

An abstract graphic of a human brain in profile, facing right. The brain is composed of various shades of green and white, with a low-poly, geometric structure. It is surrounded by numerous small, dark green dots and larger, lighter green circles, creating a sense of neural activity or data points. The background is a light cream color with a subtle pattern of small green dots.

# Enabling the Nervous System to Repair Itself

CORPORATE PRESENTATION

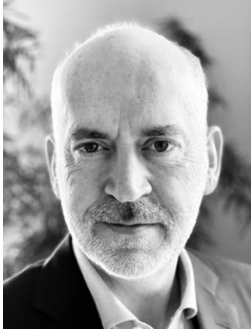
July 28, 2022

# Financial Disclosure Statement

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Forward-looking statements: Certain statements in this document about the Company's current and future plans, expectations and intentions, results, levels of activity, performance, goals or achievements, or any other future events or developments constitute forward-looking statements, including, without limitation, statements regarding the advancement of NVG-291 in clinical development, the timing of human trials and regulatory approval, the potential efficacy of the Company's products and technology, and the potential to identify, evaluate and develop other drug candidates. The words "may", "will", "would", "should", "could", "expect", "plan", "intend", "trend", "indication", "anticipate", "believe", "estimate", "predict", "likely" or "potential", or the negative or other variations of these words or other comparable words or phrases, are intended to identify forward-looking statements. Forward-looking statements are based on estimates and assumptions made by the Company in light of management's experience and perception of historical trends, current conditions and expected future developments, as well as other factors that the Company believes are appropriate and reasonable in the circumstances. Many factors could cause the Company's actual results, level of activity, performance or achievements or future events or developments to differ materially from those expressed or implied by the forward-looking statements, including those described in the "Risk Factors" section of the Company's Annual Information Form, Prospectus Supplement, financial statements and Management Discussion and Analysis which can be found on SEDAR.com. All clinical development plans are subject to additional funding. Readers should not place undue reliance on forward-looking statements made in this document. Furthermore, unless otherwise stated, the forward-looking statements contained in this document are made as of the date of this document, and the Company has no intention and undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. The forward-looking statements contained in this document are expressly qualified by this cautionary statement.

# NervGen's Clinical Trials are Led by Experienced Drug Developers



**Paul Brennan**  
President & CEO

- 30+ years of biotech and pharma commercial and development experience
- Participated in the commercial or regulatory development of >10 products now EMA or FDA approved including budesonide (Pulmicort), esomeprazole (Nexium), budesonide/formoterol (Symbicort) and plerixafor (Mozobil)
- \$3+ billion in M&A, licensing and corporate restructuring transactions



**Dr. Dan Mikol, MD, PhD**  
Chief Medical Officer

- 25+ years pharma experience and as practicing neurologist conducting clinical research
- Joined NervGen from Amgen where he was Executive Director and Global Therapeutic Development Head, Neurology and Nephrology
- Participated in development and/or commercialization of natalizumab (Tysabri), fingolimod (Gilenya), cladribine (Mavenclad), interferon- $\beta$ -1a and erenumab (Aimovig)

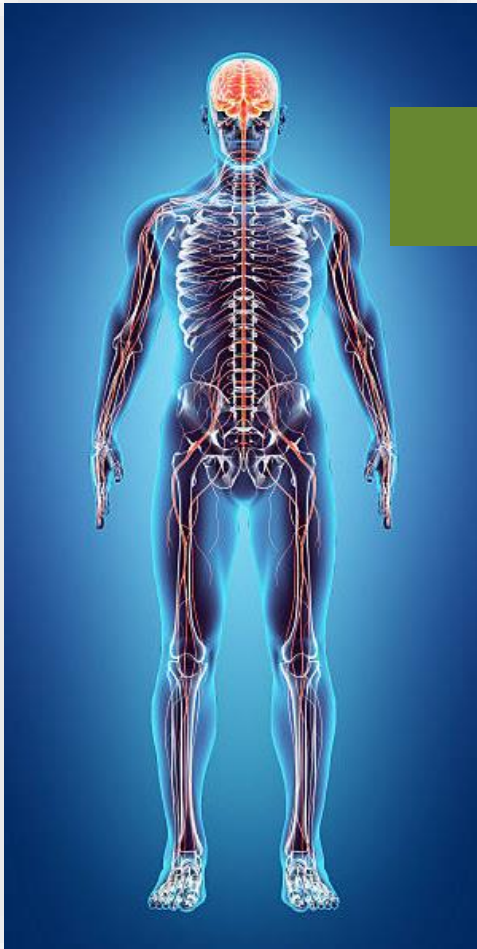


# NVG-291: A Pipeline in a Product

INDICATION	STAGE OF DEVELOPMENT			ESTIMATED COST	MARKET OPPORTUNITY
	Phase 1	Phase 1b/2 Initiation	Phase 1b/2 Readout		
Alzheimer's Disease		Q4 2022	2024	\$20 M	<ul style="list-style-type: none"> <li>~6,000,000 patients in the US</li> <li>US Market potential of over \$300 billion</li> <li>Substantial pharma deal dynamics</li> </ul>
Spinal Cord Injury		Q4 2022	2023	\$10 M	<ul style="list-style-type: none"> <li>~18,000 new patients per year in the US</li> <li>~300,000 chronic patients</li> <li>Lifetime costs range from \$1 to &gt;\$5 million</li> </ul>
Multiple Sclerosis		Q1 2023	2024	\$20 M	<ul style="list-style-type: none"> <li>~900,000 patients in the US</li> <li>US Market potential of over \$30 billion</li> <li>Currently there are multiple blockbusters</li> </ul>

Proof of concept readouts for all three indications expected in 18-24 months

# Revolutionizing the Treatment of Nervous System Damage

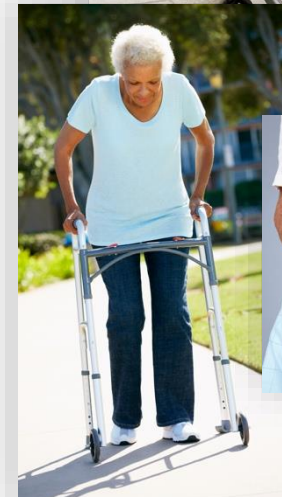


Everyone **KNOWS**...

The nervous system is a **complex system** that controls thought, movement, senses, etc.

Everyone **BELIEVES**...

