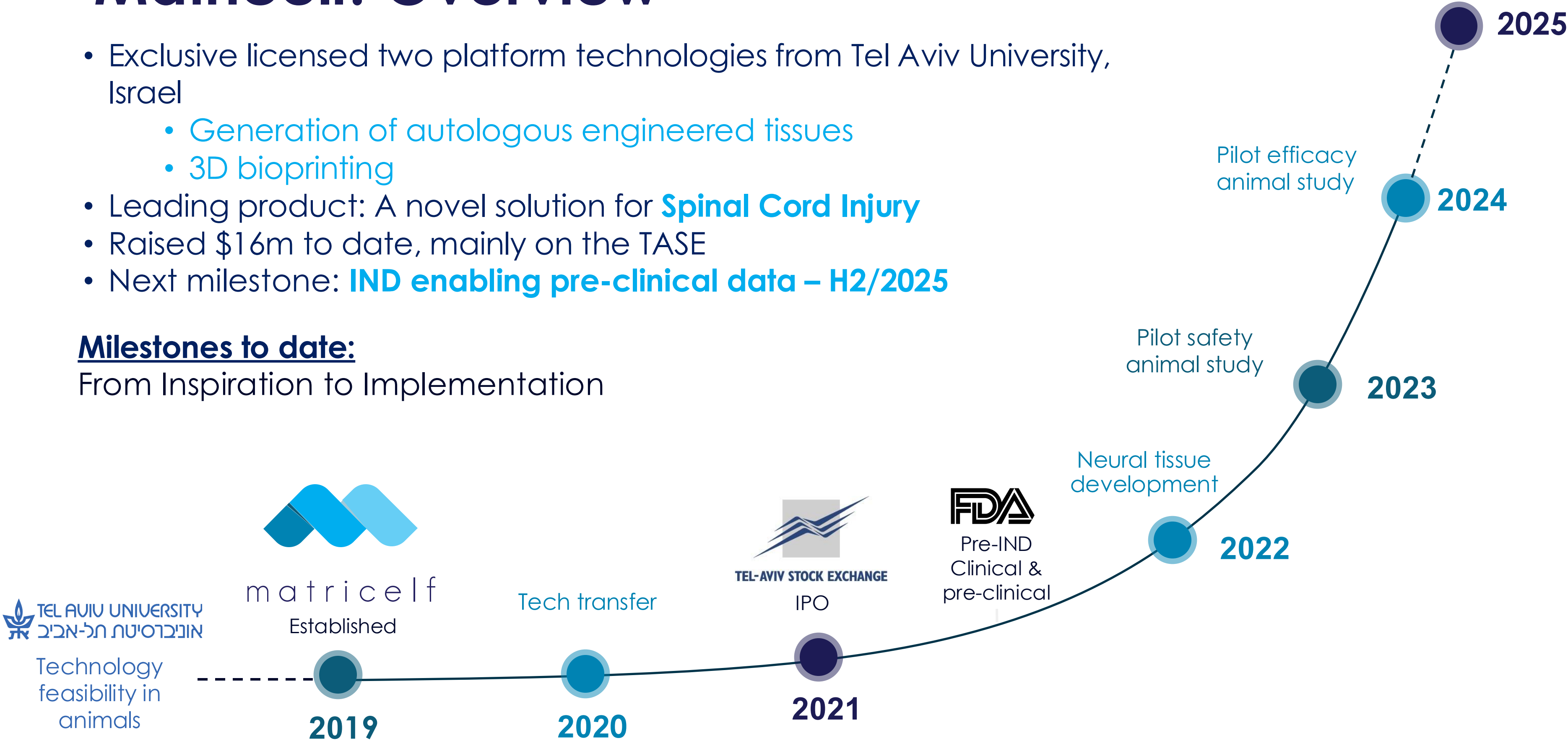


Matricelf: Overview

- Exclusive licensed two platform technologies from Tel Aviv University, Israel
 - Generation of autologous engineered tissues
 - 3D bioprinting
- Leading product: A novel solution for **Spinal Cord Injury**
- Raised \$16m to date, mainly on the TASE
- Next milestone: **IND enabling pre-clinical data – H2/2025**

Milestones to date:

