



Enabling the Nervous System to Repair Itself

Corporate Presentation

April 2025

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First-in-Class Neuro-Reparative Therapeutics for Spinal Cord Injury

- A leading spinal cord injury (SCI) company targeting chondroitin sulfate proteoglycan-mediated inhibition of neural repair
- Lead asset (NVG-291) is a subcutaneously administered, cell-penetrating peptide in an ongoing Phase 1b/2a trial
- Topline data in chronic SCI is expected in early June 2025 with an FDA regulatory meeting to follow
- Global rights to foundational intellectual property (IP) from Case Western Reserve University & internally developed IP
- Extensive preclinical data supporting SCI advancement and pipeline expansion into additional neurodegenerative disorders



Expanded Access Policy:
Authorized March 2025



FDA Fast Track Designation:
Granted October 2023



EMA Orphan Designation:
Granted March 2021

The Mechanistic Rationale of NVG-291

Chondroitin sulfate proteoglycans (CSPGs) are extracellular matrix molecules widely expressed in the central nervous system as inhibitory cues for cellular guidance

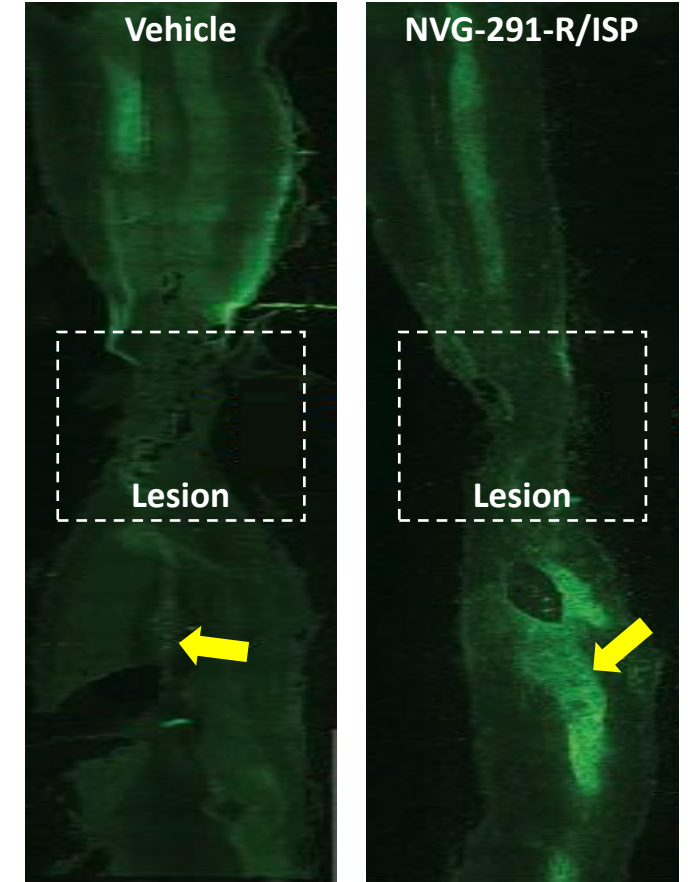
Upon injury or disease, dramatic increases in CSPG expression occurs in lesion areas, creating an inhibitory microenvironment

NVG-291 is derived from the neural receptor protein tyrosine phosphatase sigma ($PTP\sigma$); $PTP\sigma$ is reported to mediate the inhibitory effects of CSPGs on neural repair

In peer-reviewed preclinical studies, the rodent variant of NVG-291 (NVG-291-R/ISP) promotes neural repair, resulting in motor, sensory and autonomic functional recovery

Thoracic Staining at 12 Weeks Post-Injury Shows Serotonergic Axon Sprouting

Rostral (above injury) Rostral (above injury)



Caudal (below injury) Caudal (below injury)

Lang, B. T. et al., Nature 2015 Feb 19;518(7539):404-8

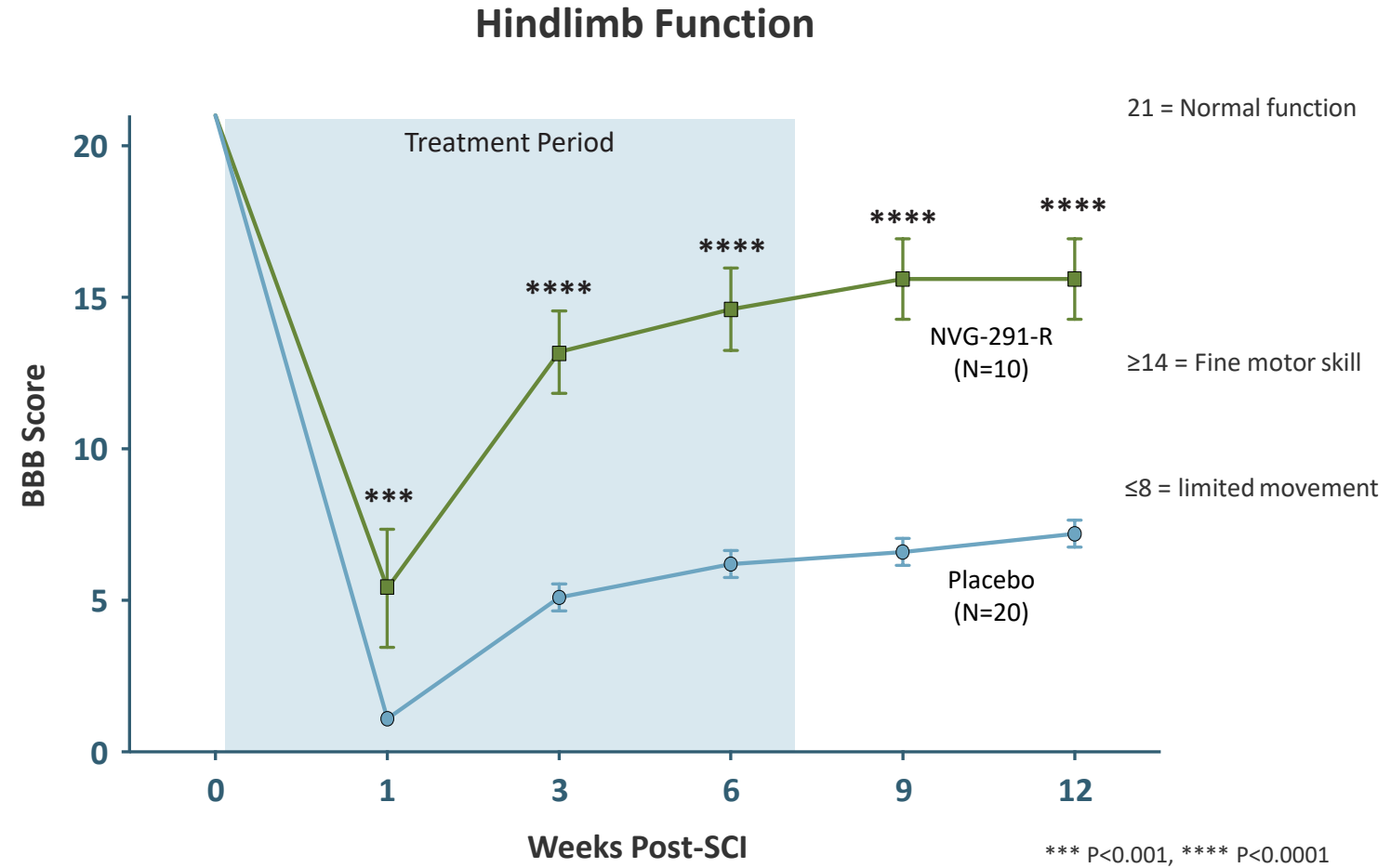
NVG-291-R Promotes Functional Recovery in Acute Spinal Cord Injury Models