The nervous system **cannot** repair itself

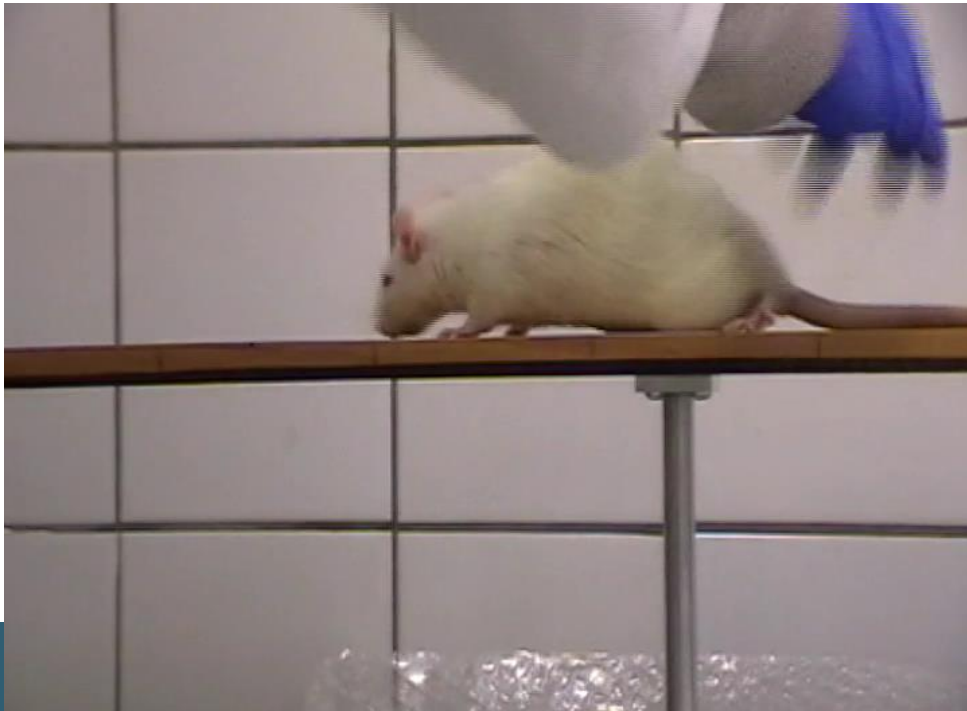




# NVG-291 – First-in-Class *Neuroreparative* Drug

## Representative of Placebo Group

(Back Legs and Tail Dragging)



## Representative of NVG-291 Group

(Back Legs and Tail Active)



Remarkable and robust repair across multiple models

# NervGen's Technology Was Invented by Dr. Jerry Silver

*Known in the Spinal Cord Injury Field as the "Oracle"*



**Jerry Silver, PhD**

Professor and Researcher,



Adjunct Professor,



## Dr. Silver's Spinal Cord Research

- Discovered why the nervous system does not repair itself
- Identified the surprising molecules responsible

## Dr. Silver Has Received Numerous Prestigious Awards Including

- Ameritec Prize
- Christopher Reeve-Joan Irvine Research Medal
- Jacob Javits Neuroscience Investigator Award

Dr. Silver's research revolutionized the understanding of the nervous system

## STRONG IP PORTFOLIO

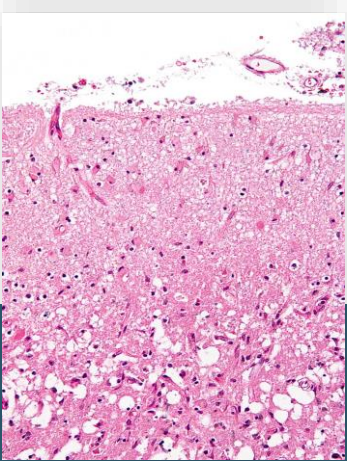
NervGen licensed the technology from Case Western and **owns global rights for all indications**

Intellectual property protection on NVG-291 until 2037

# The Evolution of Our Proprietary Science

## Pre 1990

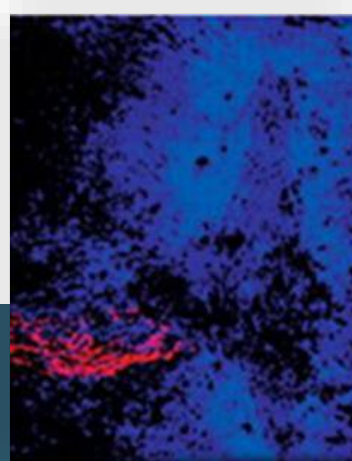
It was demonstrated that **glial scars** form at the site of injury to the nervous system and that scars in the brain cause neurons to be dysfunctional. Scars were later identified as the primary impediment of recovery



Micrograph of a glial scar

## 1990s

Dr. Silver identified a class of molecules called **CSPGs**, present in scars in the brain and spinal cord, that stop the body's natural repair mechanisms



Spinal cord nerve (red) trapped in the scar by CSPGs (blue)<sup>1</sup>

## 2009

Dr. Silver and collaborators from Harvard co-discovered that CSPGs bind with a receptor (**PTP $\sigma$** ) present in the brain and spinal cord and that this interaction stops cells from repairing damage



## 2015

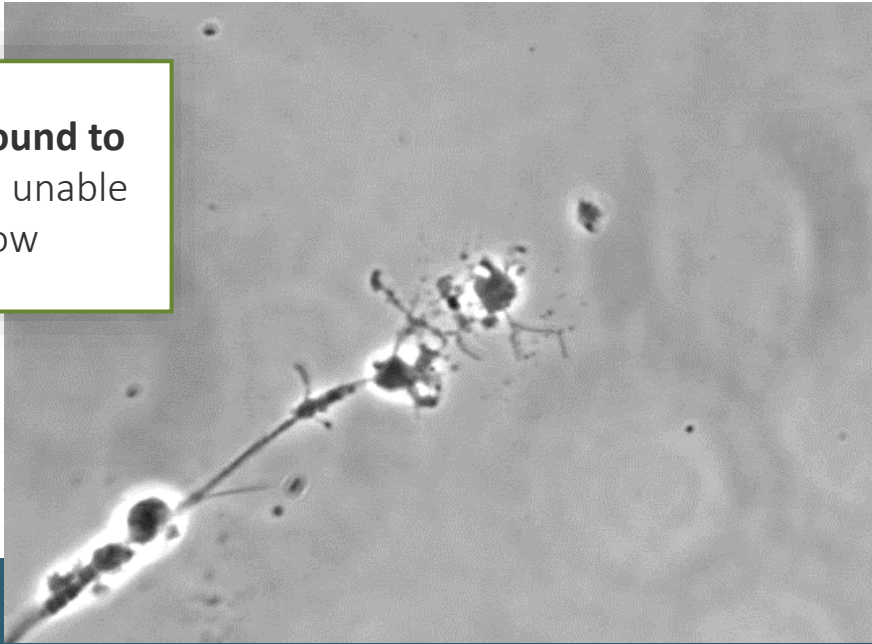
Dr. Silver's team then identified **NVG-291**, a drug that targets the interaction between CSPGs and PTP $\sigma$  and allows the nervous system to repair damage