From Inspiration to Implementation



Matricelf Assets: Extensive IP

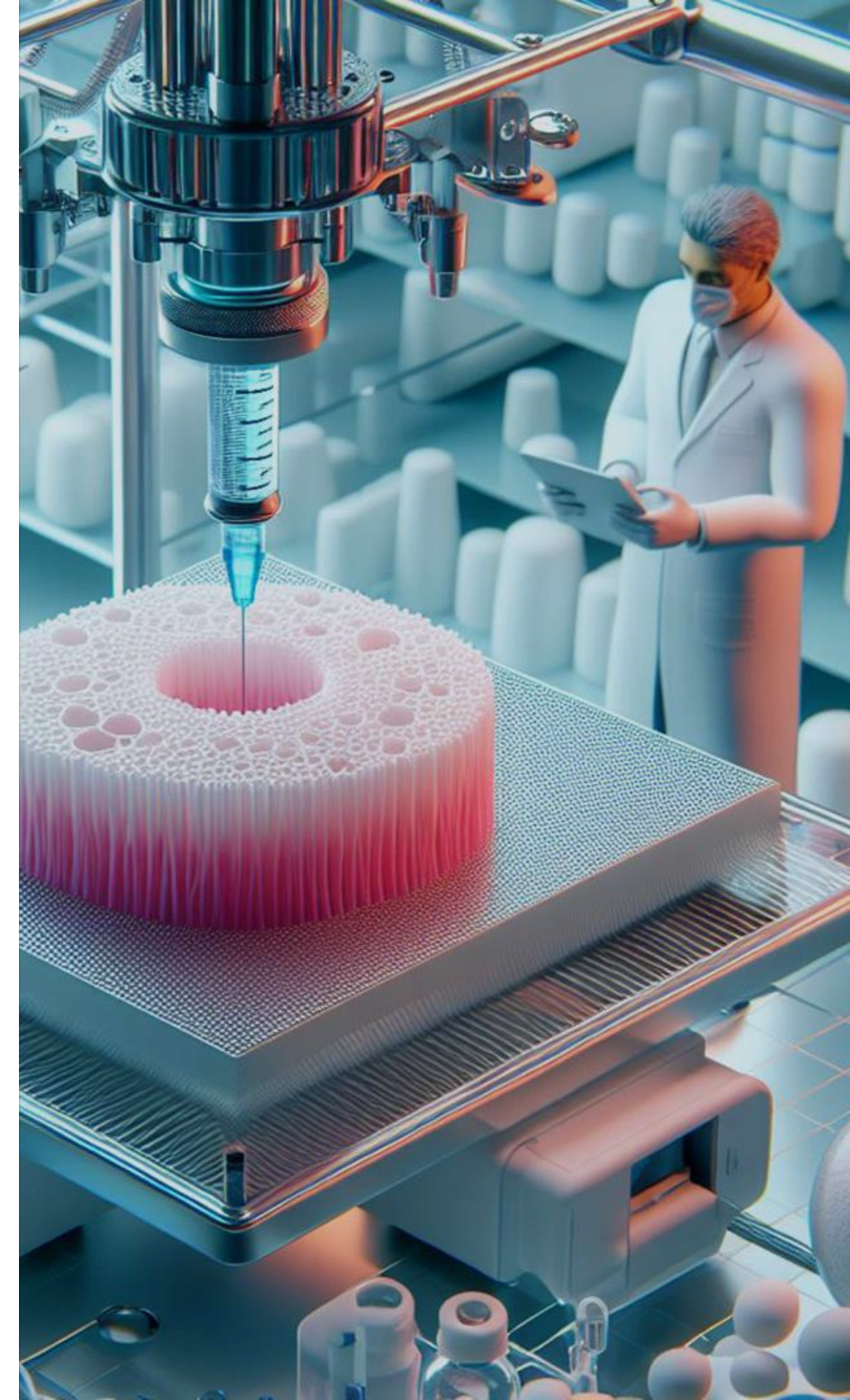
- **Licensed from TAU**
 - 6 patent families
 - 4 patents granted
 - 12 patent applications



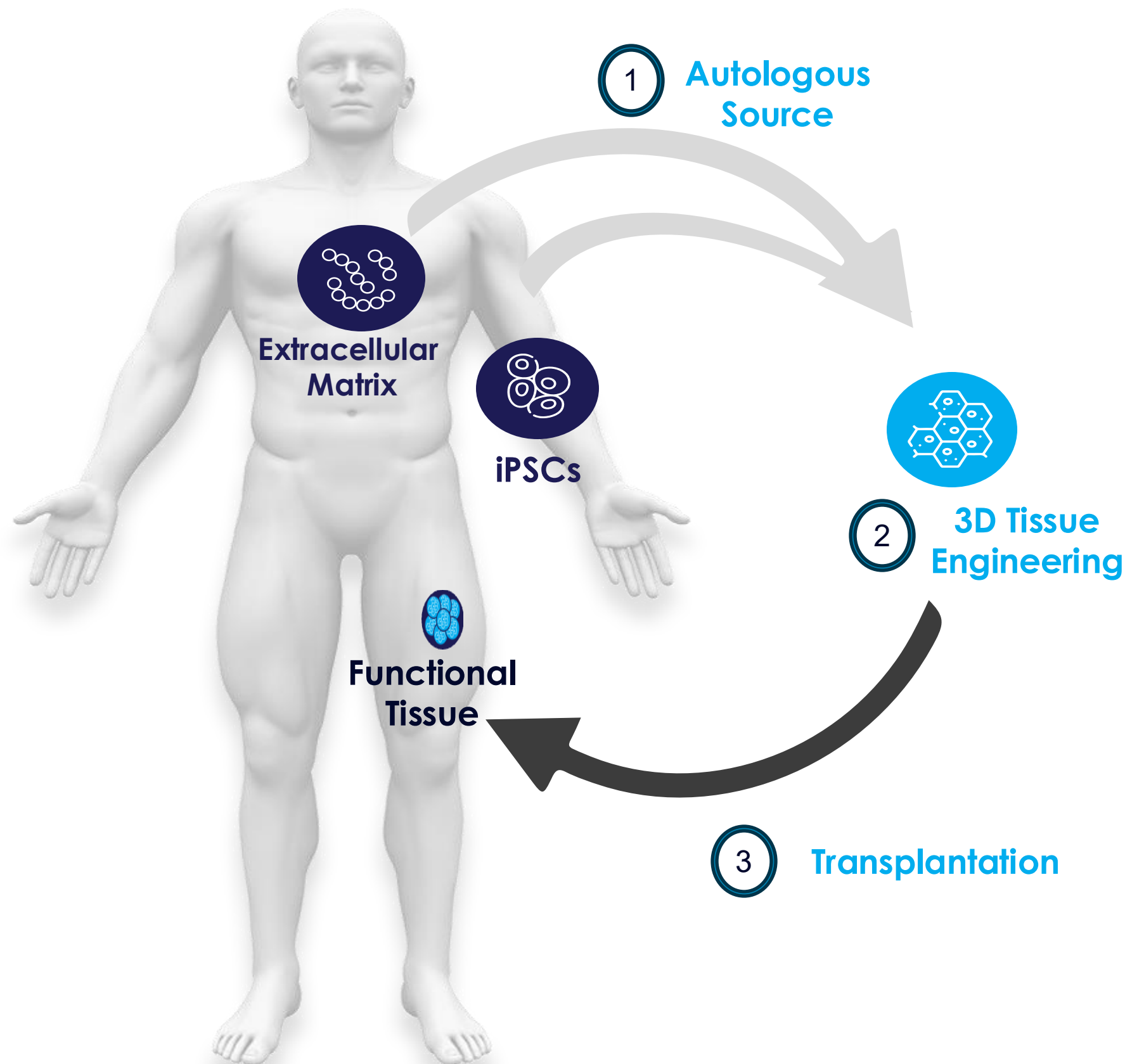
Professor Tal Dvir, PhD | Tel-Aviv University
Laboratory for Tissue Engineering &
Regenerative Medicine
The Closner Family Chair for Next
Generation Organ and Tissue Implants