Overview

- T8 compression injury
- Treatment start: 1-day post-injury
- Dose: 500 µg/day x 7 weeks

Results

- Significant recovery of locomotor and bladder function
- Persistence of functional improvements after treatment
- Enhanced neuroplasticity (i.e. axonal sprouting) near and far from injury



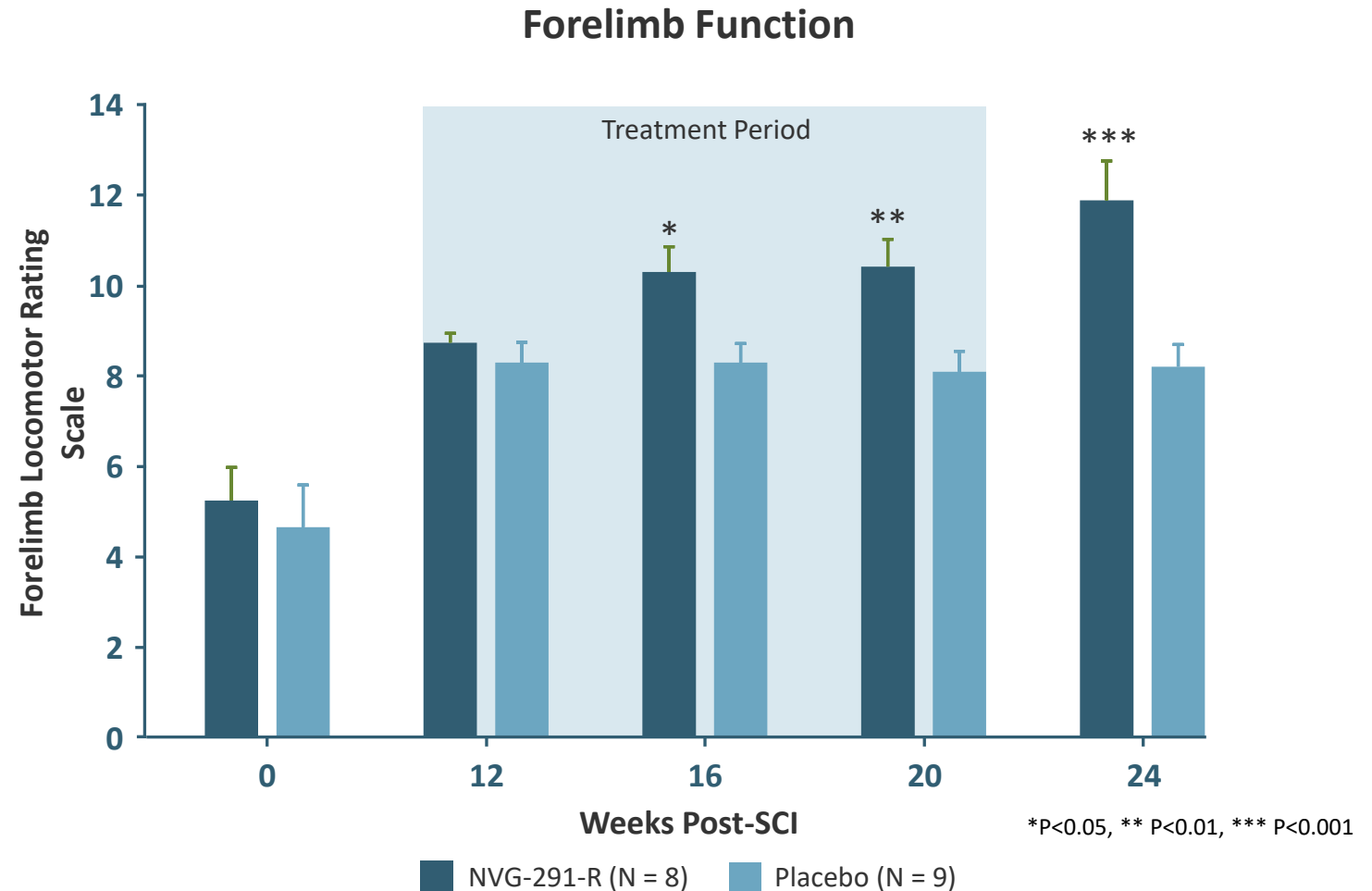
NVG-291-R Promotes Functional Recovery in Chronic Spinal Cord Injury Models