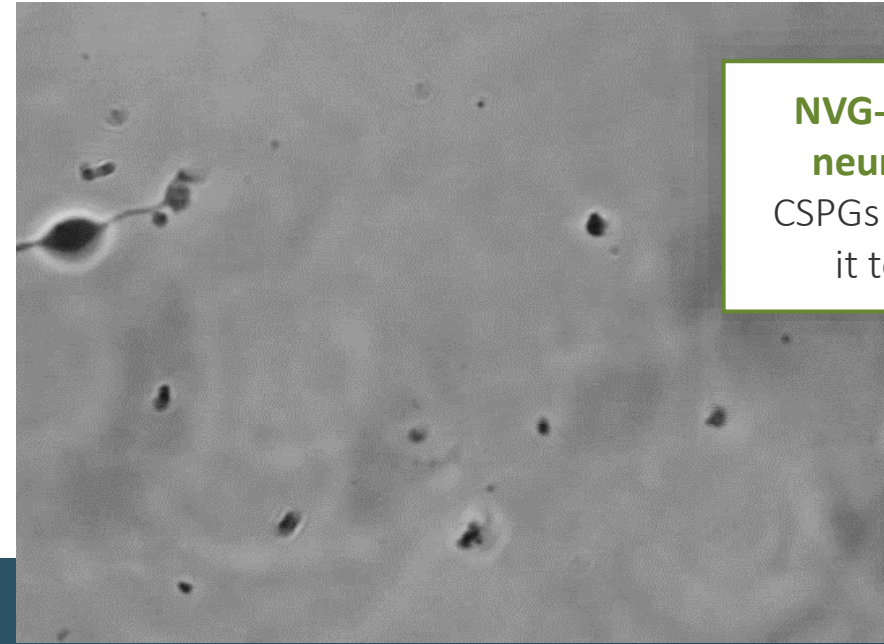


# NVG-291 Allows Neurons to Grow in the Scar

**Neuron bound to CSPGs** and unable to grow



**NVG-291 frees neuron** from CSPGs and allows it to grow

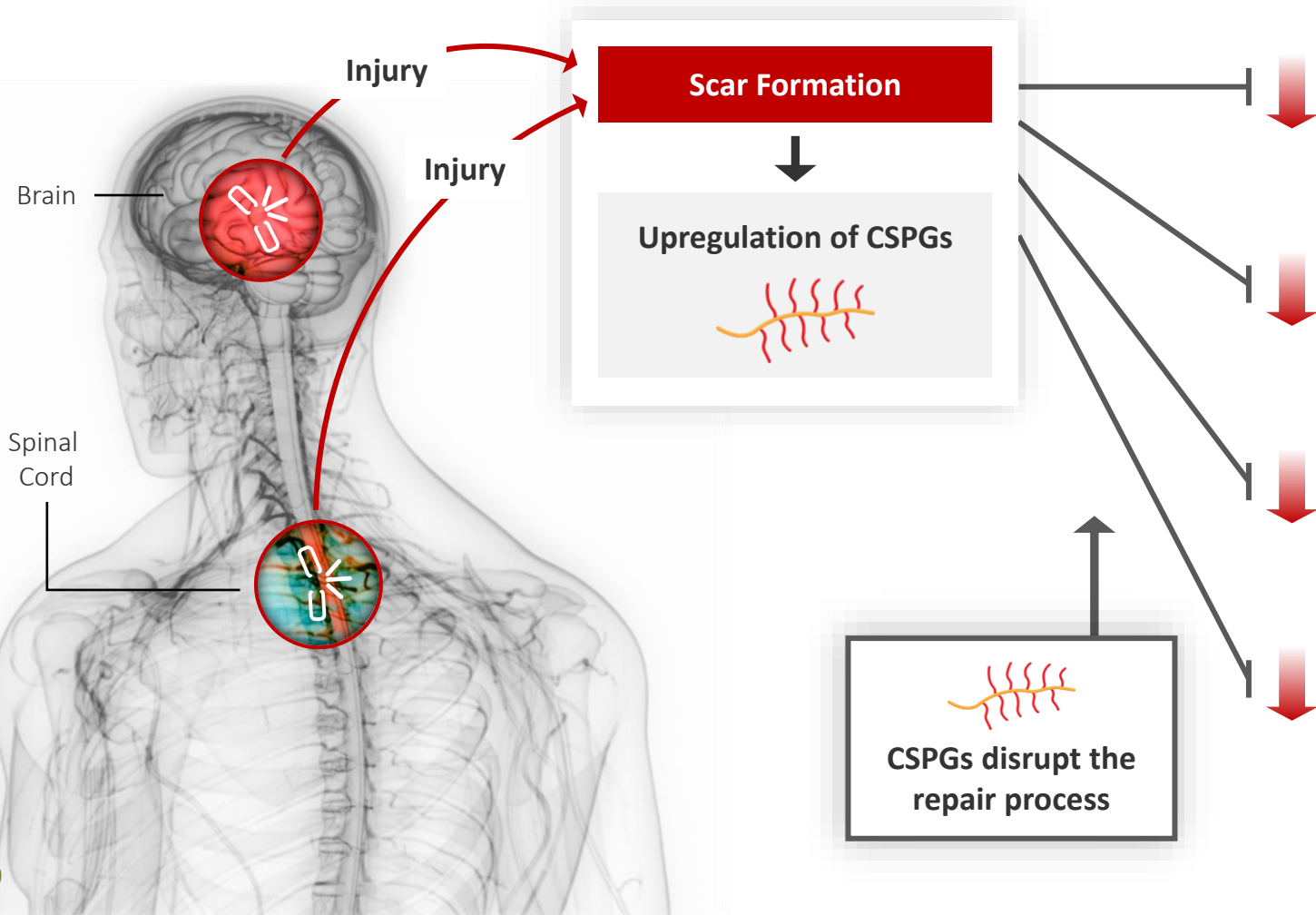


**NVG-291, a 35 amino acid peptide, produced dramatic recovery in a spinal cord injury animal study:**  
the results published in Nature<sup>1</sup> are now cited in over 327 publications

Administered systemically by a  
**daily subcutaneous injection**

Includes a transporter that  
**facilitates crossing the blood brain barrier**

# The Body's Powerful Innate Repair Mechanisms *Disrupted by CSPGs*



## Repair Mechanisms:



### Plasticity

The creation of new neuronal connections and rewiring of existing ones



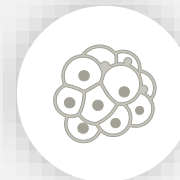
### Axonal Regeneration

The ability of a severed axon to reestablish connectivity with other neurons



### Remyelination

The process of repairing damaged myelin – the fatty substance that protects axons and enables fast electrochemical transmission