Covers the:

- **Compositions** and methods of **manufacturing** the **Extra Cellular Matrix**
- The **engineered neural tissue**
- The **support medium** for **3D bioprinting of biomaterials**



Self-Derived 3D-Engineered Tissues: Reconstructing Personalized Tissue



Creating an **Autologous 3D Tissue Transplant**

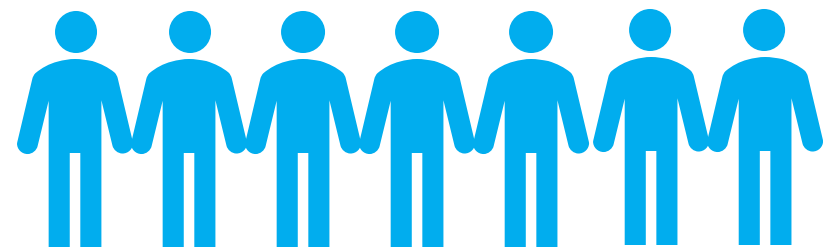
Replacing damaged and dysfunctional tissues

From Laboratory to Lives:

Reenvisioning healing possibilities for severe injuries

Targeted Indication:

Applying Proprietary Tissue Engineering to **Spinal Cord Injuries**



Every day, **~700*** individuals worldwide suffer **spinal cord injuries**, Over 30% result in complete paraplegia / tetraplegia

Yariv Bash,
Co-founder, Spacell



“ Humanity has succeeded in reaching space, but we still haven't managed to bridge the two centimeters of an injured spinal cord ”

Offering innovative solutions where traditional approaches are inadequate

* World Health Organization (WHO): <https://www.who.int/news-room/fact-sheets/detail/spinal-cord-injury>

Spinal Cord Injury – the Metrics



~**300,000**

patients living with spinal cord injury



~**15,000,000**

~**18,000**

new cases per annum

~**250,000**

Average Age: 43

Male (78%) ; Female (22%)

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

>\$25B

U.S. annual costs

\$2.5M-\$6M

lifetime costs



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

~\$1.5M

Competitive landscape

Current approaches in development for **Spinal Cord Injury** treatment

Complementary therapies

Epidural stimulation

Biological/biochemical products (monoclonal antibodies, cytokines, exosomes, etc.)

Pharmacological therapy
(e.g., receptor antagonist)

Supportive cell therapy
(neurotrophic factors secretion)

Active regeneration & functional restoration

Biomaterials
(synthetic or animal-derived scaffolds, hydrogels, etc.)

Cell-based therapy
(Allogeneic/autologous) neural cells derived from stem cells

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

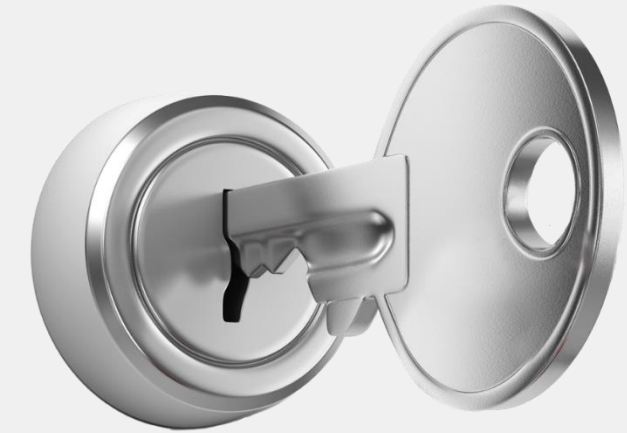


Matricelf offers one-of-a-kind functioning, autologous, 3D engineered neural tissue