Overview

- C2 lateral hemi-section model of SCI
- Treatment start: 12 weeks post-injury
- Dose: 500 µg/day x 8.5 weeks

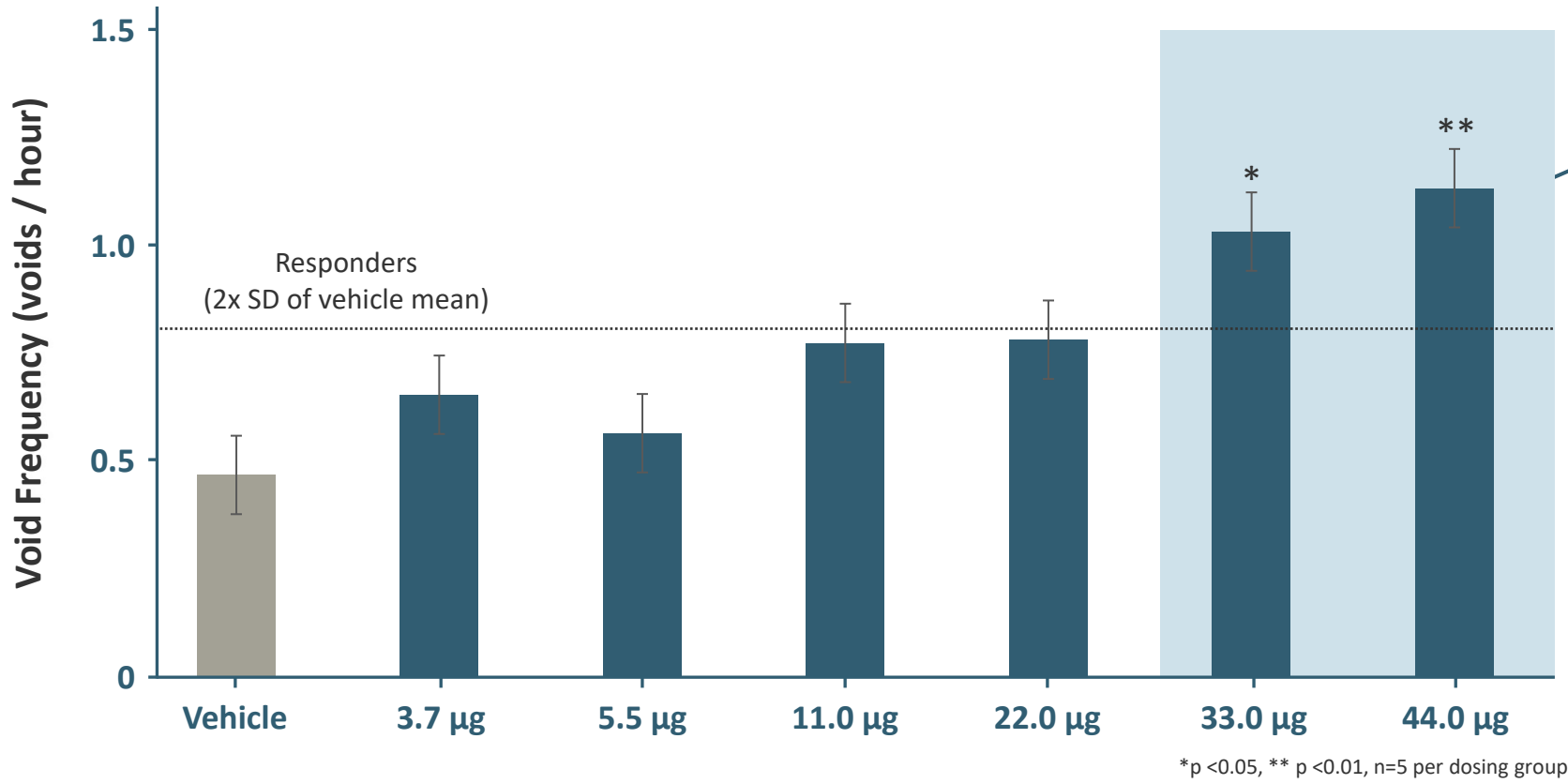
Results

- Significant and rapid recovery of forelimb locomotor function
- Persistence of functional improvements after treatment
- Enhanced neuroplasticity (i.e. axonal sprouting) following injury



NVG-291-R Improves Bladder Control in Spinal Cord Injury Models

Bladder Dose Response



100%

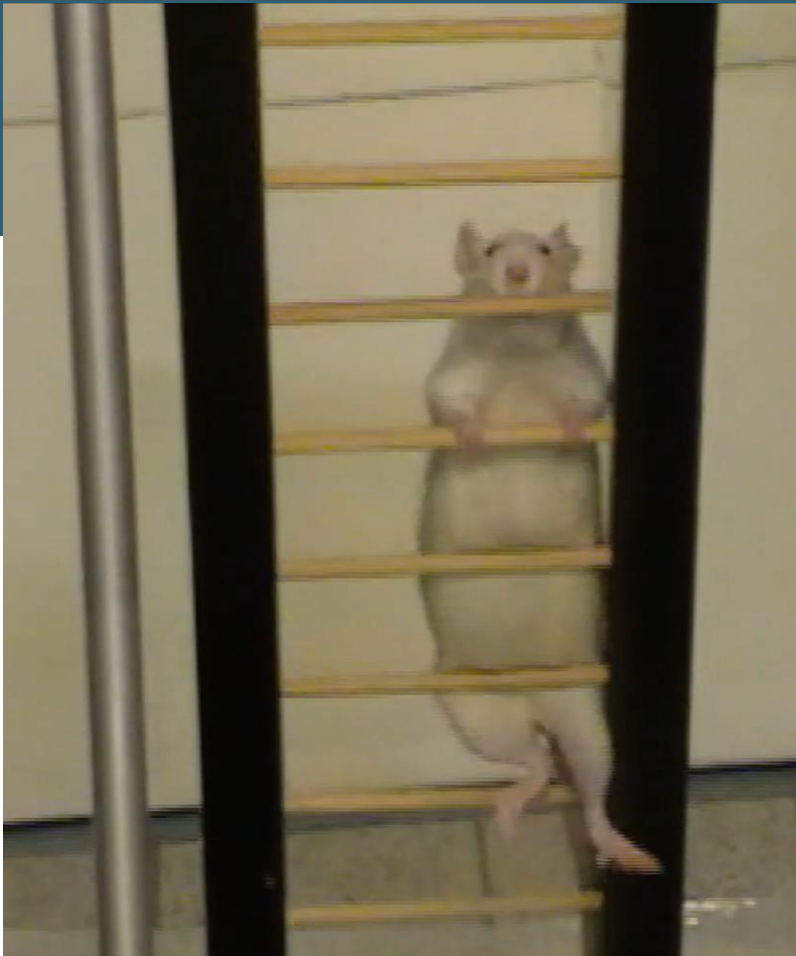
of animals in the two highest dose cohorts had improved bladder control function