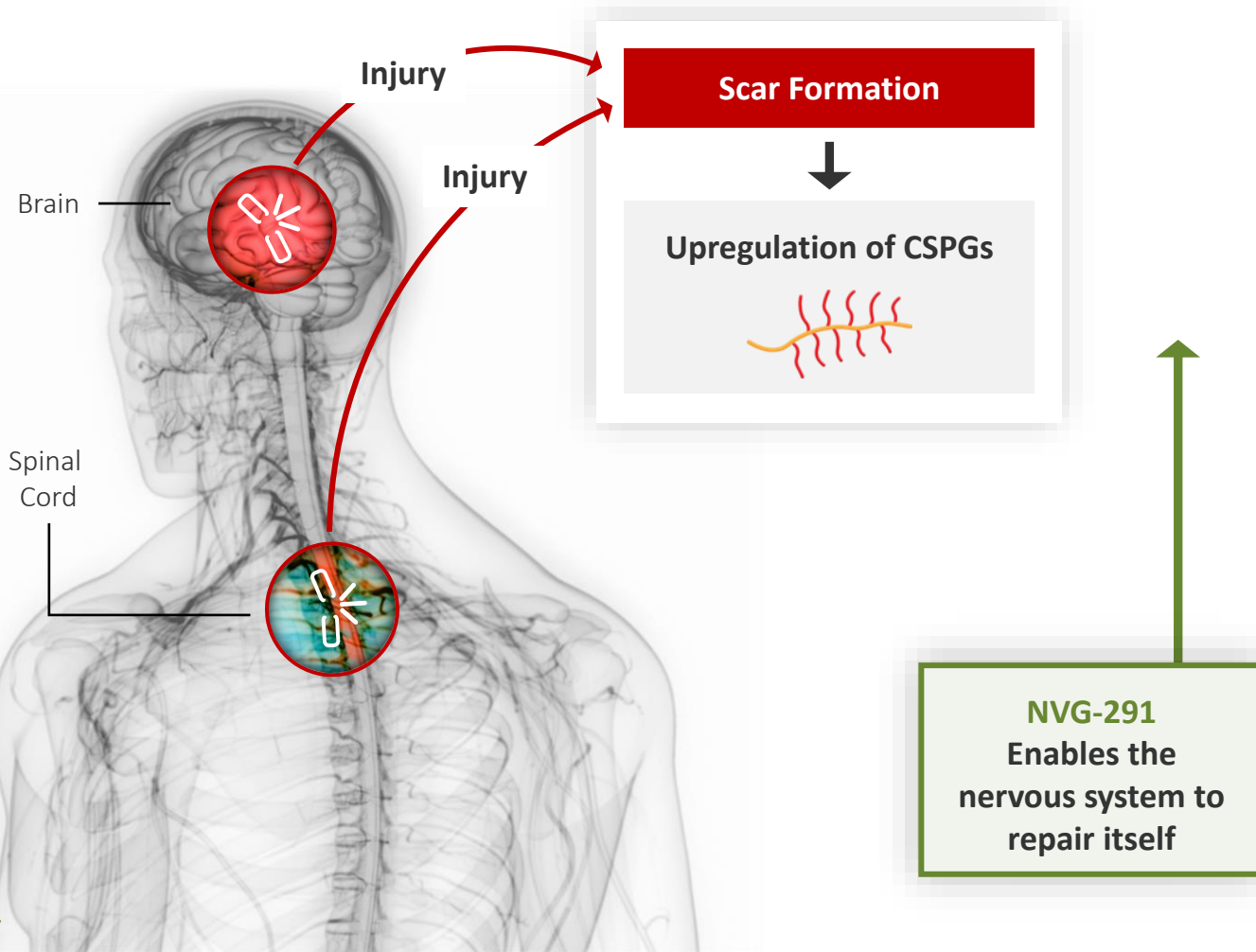


### Others

Stem cell preservation/migration  
Autophagy  
Microglial shifting

# NVG-291

## Takes the Brakes off Natural Repair Mechanisms



## Repair Mechanisms:



### Plasticity

The creation of new neuronal connections and rewiring of existing ones



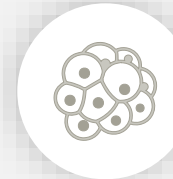
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### Others

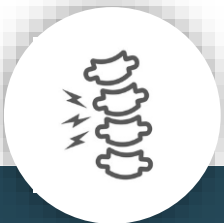
Stem cell preservation/migration  
Autophagy  
Microglial shifting

# NVG-291 Broadly Restores Function

## NVG-291 Has Demonstrated Dramatic Repair

in multiple animal models of neurological injury/disease, as documented in 15+ peer-reviewed papers

### ACUTE SPINAL CORD INJURY



- Motor
- Sensory
- Bladder

1. Lang, B.T. et al., Nature, 518, 404–408. (2015).
2. Rink, S. et al., Experimental Neurology, 309, 148–159. (2018).
3. Ham, T.R. et al., Ann Biomed Eng, 47, 744–753. (2019).
4. Ham, T.R. et al., Materials Science and Engineering: C, 110, 110656. (2020).

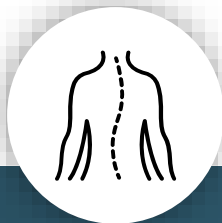
### PERIPHERAL NERVE INJURY



- Motor
- Sensory

1. Li, H. et al., Scientific Reports, 5, 1–14. (2015).
2. Yao, M. et al., Neuropharmacology, 144, 208–218. (2019).

### MULTIPLE SCLEROSIS



- Motor

1. Luo, F. et al., Nature Communications, 9, 1–16. (2018).

### OPTIC NEURITIS



- Visual

1. Niknam, P. et al., Molecular and Cellular Neuroscience, 99, 103391. (2019).

### STROKE



- Motor
- Sensory
- Cognition (object recognition)

1. Luo et al., Cell Reports Volume 40, Issue 4, 111137, 2022

# NVG-291: Potential to Treat All Types of Nervous System Damage

## TRAUMA

Acute Spinal Cord Injury

Chronic Spinal Cord Injury

Traumatic Brain Injury

NVG-291

## DISEASE

Multiple Sclerosis

Alzheimer's Disease

Stroke

ALS

Frontotemporal Dementia

Parkinson's Disease



NervGen  
Priorities



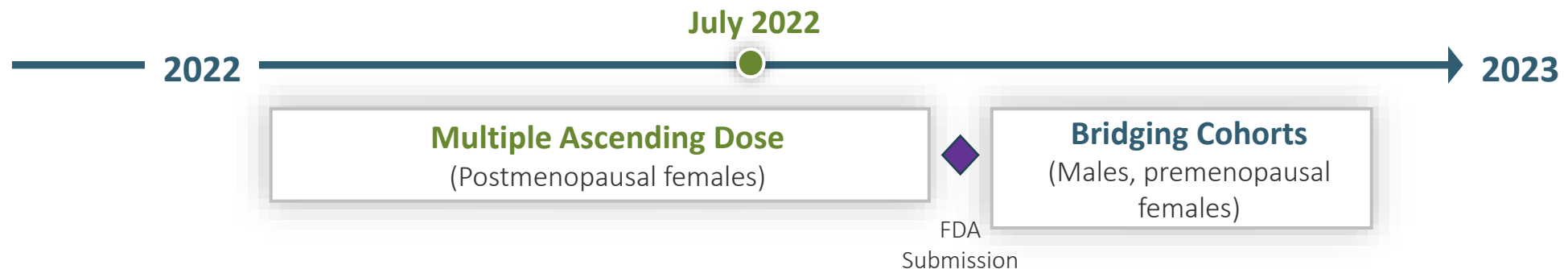
# NVG-291 - Phase 1 Clinical Trial in Progress

## Single Ascending Dose (SAD) – *COMPLETED*

- NVG-291 was well tolerated at a high dose
  - 170% higher than the equivalent highest dose in preclinical efficacy studies
  - >100x higher than the lowest efficacious dose in studies
- NVG-291 was rapidly distributed in the blood
- The calculated half-life was longer in humans than animals

## Multiple Ascending Dose (MAD) – *IN PROGRESS*

- Subjects are dosed once a day for 14 days
- Currently conducting the final cohort
- Dose in second dose cohort was well tolerated and 80% higher than the equivalent highest dose seen in preclinical efficacy studies



Our Phase 1 trial establishes the dose and safety profile necessary for starting all three of our Phase 1b/2 trials