Competitive advantage

Autologous Tissue

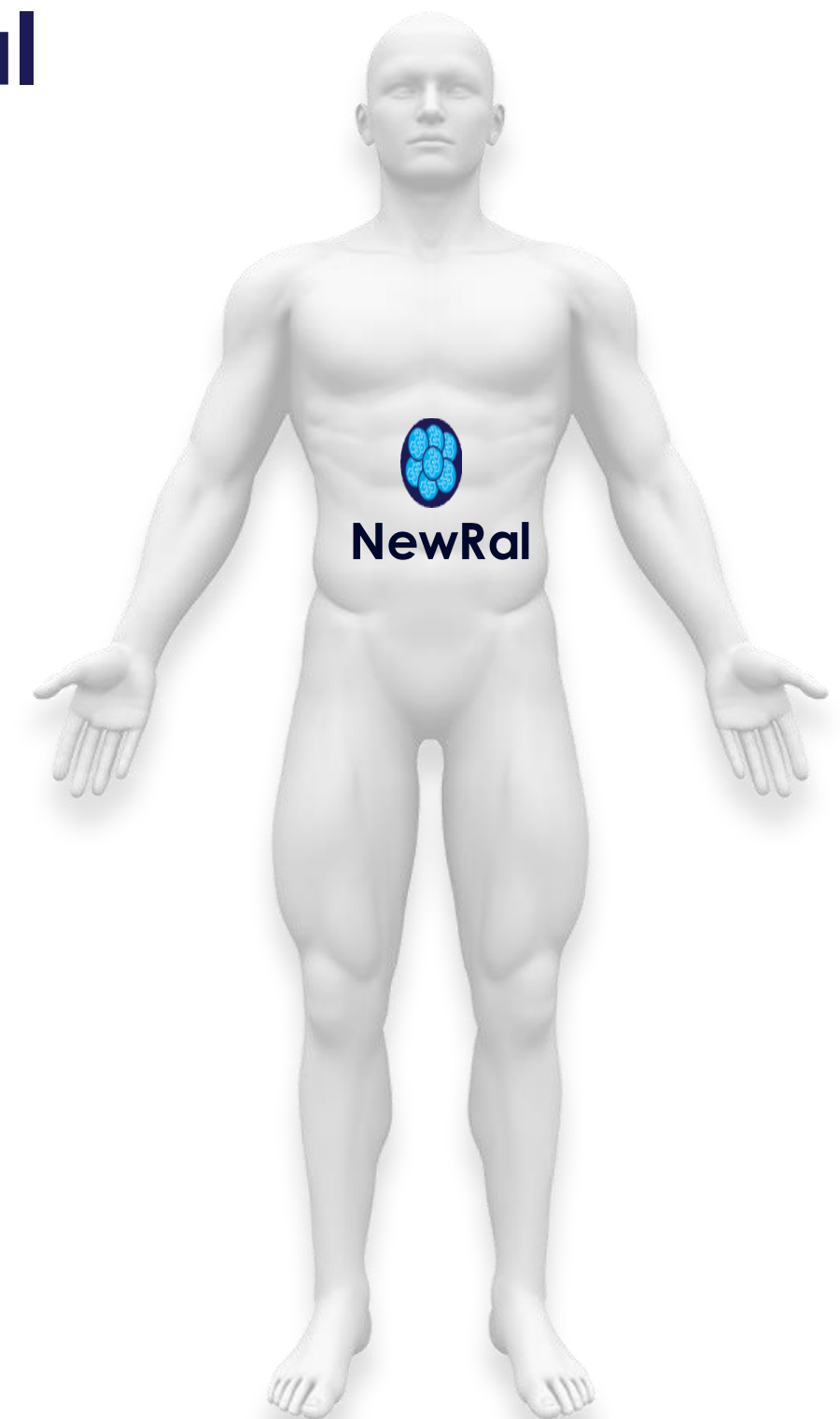
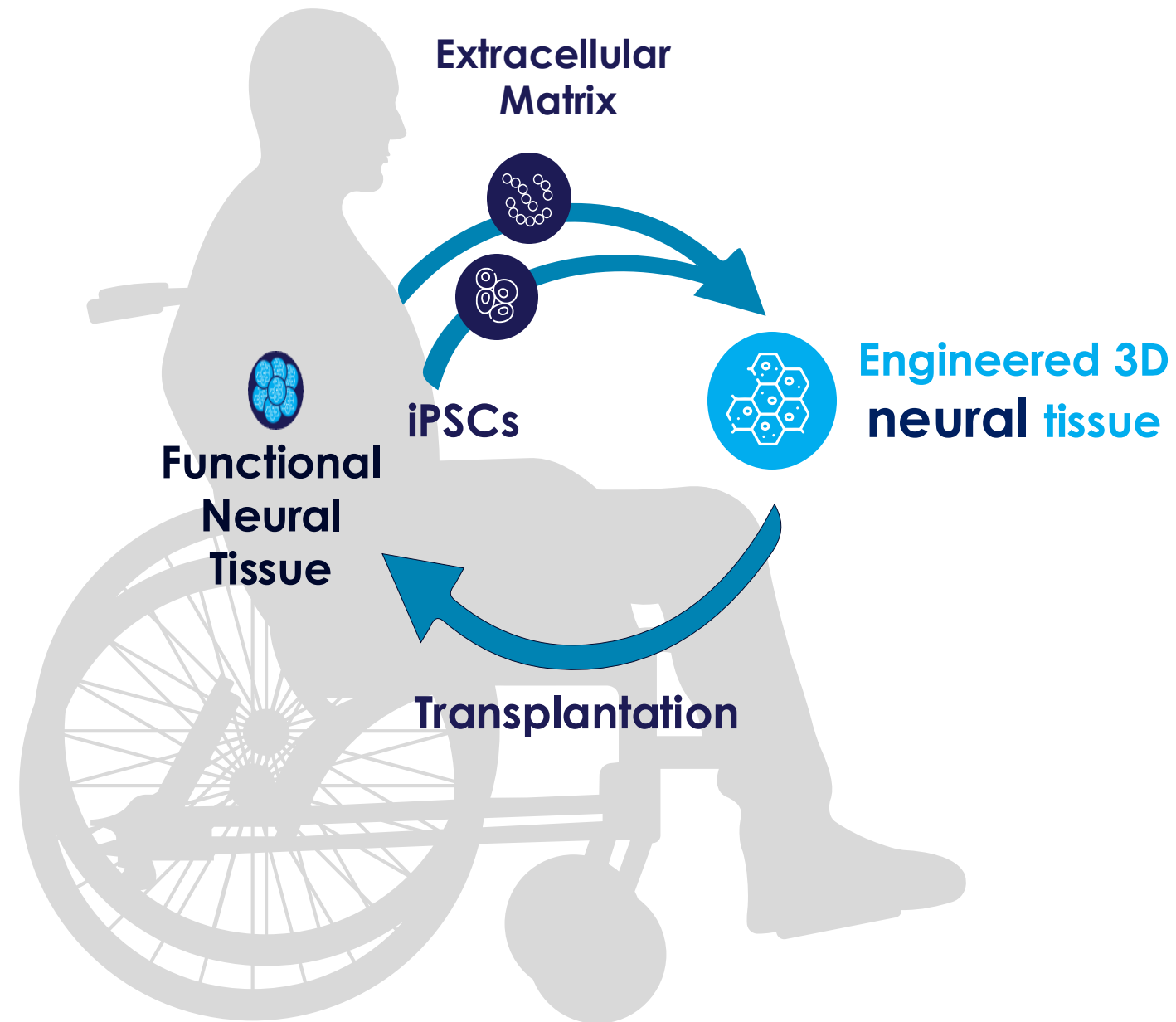
The utilization of autologous tissue **minimizes the risk of immune response** and **rejection** compared to synthetic or allogeneic alternatives