- Animals tested at week 12 post-SCI; graph shows group averages

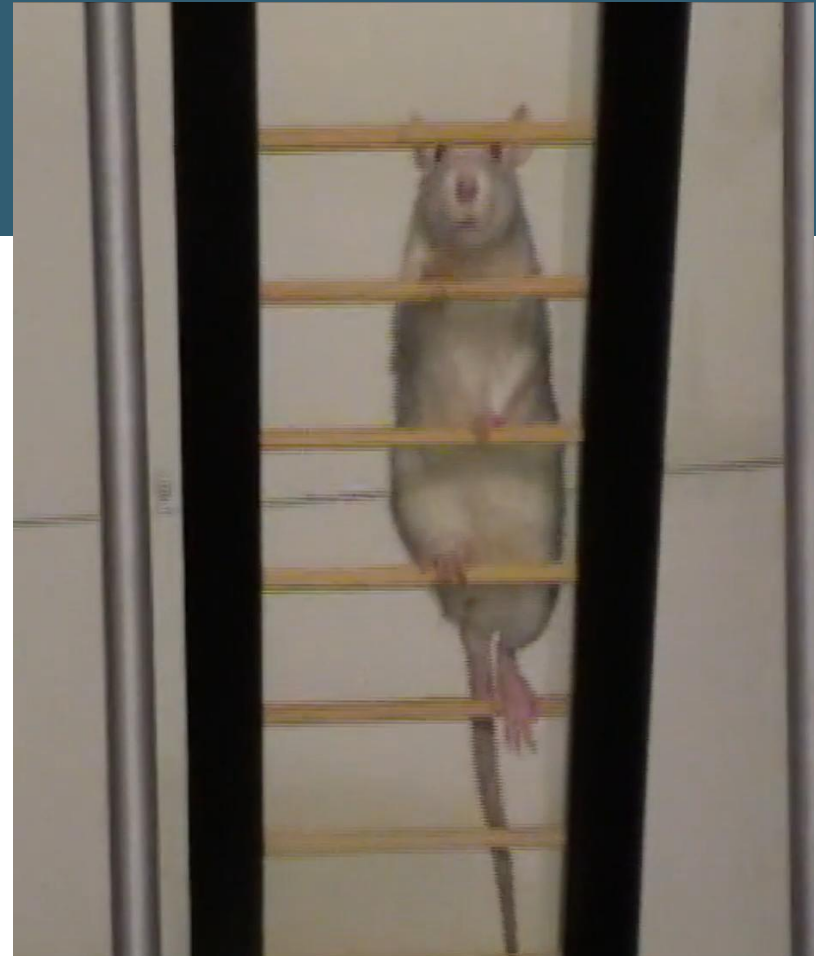
Control of Autonomic Function is a Key Quality of Life Measure in the SCI Population

NVG-291-R Improves Motor Function in Severe Spinal Cord Injury Models

Placebo Group



After Treatment



[Click here to play video](#)

Spinal Cord Injury Demographics and Characteristics in the U.S.



- Average Age: 44
- Male (78%), Female (22%)
- Cause: Vehicle (37%), Fall (32%), Violence (15%), Sports (8%)
- Annual Re-Hospitalization (30%): UTI, Pneumonia, Decubitus Ulcers
- Significant Urinary and Sexual Dysfunction
- Duration of Hospitalization and Rehabilitation: 2-3 months

Current Standard of Care for Spinal Cord Injury

Decompression Surgery

Rehabilitation

No Approved Drugs Enable Functional Recovery

- Plateau of spontaneous functional recovery after 6-9 months¹
- Shift in priorities from *full* recovery to quality of daily living, including:
 - Ability to self-feed; control of bowel and bladder movements
 - Independence around bathing, grooming, and dressing

*“What takes you one minute to do takes me at least fifteen minutes.”*²

“My dream is to have enough hand function to hold my own toilet paper.”

“My family would take out a second mortgage if there were something, anything, that could help me.”



The Economic Burden of Spinal Cord Injury in the U.S.

