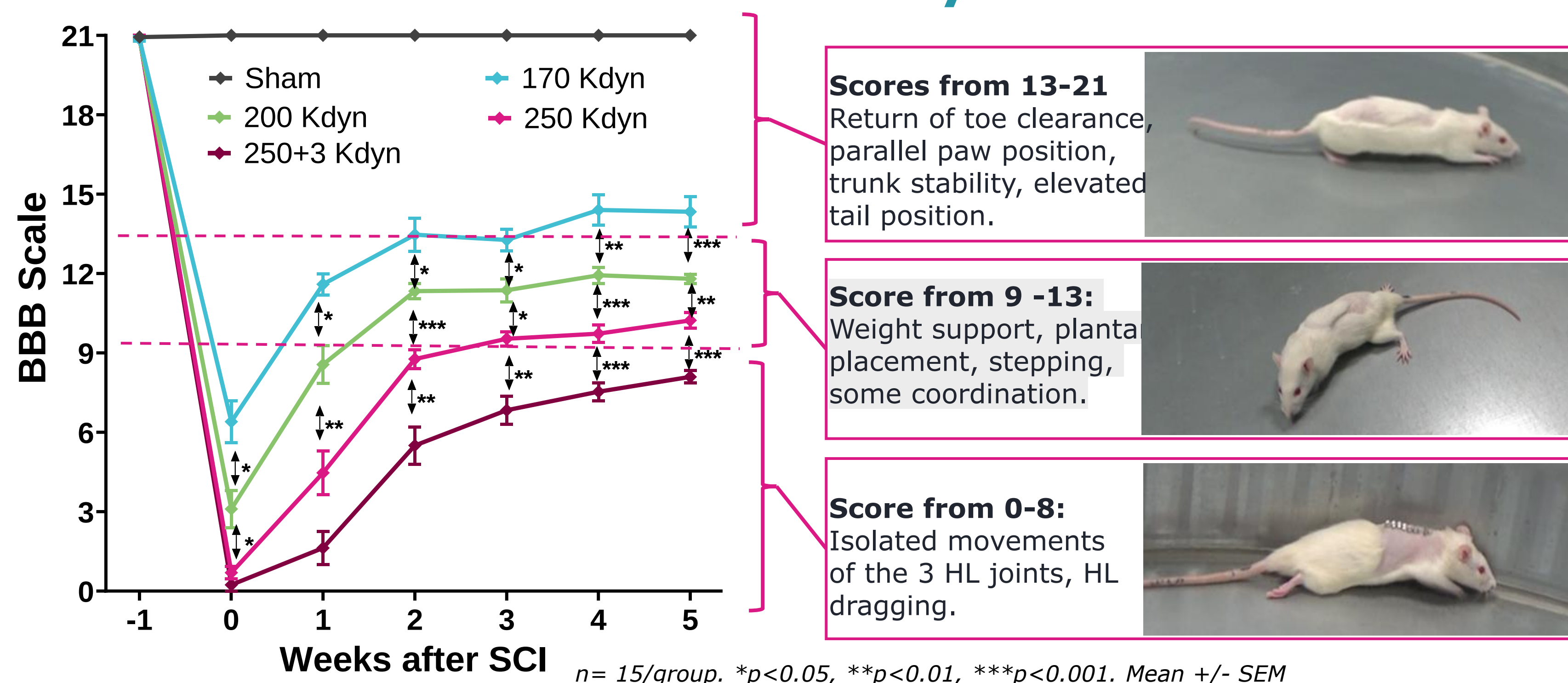
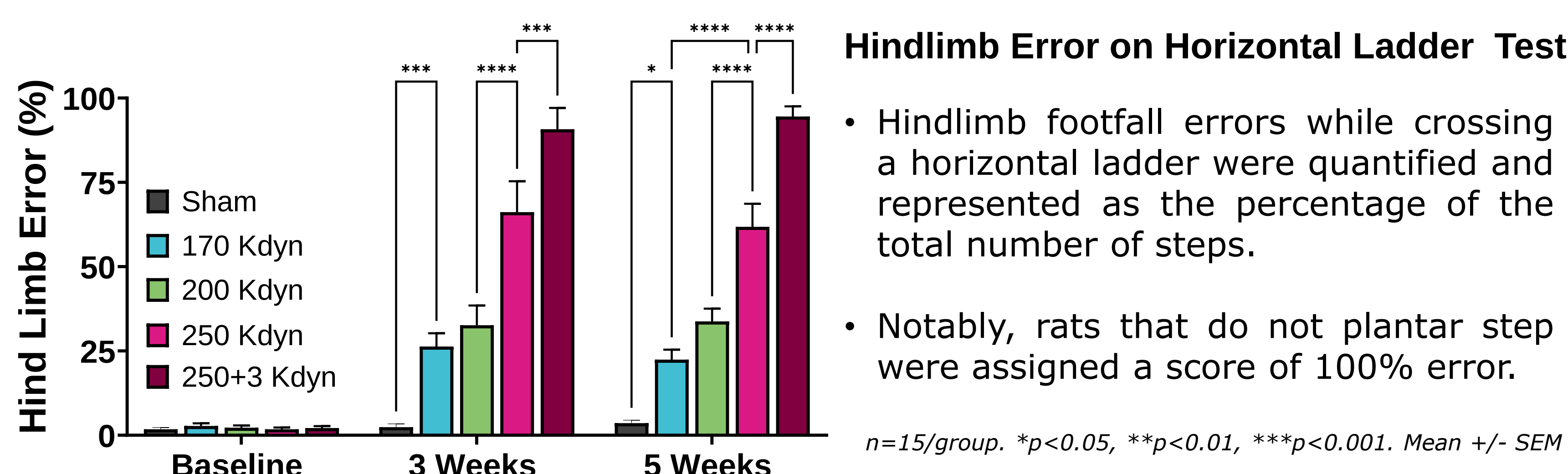