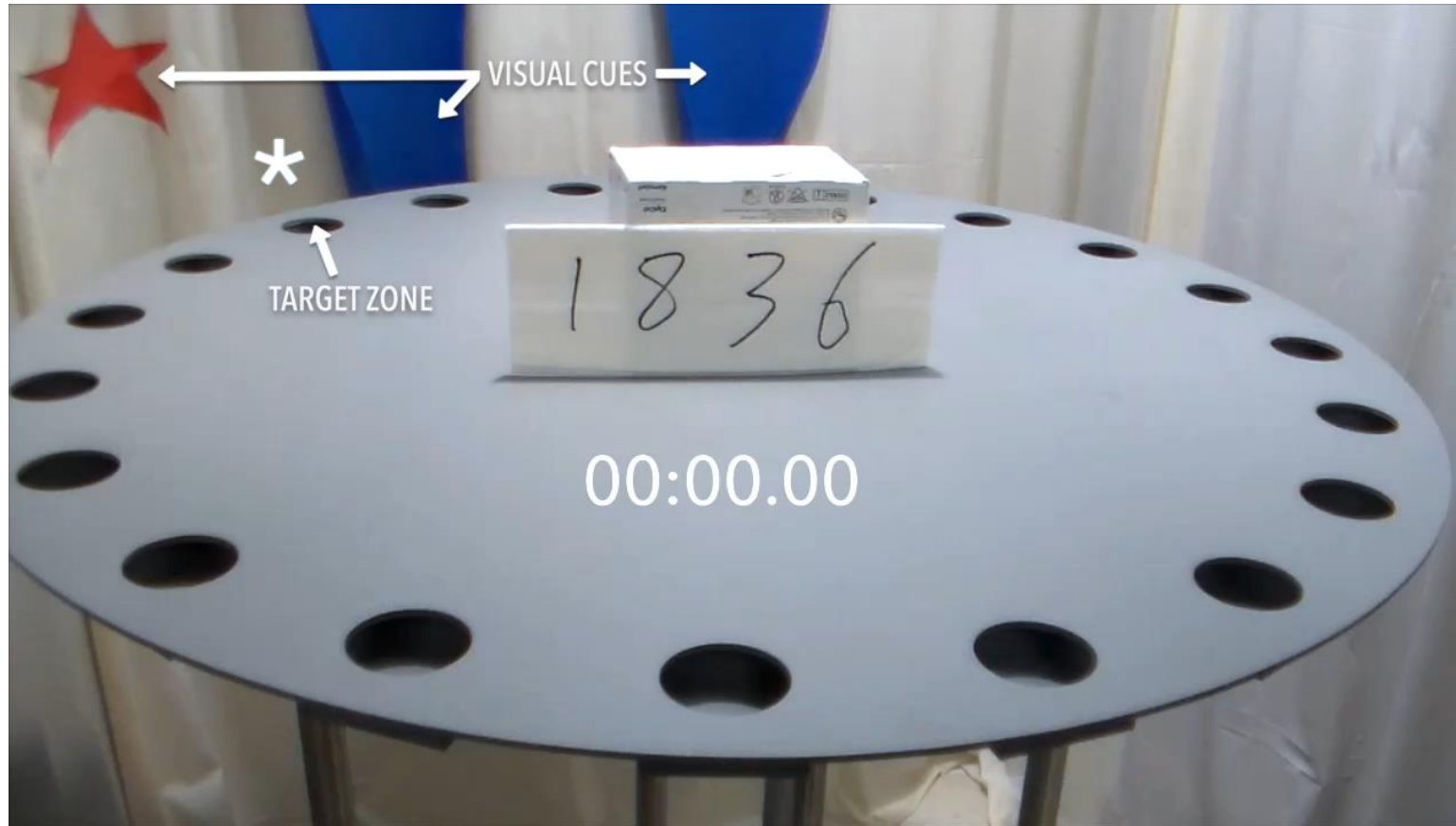
## Alzheimer's Disease

No FDA Approved Drug that Results in Sustained Improvement in Cognitive Function

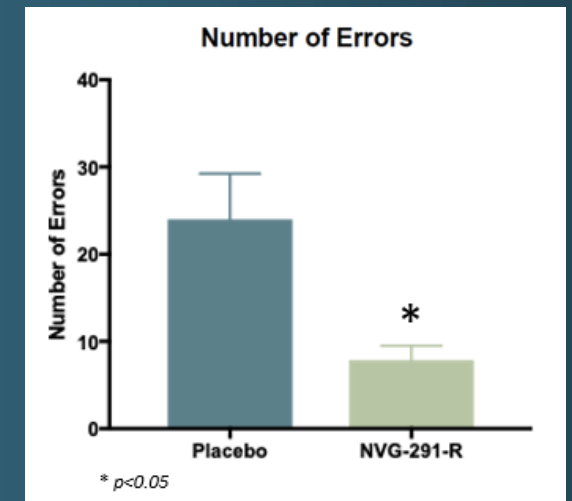
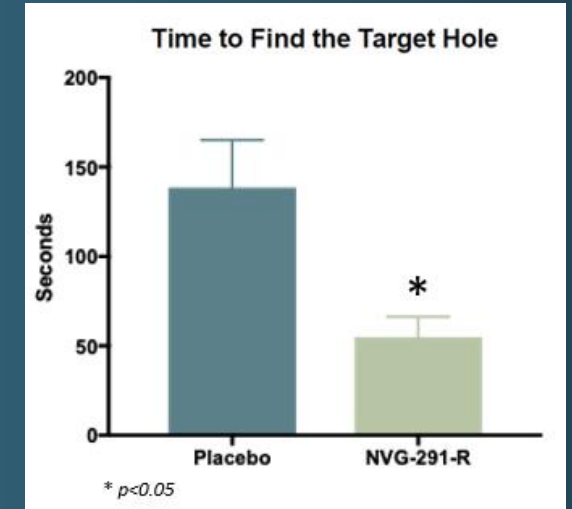
- Symptomatic treatments to improve cognition in Alzheimer's disease are unsatisfactory
- A disease-modifying therapy approved in 2021 has questionable benefit in slowing cognitive decline
- NervGen's goal is to repair damage and improve cognitive function

# NVG-291-R – Improves Memory and Spatial Learning

## STROKE MODEL



Significant improvement in cognitive function when  
treated 24 hours - and even *7 days*

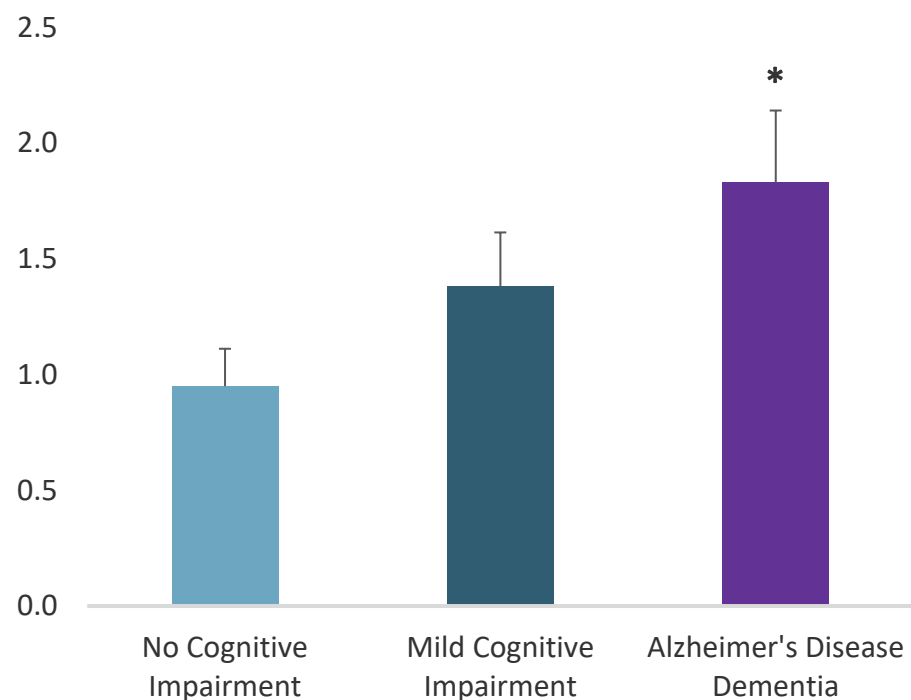


Barnes Maze Test  
treatment beginning  
**7 days post stroke**

# NVG-291 Pathway to Treat Alzheimer's Disease

## CSPG ACCUMULATION IN AD PATIENT BRAINS<sup>1</sup>

(CSPGs) Brevican/GAPDH



\* p<0.05 compared to NCI

<sup>1</sup> Howell, M.D. et al., Acta Neuropathol Commun, 3, 54. (2015). <sup>2</sup> Yang et al., Experimental Neurology (2015).