Cost per Patient¹

\$1M-\$6M in lifetime care costs
depending on severity or age at injury

\$1.2M average care costs in the
first year of injury for tetraplegic patients

~\$1M in lost lifetime earnings
depending on severity or age at injury

Cost to the System^{1,2,3}

~\$58B in total annual cost to
the healthcare system

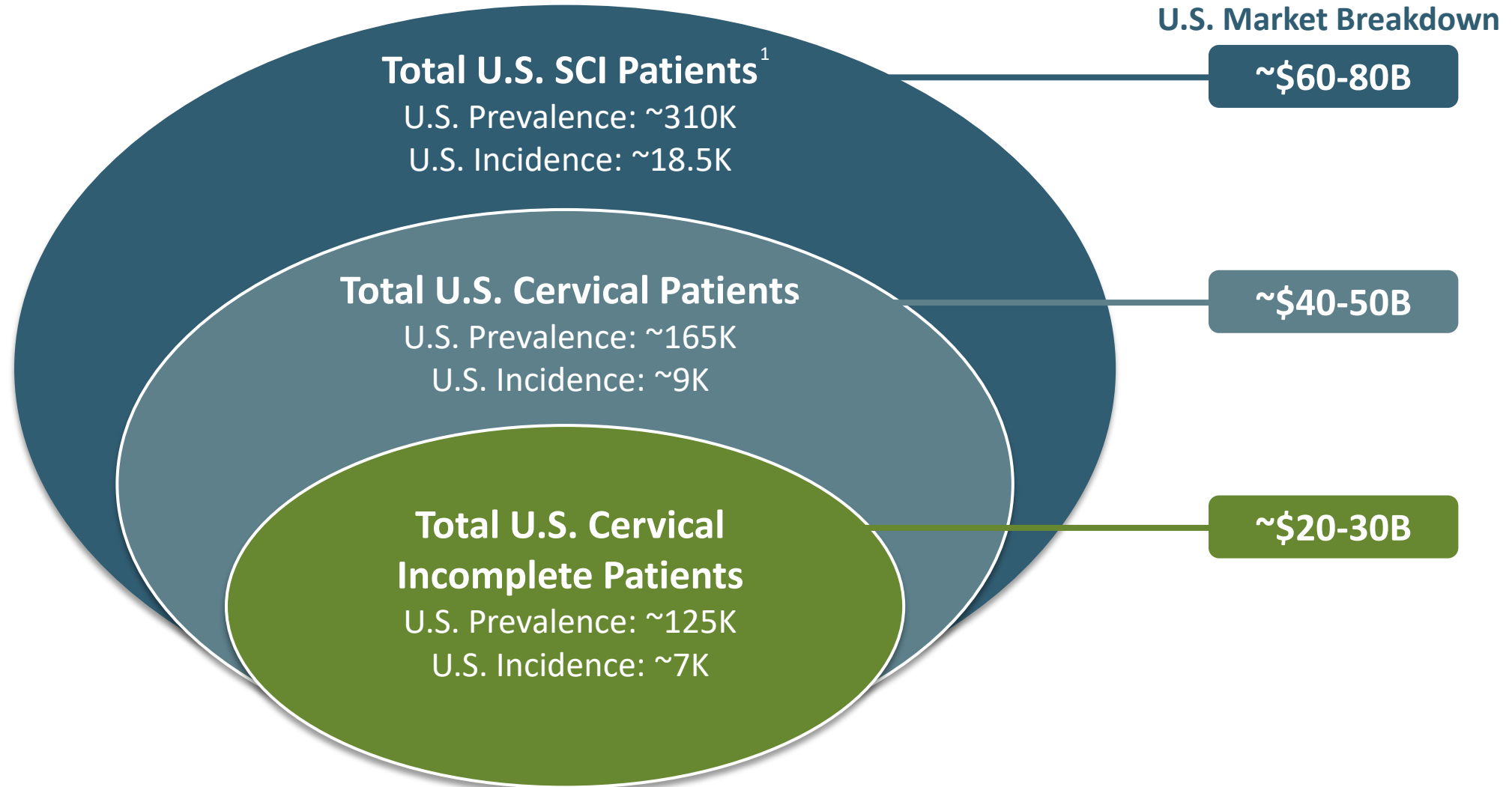
~\$15B of medical and related costs
in the first year of injury

>4x higher average medical charges
>2x increase in average hospital stay duration

(1) NSCSC: SCI Facts and Figures at a Glance; 2024 SCI Data Sheet. (2) Shepherd Center. One Degree of Separation: Paralysis and Spinal Cord Injury in the United States. Christopher & Dana Reeve Foundation, 2009; adjusted for inflation. (3) McDaid, David, A-La Park, Ailbhe Gall, Mairead Purcell, Michael Bacon, and Changwoo Kim. "Understanding and Estimating the Economic and Societal Impacts of Spinal Cord Injuries: A Systematic Review and Agenda for Future Research." Spinal Cord, vol. 59, 2021, pp. 1034-1046

Untapped Market Opportunity with No Approved Therapies

Spinal cord injury affects ~12M people worldwide, with 285K new cases every year



NVG-291 Phase 1 Clinical Trial in Healthy Volunteers

Study Design

Single Dose

- 37 subjects
- 6 dose levels
- Assessed through Day 8

Multiple Dose

- 33 subjects
- 4 dose levels
- Subjects dosed subcutaneously once per day for 14 days
- Assessed through Day 21

Safety Results

- Well tolerated across all doses
 - Maximum tolerated dose not reached
- No treatment discontinuations
- No serious/severe adverse events (AE) in NVG-291 group
- Most common AE was Grade 1/2 injection site reactions (ISR)
- No clinically significant effects related to NVG-291 treatment across all study parameters

Clinical Objective: NVG-291 Increases Connectivity after Spinal Cord Injury

Preclinical Studies

Rodent variant of NVG-291 (NVG-291-R/ISP) demonstrates axonal regeneration, remyelination, enhanced plasticity and nervous system repair