Superior Regenerative Potency

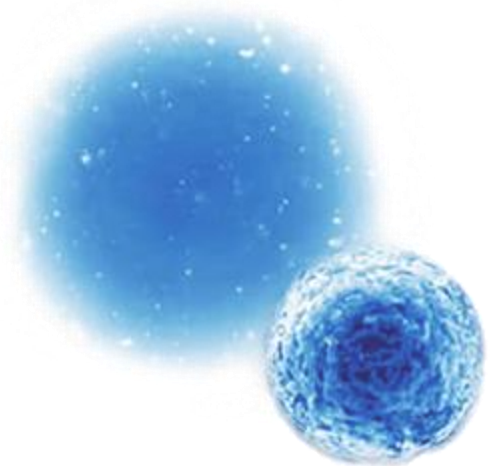
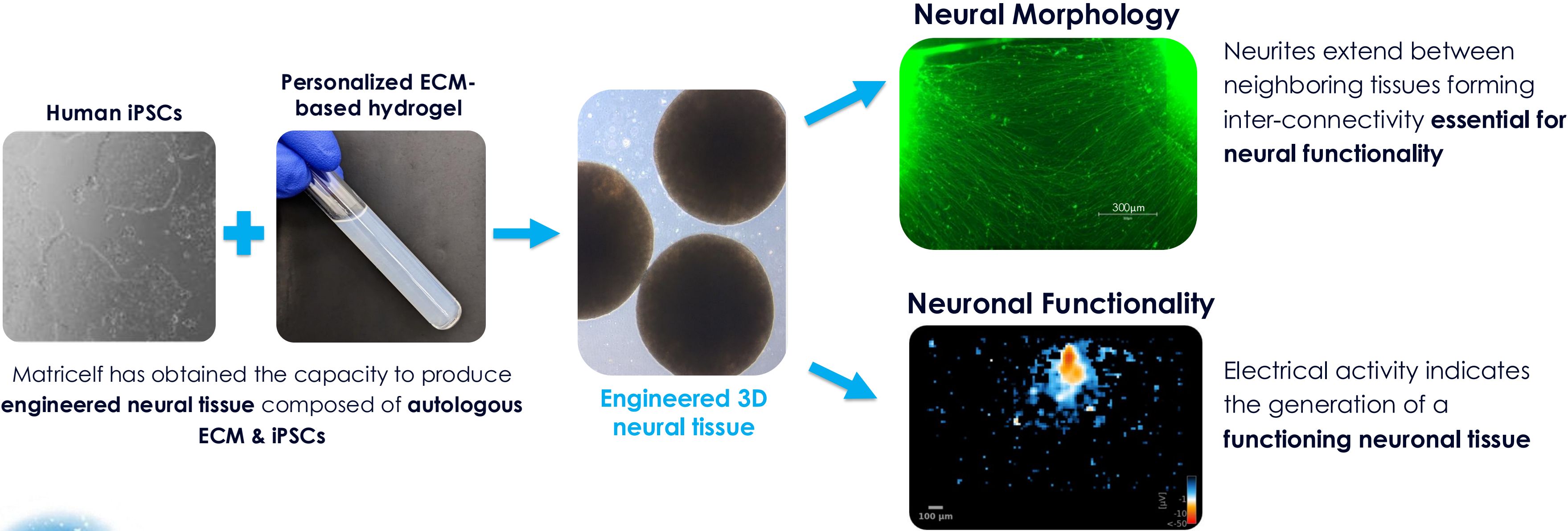
Transplantation of **a functional tissue** has the potential **to unlock a fuller range of capabilities**, that individual-cell-based therapies may not achieve

NewRa™ – The 1st Patient-based engineered neural tissue for spinal cord injury treatment



Matricelf aims to address SCI by replacing the 'missing piece' in the damaged spinal cord with the **subject's own tissue**