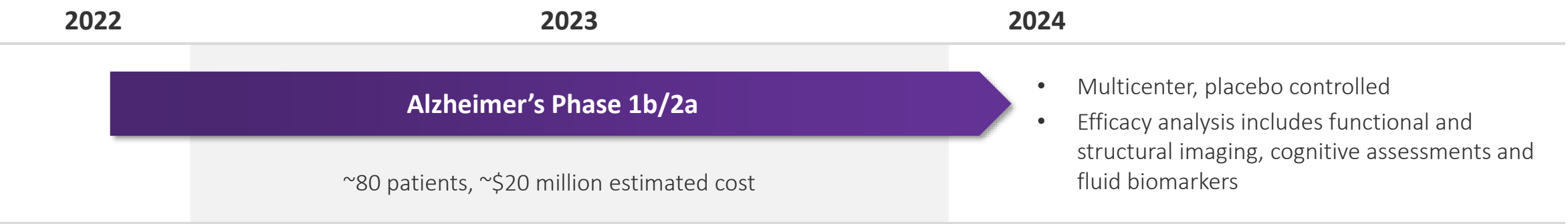
<sup>3</sup> Vegh et al., Acta Neuropathologica Communications (2014). <sup>4</sup> Gu et al., BioRxiv (2016)

Preclinical studies have demonstrated that breaking down CSPGs **improves Alzheimer's symptoms**<sup>2,3</sup>

Removing PTP $\sigma$  **improves cognitive function** in Alzheimer's models<sup>4</sup>

NVG-291's multiple modes of action, **plasticity, axonal regeneration and remyelination** have the potential to benefit patients suffering from Alzheimer's

# NVG-291 Safety/Efficacy Studies in Alzheimer's Disease Patients



## World-class Advisory Board with experts in research, clinical design, cognitive assessments and biomarkers

<b>Jeffrey Cummings, MD, ScD</b> University of Nevada	Originator, Neuropsychiatric Inventory (NPI)
<b>Martin Farlow, MD</b> Indiana University School of Medicine	Led/contributed to >230 clinical trials; authored 493 peer reviewed research papers and 509 abstracts
<b>Bruce Lamb, PhD</b> Indiana University School of Medicine	World-expert on biological underpinnings of Alzheimer's disease and related dementia
<b>George Perry, PhD</b> University of Texas, San Antonio	Current and founding Editor-in-Chief of the Journal of Alzheimer's Disease

<b>Reisa Sperling, MD</b> Harvard Medical School; Massachusetts General Hospital	Led NIA-Alzheimer's Assoc. guideline development group; Serves on National Institute on Aging Advisory Council
<b>Michael Weiner, MD</b> University of California, San Francisco	Leader in development of MRI and PET for investigating and diagnosing neurodegenerative diseases
<b>Henrik Zetterberg, MD, PhD</b> University of Gothenburg, University College London	World expert in blood-based biomarkers in neurological disorder



A man with a beard and a bun, wearing a white t-shirt and grey pants, is sitting in a wheelchair. He is looking out a large window with a diagonal metal beam. The room has a light-colored floor and walls.

## Spinal Cord Injury

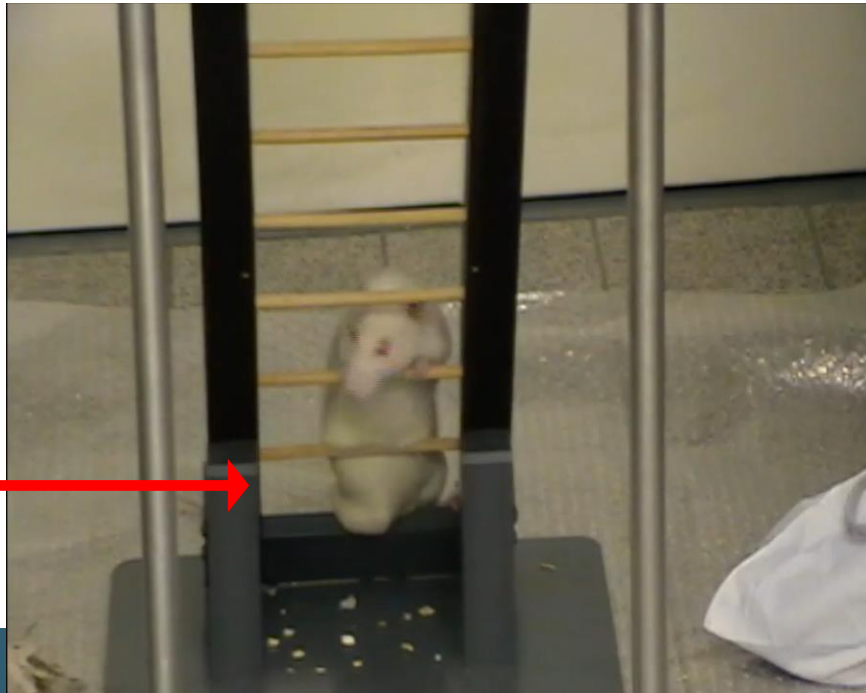
No FDA Approved Drug that Improves Function

- NervGen's goal is to improve motor, bladder/bowel/sexual and/or sensory function