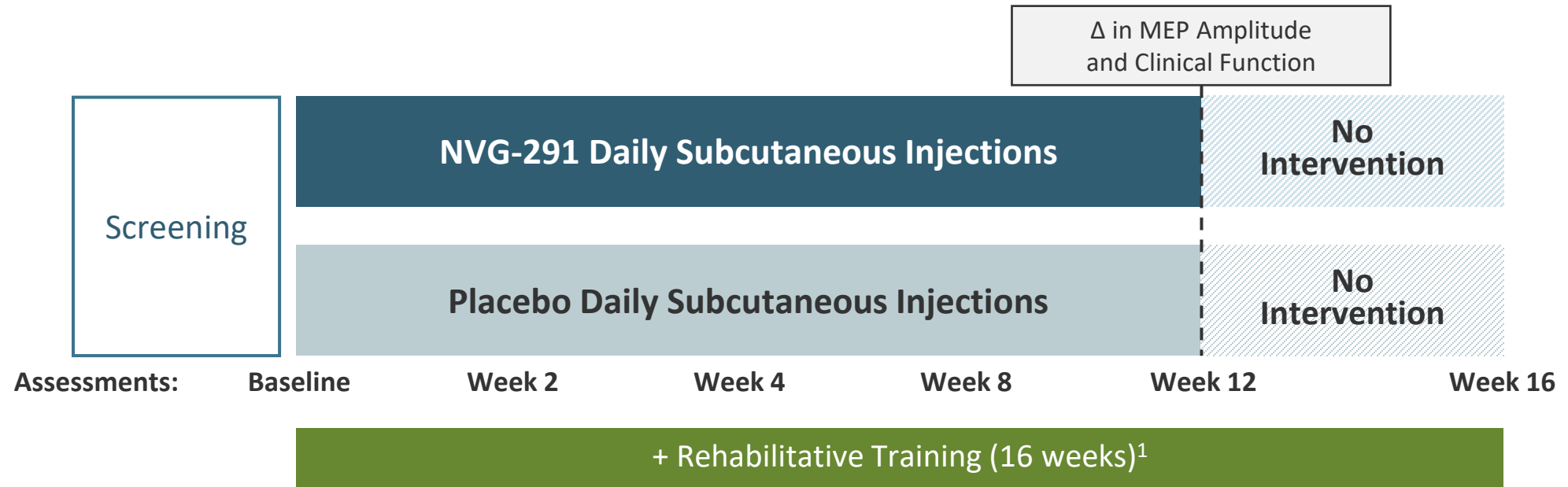
Clinical Objective

NVG-291 *increases connectivity* and *motor function* in humans after spinal cord injury

Clinical Trial

- Evaluate efficacy via *change in motor connectivity*
 - Electrophysiological measures: motor evoked potentials (MEPs)
 - Functional (clinical) measures
- Evaluate safety
 - Well tolerated in Phase 1 study; only ISR observed with no SAEs

Phase 1b/2a Trial Design in Chronic and Subacute Spinal Cord Injury



Two Cohorts

- Chronic (20 subjects): 1-10 years post-injury
- Subacute (20 subjects): 20-90 days post-injury

Key Eligibility Criteria

- Age 18-75
- Traumatic cervical spinal cord injury (C7 or higher)
- Motor incomplete with min/max motor function
- Intact motor evoked potential in two qualifying muscle groups (hand, leg)

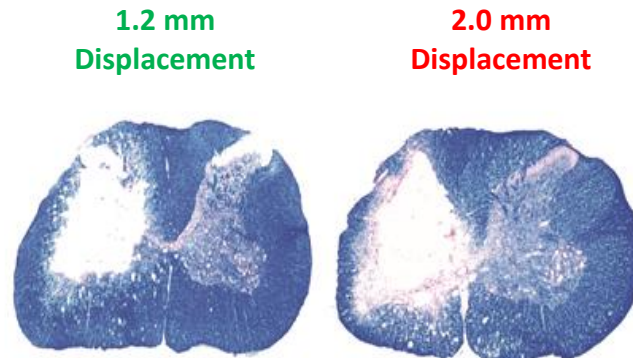
Phase 1b/2a Electrophysiological Endpoints

Change in Motor Evoked Potential Amplitude (MEP) of First Dorsal Interosseous Muscle (FDI)

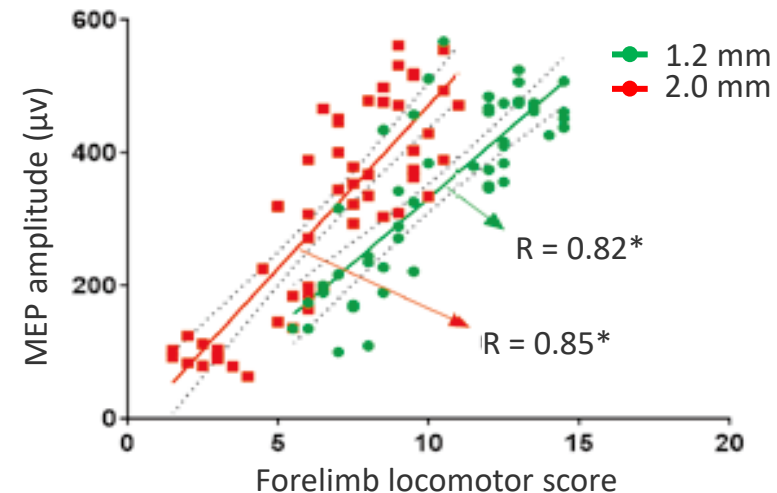
Change in Motor Evoked Potential Amplitude (MEP) of Tibialis Anterior Muscle (TA)

Preclinical Evidence: Improvements in MEPs Correlate to Forelimb Recovery¹

Two Injury Severities



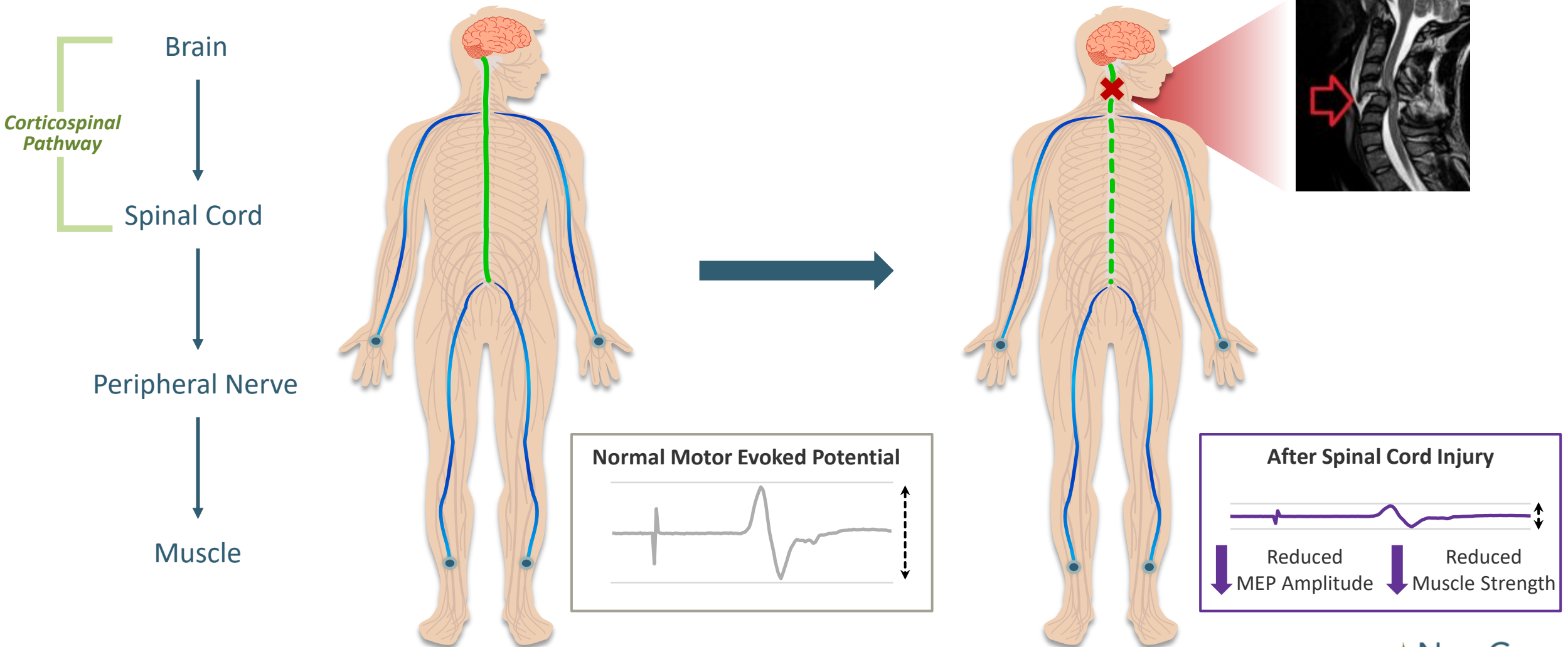
Correlation of MEP Amplitude to Functional Recovery