NewRa1™ – Morphology and Functionality

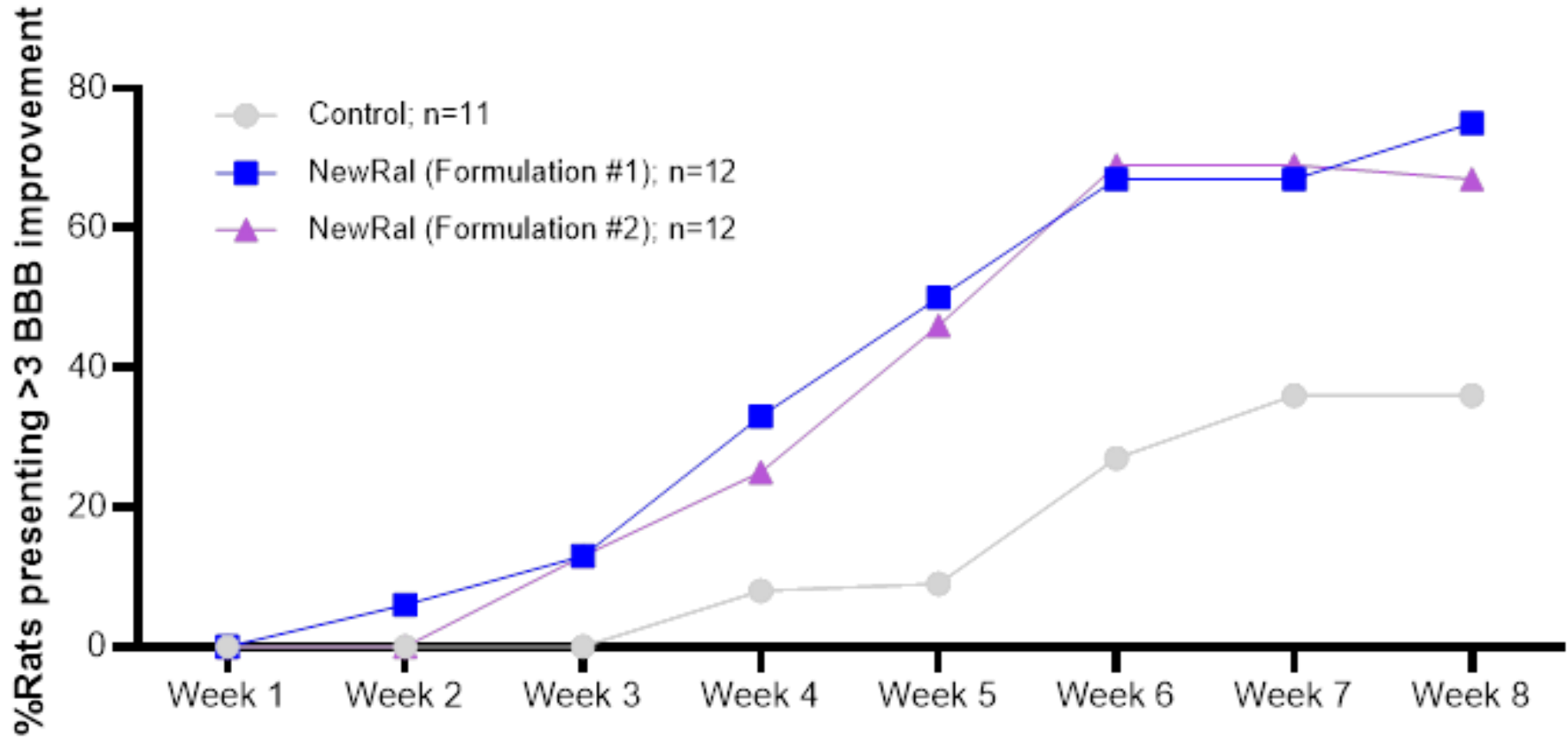


NewRa1™ – The engineered tissue demonstrates native neural function

ECM: Extra Cellular Matrix; **iPSCs:** Induce Pluripotent Stem Cells

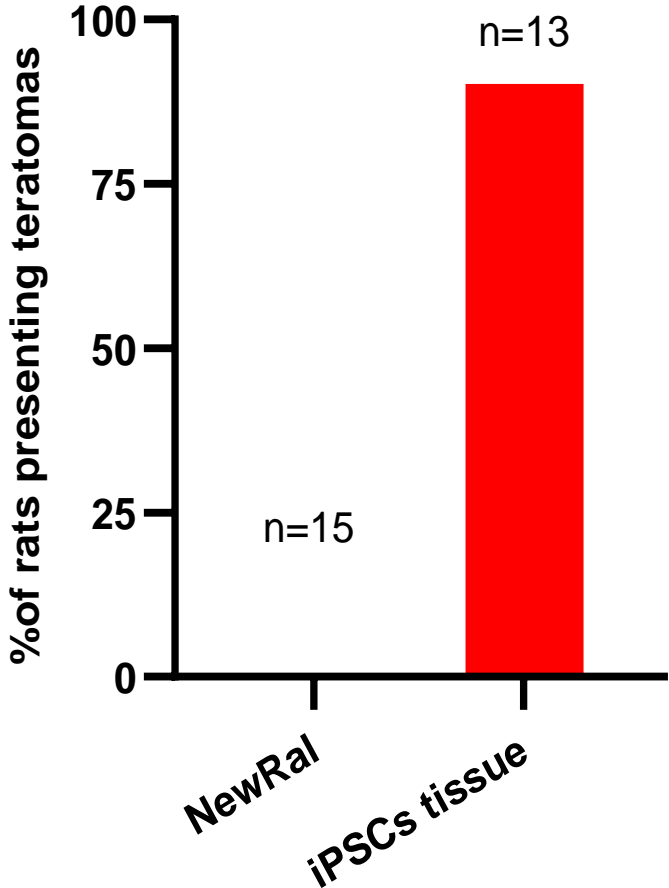
NewRal™ – Safety & Efficacy

Pilot **efficacy** study (interim results)
Chronic spinal cord injury rat model (T10 contusion)



>70% of injured rats treated with NewRal presented significant **functional improvement**.

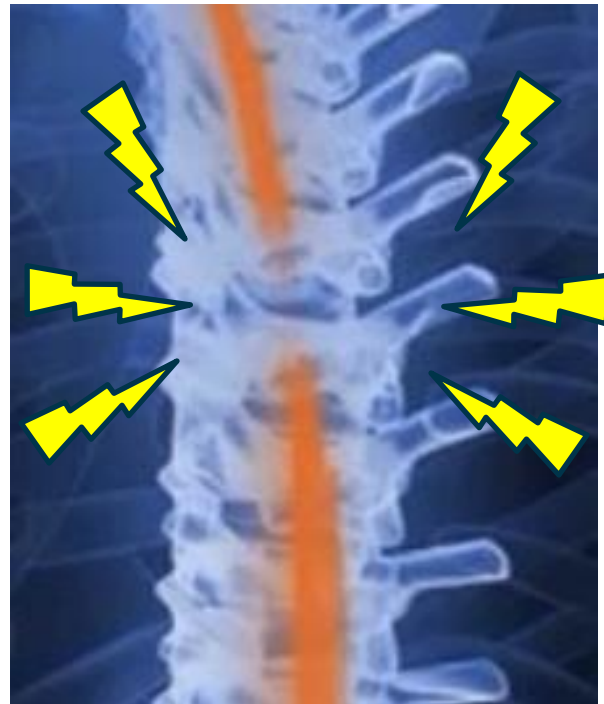
Pilot **safety** study
C4 corticospinal tract transection in nude rat model



None of the NewRal-treated rats had teratomas, NewRal presents **100% safe profile**

NewRal™ – Safe and efficacious in animals

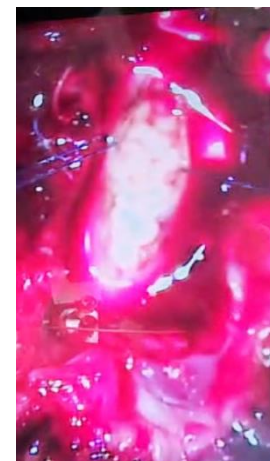
The NewRal Transplant Procedure



Site of spinal cord injury.
Disruption in nerve signal
transmission



Transfer
Pipettes filled
with NewRal
micro-tissues
(MT)



SCI site with
NewRal MTs

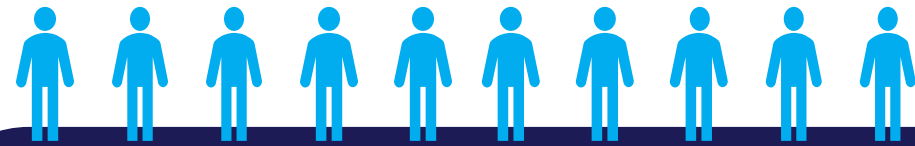


Neural tissue
continuity

The procedure will be performed by Neurosurgeons using standard surgical procedures and tools