# NVG-291 – Dramatically Repairs Spinal Cord Injury

## SEVERE SPINAL CORD INJURY MODEL

### Representative of Placebo Group



Hind legs are immobile

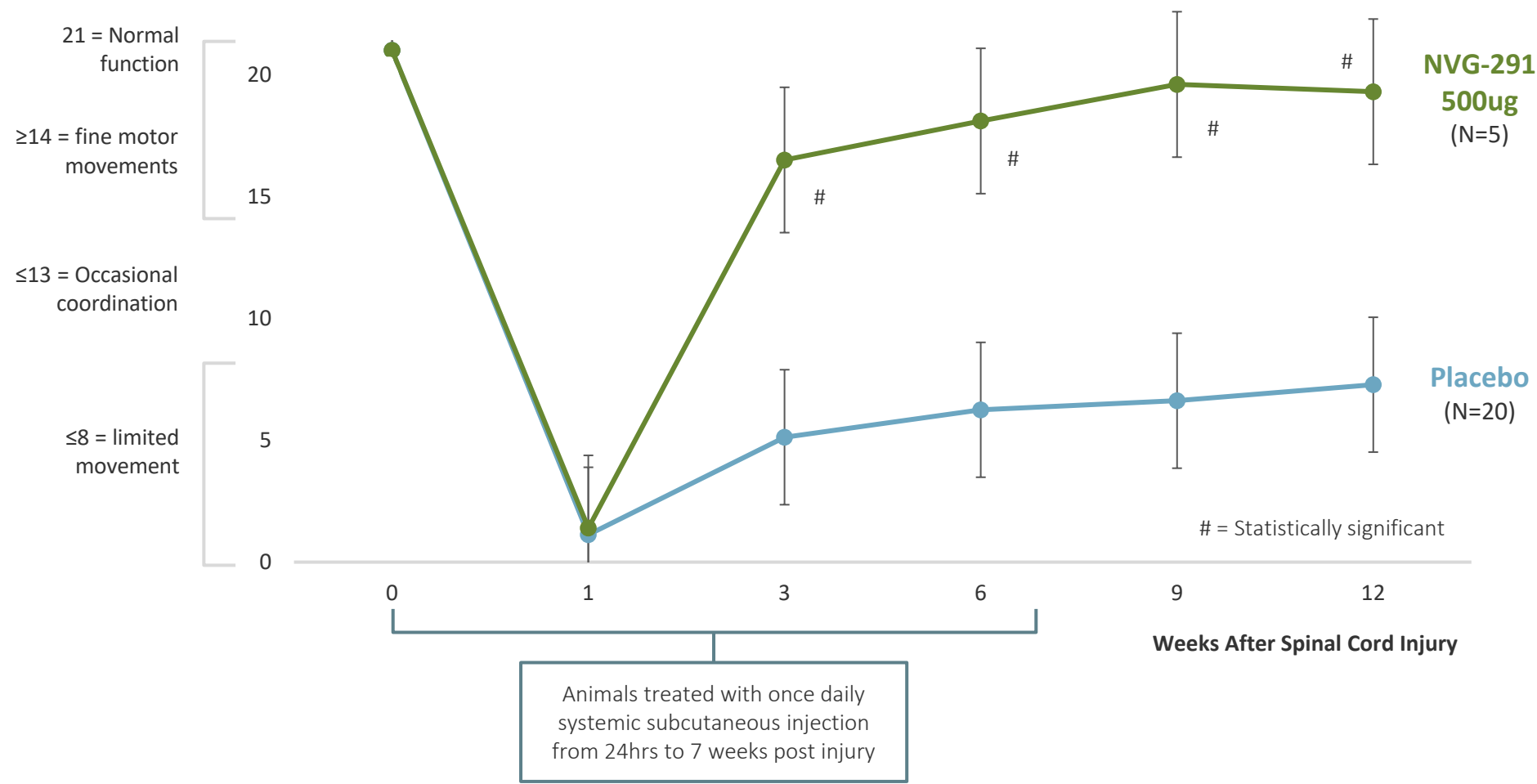
### Representative of NVG-291 Group



Significant motor recovery: consistent coordination, toe clearance, tail held high consistently

# Spinal Cord Injury – NVG-291 Promotes Functional Recovery

BBB Scale = Standard measure of mobility

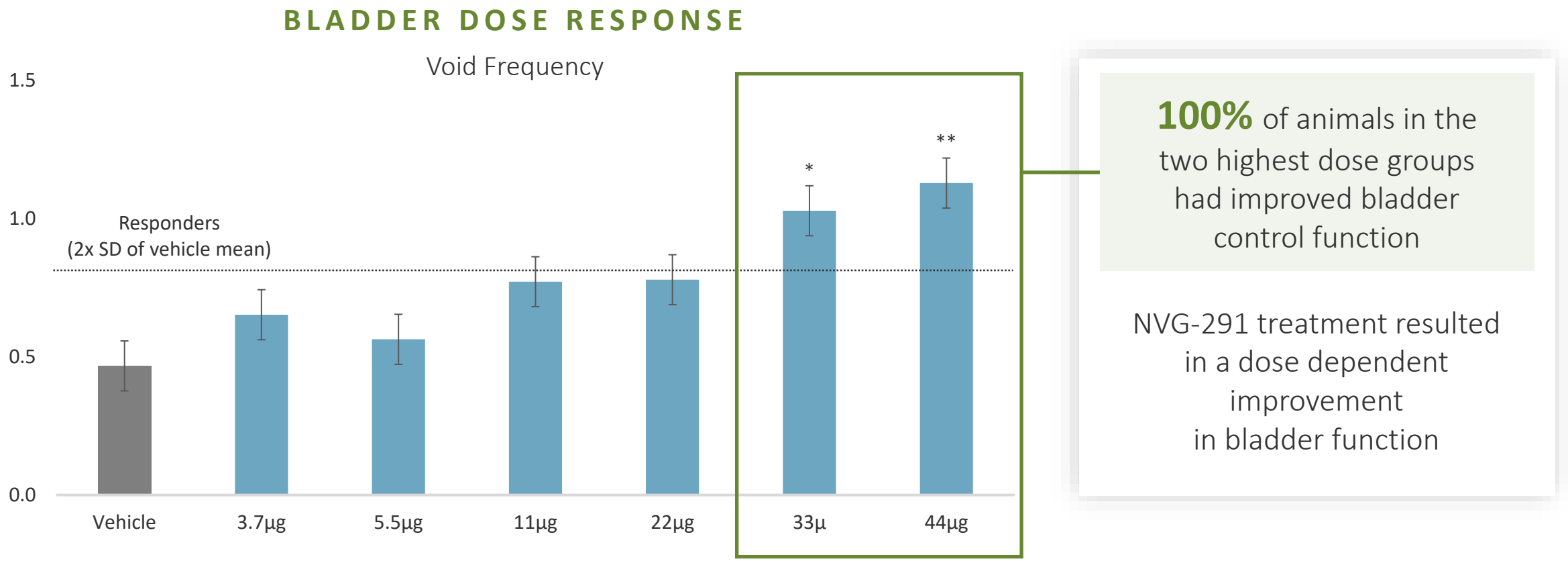


**UNPRECEDENTED RESULTS**

**Extremely high response rate**  
**50%**

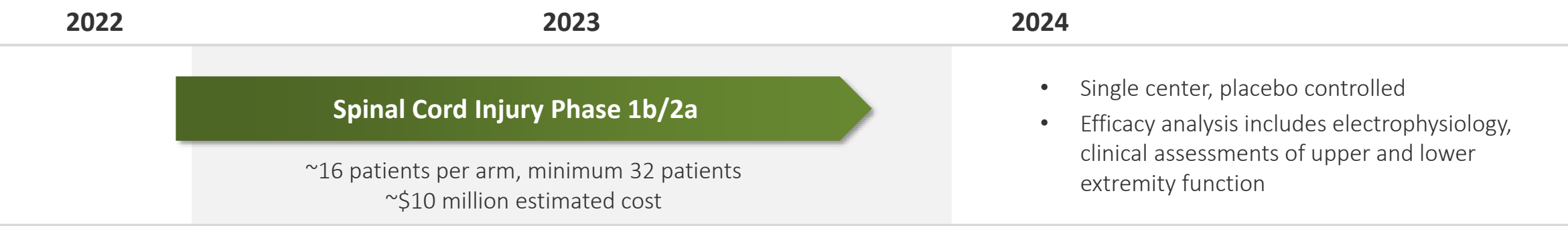
Almost **complete recovery** in responding animals

# NVG-291 Improves Bladder Function



Bladder function is a key quality of life measure in the paralyzed population

# NVG-291 Safety/Efficacy Studies in Spinal Cord Injury Patients



## World-class Advisory Board with experts in research, clinical design, functional assessments and biomarkers

<b>James Guest</b> MD, PhD, FACS University of Miami	World renowned surgeon/scientist; global expertise in clinical trial methodology	<b>Brian Kwon</b> MD, PhD, FRCSC University of British Columbia	World renowned surgeon/scientist; authored >240 scientific publications, >35 textbook chapters
<b>Linda Jones, PT, PhD</b> Thomas Jefferson University	Expert consultant to pharma, universities, and non-profit organizations	<b>Daniel Lammertse, MD</b> University of Colorado School of Medicine	Former Director and President of the American Spinal Injury Association
<b>Steven Kirshblum</b> MD Rutgers New Jersey Medical	Nationally recognized expert; Spinal Cord Medicine textbook editor		





## Multiple Sclerosis Repair

### No FDA Approved Drug that Improves Function

- MS is an autoimmune disease where the immune system attacks myelin in the central nervous system, and over time this results in increasing disability
- Approved disease-modifying drugs modulate the immune system, which can reduce relapses and slow disability progression, but **none** repair damage
- **NervGen's goal is to repair/remyelinate the damage from MS, thereby improving function**