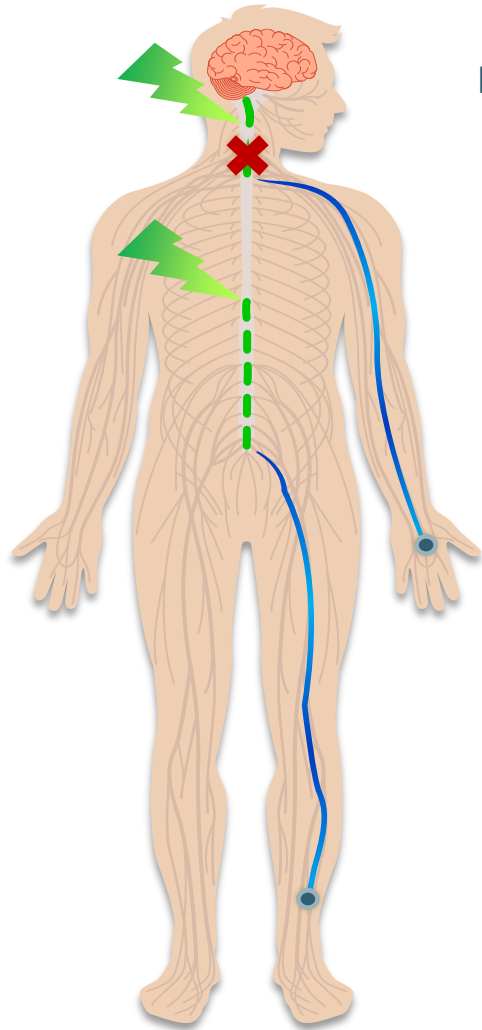
- Analysis of MEP and forelimb recovery over 12 weeks in a mild (1.2 mm) or severe (2.0 mm) cervical hemi-contusive SCI model
- Forelimb locomotor score quantitatively assesses gross motor function
- MEPs were recorded at the brachioradialis muscle

SCI Results in Loss of Connectivity, Reflected by Reduced MEP Amplitudes

Motor evoked potentials (MEPs) are measured via electrical stimulation of the corticospinal pathway



NVG-291 Seeks to Improve Connectivity, Reflected by Increased MEP Amplitudes



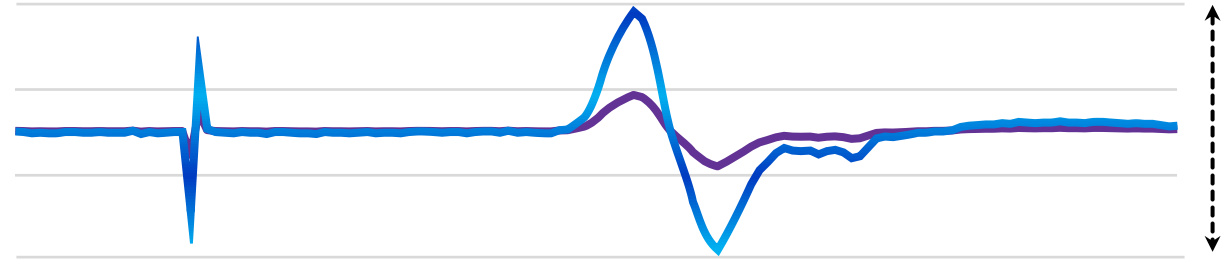
First Dorsal Interosseus (FDI)
(finger control, grasping)



Tibialis Anterior (TA)
(walking)



Goal of NVG-291: Increase Motor Connectivity & MEP Amplitudes



Increased
MEP Amplitude



Increased
Connectivity



Increased
Muscle Strength



Increased
Function

Phase 1b/2a Functional (Clinical) Endpoints

Ten Meter Walk Test (10mWT)

9-Hole Peg Test (9-HPT)

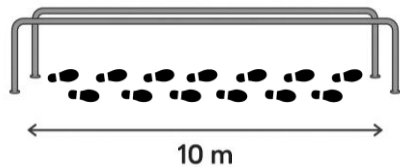
Pinch Force

GRASSP (Graded Redefined Assessment of Strength, Sensation and Prehension)

Lower Extremity Motor Score (LEMS)

Upper Extremity Motor Score (UEMS)

10mWT



9-HPT



Pinch Force



GRASSP



LEMS

- L2 Hip flexors
- L3 Knee extensors
- L4 Ankle dorsiflexors
- L5 Long toe extensors
- S1 Ankle plantar flexors