The patient will undergo standard rehabilitation program

Market Size & Business Model



Serviceable Available Market (SAM)

~10,000
patients/year

Estimated treatment price

~\$1.5M

NewRa1™



Potential market value

\$15B
annually



Matricelf's **business model** is an **end-to-end** product and service

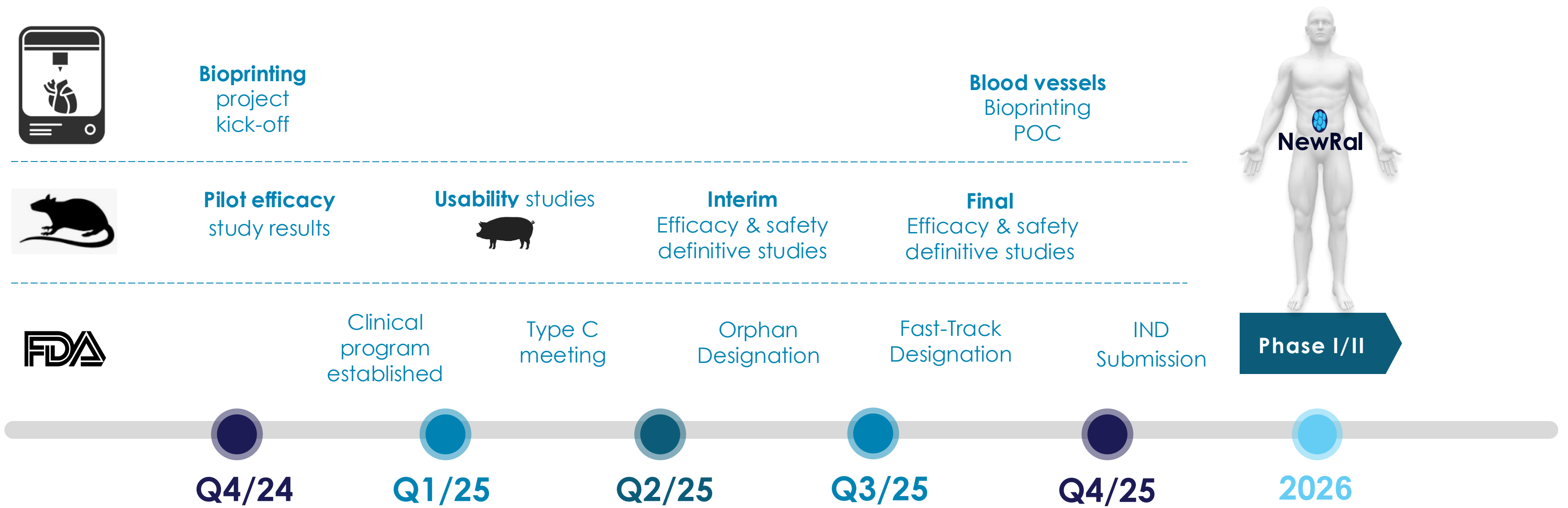


Financing: The path to a clinical stage company

Value creating milestones & potential strategic events

Seeking for \$7m:

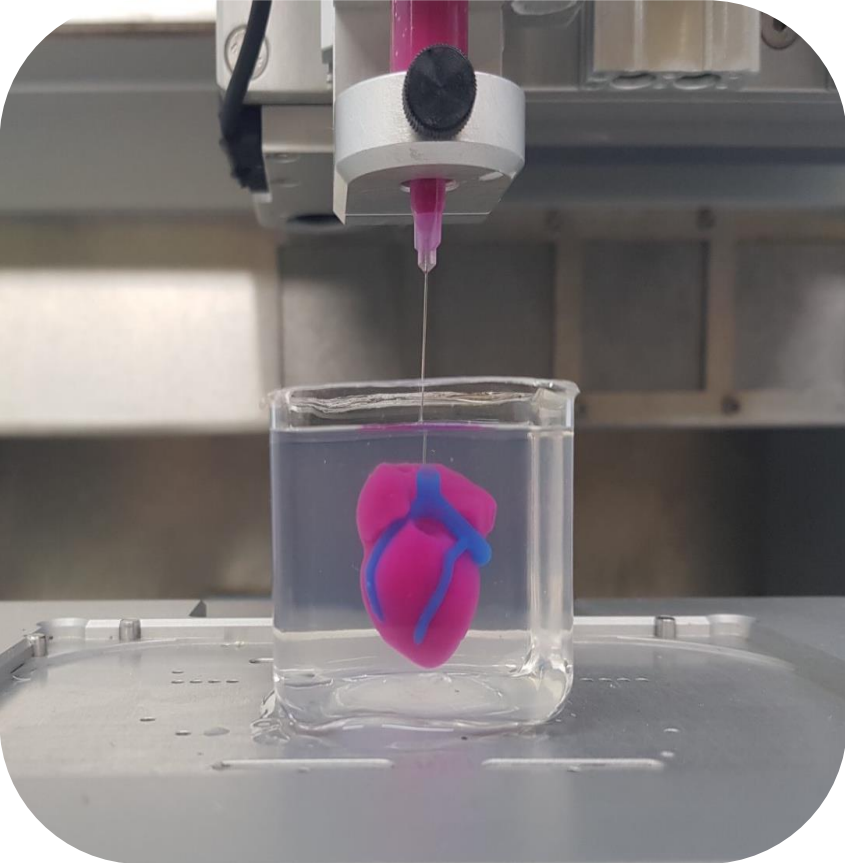
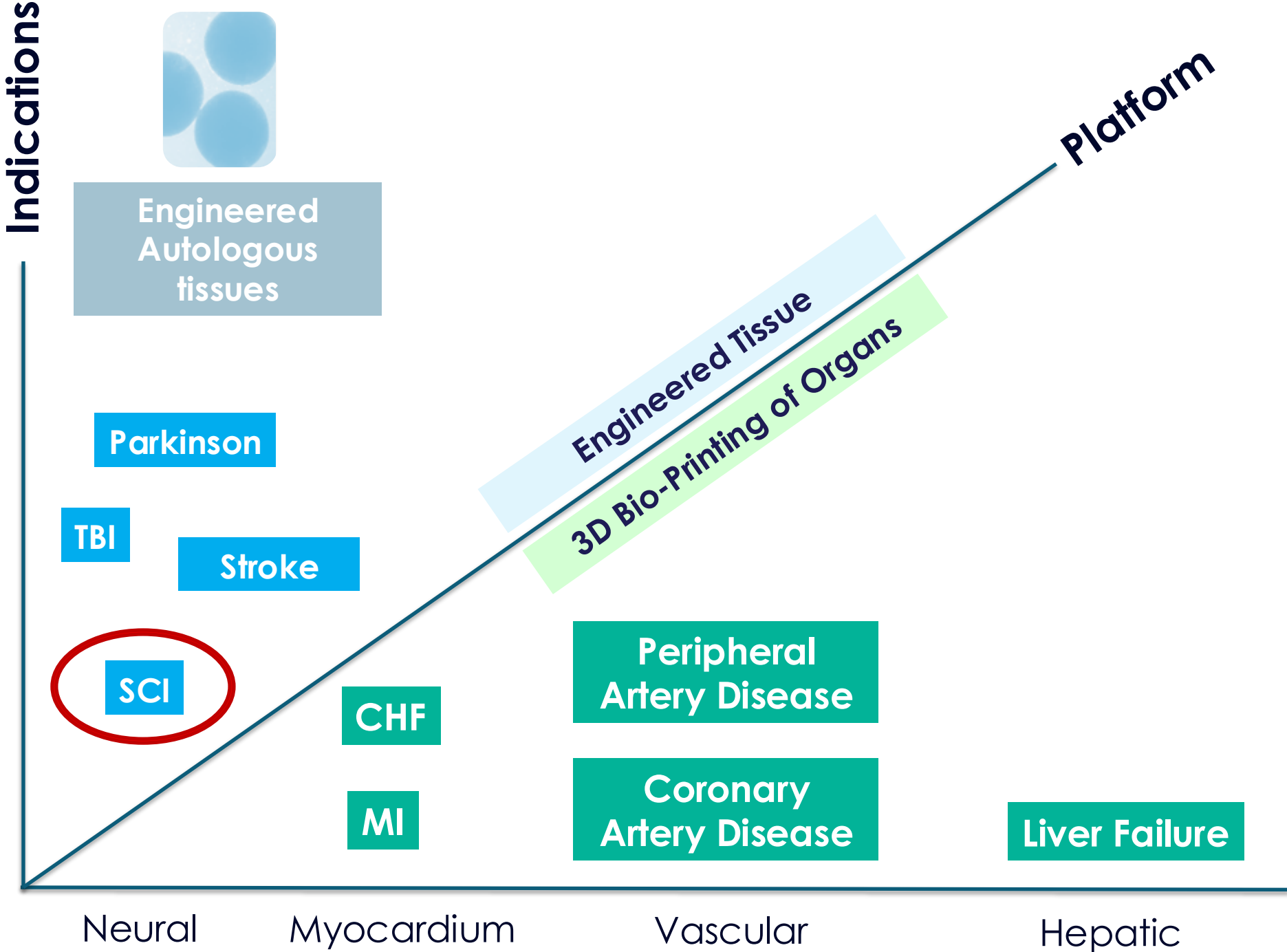
- \$5m for clinical/regulatory development for NewRal FIH
- \$2m for Bio-printing POC's for potential strategic collaborations



* Milestones specify estimated task completion, subject to successful results and financial resources availability

Matricelf – Growth Drivers

- Neurological disorders – Core activity
- 3D bio-printing – Pursuing collaboration with potential strategic partners



Bio-printed heart
The 1st human heart printed

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**

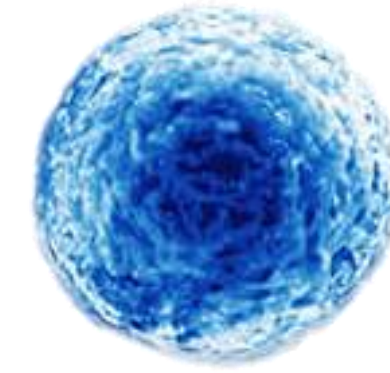


DORON BIRGER
Chairman
Given Imaging
(**Medtronic**); Elron



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

Scientific Advisory Board



ECKHARD VON KEUTZ,
PhD, Germany
Former senior VP and
head of translational
sciences at Bayer
Pharmaceuticals



BROCK REEVE,
Mphil, USA
Former Executive
Director of the
Harvard Stem Cell
Institute



ADAM WOLLOWICK,
MD, USA
Orthopedic surgeon;
senior director of
business
development at
Stryker Spine



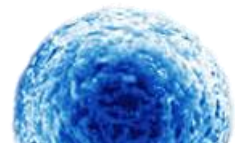
RUCHI SHARMA,
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Scientist and stem
cell expert at the
Ophthalmic
Genetics and
Visual Function
Branch, at NIH



NICHOLAS THEODORE,
MD, USA
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neurosurgery and the
director of the Johns
Hopkins Neurosurgical
Spine Center

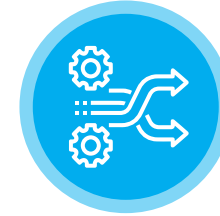


MARK TUSZYNSKI,
MD PhD, USA
Director of the
Center for Neural
Repair, University
of California, San
Diego



Why Matricelf?

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



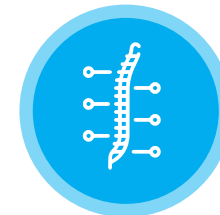
Game-changing platforms

for the generation of **autologous**, complex and volumetric 3D tissues and organs



Life-changing solutions

for large patient groups worldwide



Significant market potential

Initial therapeutic target group - paralyzed patients with irreversible **spinal cord injury**



Value creation events in the short run

Interim readouts during **clinical development** could provide significant value inflection points or generate strategic events utilizing **bioprinting technology**



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Thank you

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