# NVG-291 Restores Motor Function in Multiple Sclerosis

## Representative of Placebo Group

Score never improves from 3.5



## Representative of NVG-291 Group

Score improves to 0.5 in 20 days



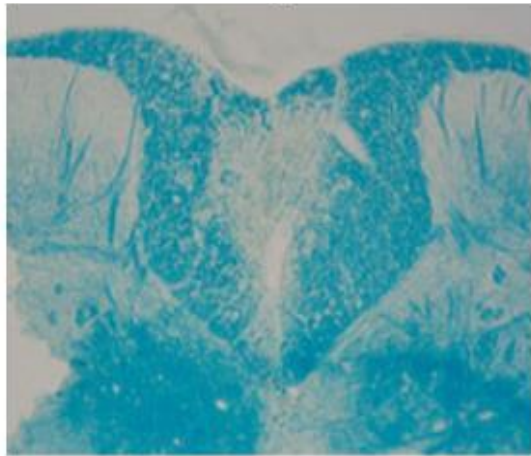
NVG-291 restored motor function in MS model<sup>1</sup>,  
even when administered after symptoms were fully developed

# NVG-291 Remyelinates in Multiple Sclerosis

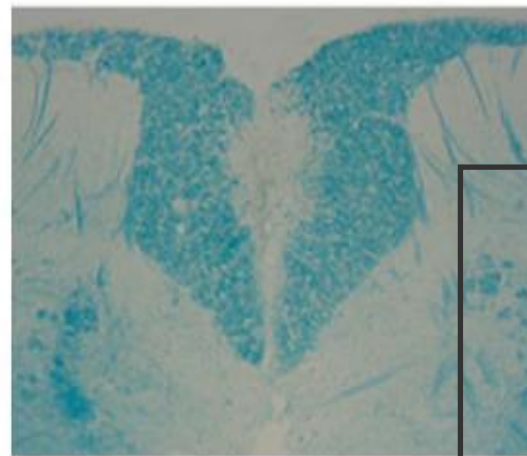
## POSITIVE PRECLINICAL RESULTS<sup>1</sup>

3 days  
post-lesion

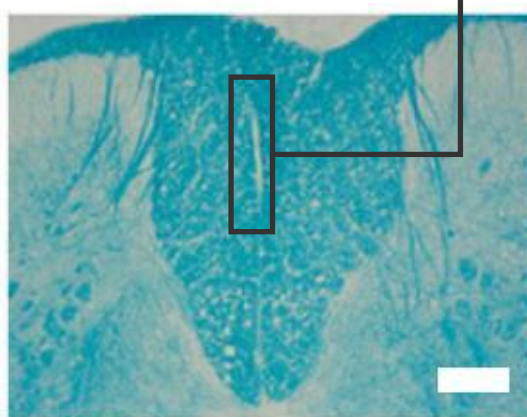
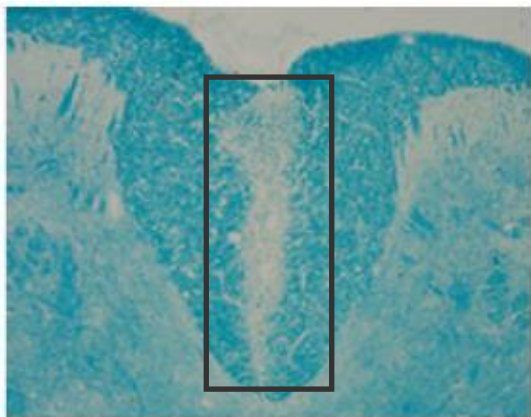
PLACEBO



NVG-291



21 days  
post-lesion



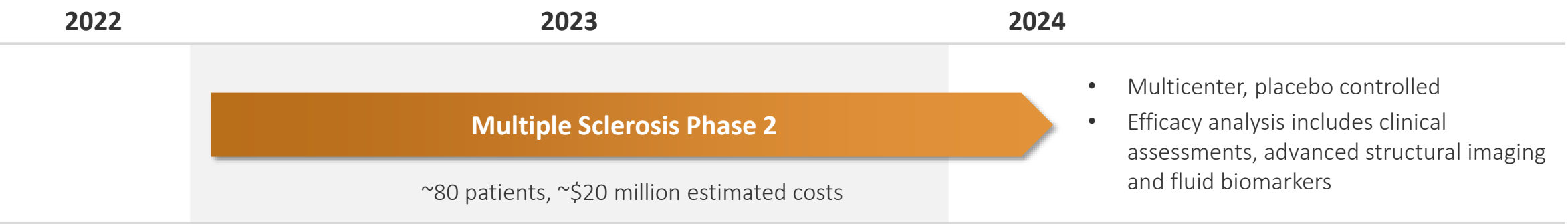
Animals treated with NVG-291 had substantially greater remyelination compared to placebo treated animals after 21 days

Histological evidence showed that the desired types of cells were migrating to the lesion, and that these cells were forming myelin

Increased remyelination was accompanied by improvements in nerve conduction

Lesion size in LPC demyelination model

# NVG-291 Safety/Efficacy Studies in Multiple Sclerosis Patients



## World-class Advisory Board with experts in MS research, clinical design, and functional assessments

<b>Jack Antel, MD</b> McGill University	Ex-Pres., Americas Committee for Treatment and Research in MS; Ex- Pres., International Soc. of Neuroimmunology	<b>Robert Naismith, MD</b> Washington University	Expert in clinical trial design and clinical outcomes measures
<b>Jeremy Chataway, MD</b> University College London	Advanced Clinical trial design expert in MS	<b>Anneke van der Walt, MD, PhD</b> Monash University	Led several international studies on digital biomarkers in MS
<b>Jeffrey Cohen, MD</b> Cleveland Clinic Lerner College of Medicine	Ex-ACTRIMS President		

# Share and Capital Structure

<b>Exchange/Market: Ticker</b>	TSX: NGEN.V	OTCQX: NGENF
<b>Recent Share Price</b> (July 18, 2022)	CA \$1.99	US \$1.52
<b>Shares Outstanding</b>	58.5 million	
<b>Fully Diluted</b>	79.5 million (~7.2 million options, ~13.8 million warrants)	
<b>Insider Ownership</b>	25.6%	
<b>~Cash &amp; Cash Equivalents</b> (March 31, 2022 + July 2022 PP)	CA \$32.1 million	US \$25.5 million



# Upcoming Value Drivers

## ADVANCED CLINICAL TRIAL PROGRAM

	PHASE		INITIATION		READOUT
Alzheimer's Disease	1b/2a		Q4 2022		2024
Spinal Cord Injury	1b/2a		Q4 2022		2023
Multiple Sclerosis	2		Q1 2023		2024

- Phase 1 study topline MAD data (2022)
- Preclinical study results in stroke, chronic spinal cord injury and Alzheimer's disease models which could transform treatment paradigms
- Awarding of privately funded and US Department of Defense sponsored grants (2022)
- Uplisting to Nasdaq (2022)

# Investment Highlights

NVG-291 has the potential to **redefine treatment paradigms** for neurological disorders

**Improvement demonstrated across 6 different animal models** in fine and gross motor control, sensory function, autonomic functions, visual acuity, memory & learning, in many cases **unprecedented**


Pipeline addresses **significant unmet medical needs** in spinal cord injury, multiple sclerosis and Alzheimer's disease

Pipeline addresses **very attractive commercial opportunities**

**Experienced management team, board & scientific advisors**



# Enabling the Nervous System to Repair Itself

 [www.nervgen.com](http://www.nervgen.com)

 @NervgenP

 NervGen Pharma Corp.

 NervGen