UEMS

- C5 Elbow flexors
- C6 Wrist extensors
- C7 Elbow extensors
- C8 Finger flexors
- T1 Finger abductors

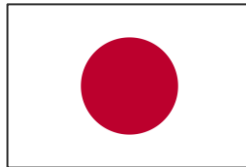
Comprehensive Intellectual Property Coverage of NVG-291

High confidence of exclusivity through composition of matter, method of use, orphan designation, and other

- Exclusive worldwide rights to NVG-291 composition and all indications, licensed from Case Western Reserve University
- Composition of matter claims cover NVG-291 (human), ISP (rodent analog of NVG-291) and other related analogs
- Method of use claims cover spinal cord injury, stroke, traumatic brain injury, multiple sclerosis, and a wide range of neurodegenerative disorders and neural injuries
- Patents filed and granted in major markets globally



2037+

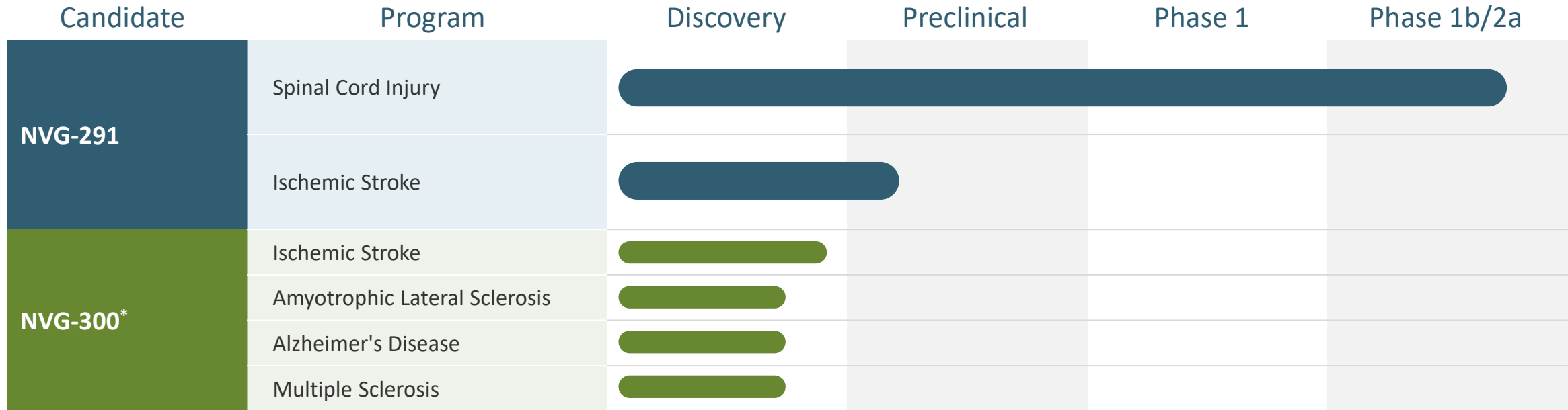


2038+



2039+

Development Pipeline and Near-Term Milestones



- **Phase 1b/2a Topline Data in Chronic SCI:** Early June 2025
- **FDA Regulatory Meeting to Discuss NVG-291 Development Path:** 3Q 2025
- **Subacute Cohort:** Actively enrolling
- **Pipeline Expansion:** Ongoing discovery and development for additional neurodegenerative disorders

Share and Capital Structure

Exchange/Market: Ticker	TSX: NGEN.V OTCQB: NGENF
Recent Share Price (Apr 28, 2025)	CA\$2.97 / US\$2.15
Shares Outstanding	71.2 million
Fully Diluted	95.0 million (~13.7 million options & retention securities, ~10.1 million warrants*)
Insider Ownership	20.9%
Cash & Cash Equivalents (Dec 31, 2024)	CA\$17.3 million / US\$12.0 million

Seasoned Leadership Team



MIKE KELLY, MBA, CHIEF EXECUTIVE OFFICER

Over 30 years of pharmaceutical experience. Formerly President of US Ops for Adapt Pharma, Inc., which developed and commercialized NARCAN Nasal Spray in the US and Canada and was sold to Emergent BioSolutions for US\$735 million.



BILL ADAMS, CPA, CA, CHIEF FINANCIAL OFFICER

Over 25 years of strategic financial management experience including mergers and acquisitions, operations and capital markets in Canada and the US.



DAN MIKOL, MD, PHD, CHIEF MEDICAL OFFICER

Over 25 years of experience in neurology clinical research. Former Head of clinical development at Amgen in neuroscience and nephrology and was instrumental in the approval of Aimovig, and development lead for Tysabri at Biogen.



CHUCK OLSON, DSC, SR. VP, TECHNICAL OPERATIONS

Over 40 years of experience in process development, manufacturing and CMC associated quality and regulatory activities for many clinical and commercial products.



LIZ EBERHARDT, BSC, SR. VP, PROJECT MANAGEMENT

Over 25 years of biotech experience in product leadership and program management and has taken multiple compounds through all stages of development including preclinical and commercialization.



KEVIN ROONEY, MBA, SR. VP, CORPORATE DEVELOPMENT & STRATEGY

Over 30 years of experience in building businesses in oncology, central nervous system, diabetes, anesthesia, rare disease, cardiovascular, gastrointestinal, and infectious disease therapeutic areas.



MATVEY LUKASHEV, PHD, VP, RESEARCH & PRECLINICAL DEVELOPMENT

Over 30 years of experience in academia, industry and biotech settings focused on translational research and drug discovery.

Board of Directors



Glenn Ives

Chairman
Former Partner, Deloitte LLP



Harold Punnett, DMD

Co-Founder



Mike Kelly

President & CEO, NervGen



Adam Rogers, MD

Former CEO & Co-Founder, Hemera



Brian Bayley

Director, Earlston Investments



Neil Klompas

President & CEO, Augurex



John Ruffolo

Founder & Managing Partner, Maverix



Randall Kaye, MD

CMO, Longboard Pharmaceuticals



Krista McKerracher

Former Global Franchise Head, Novartis



Craig Thompson

CEO, Cerevance



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