THORACIC SCI TEST BATTERY

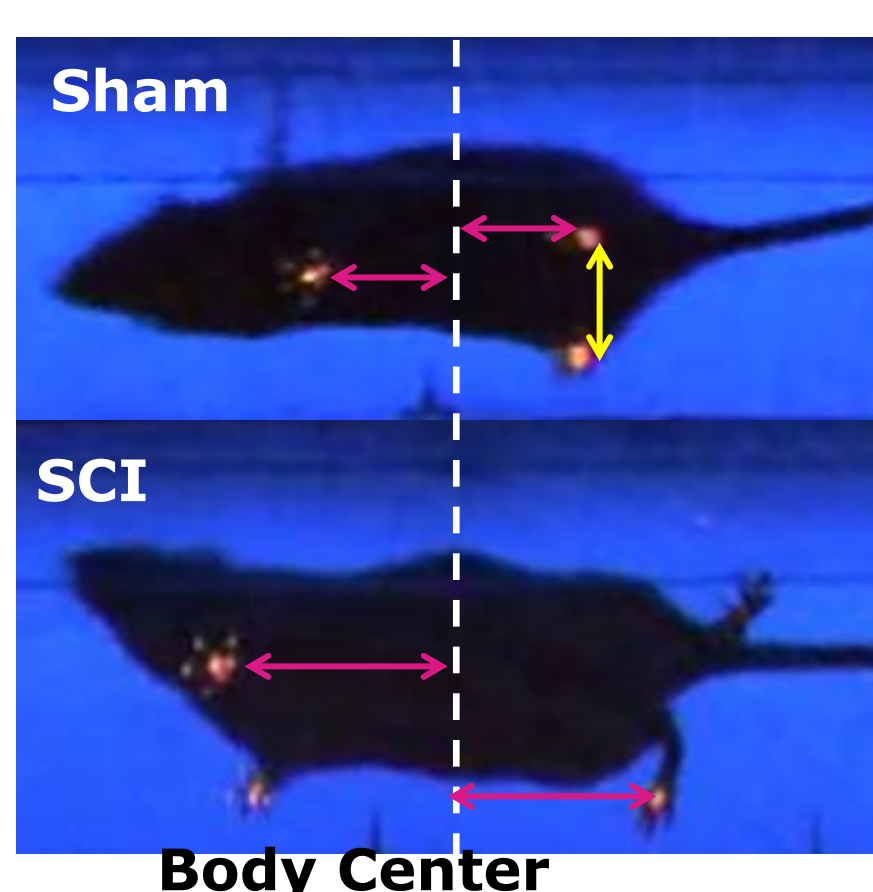
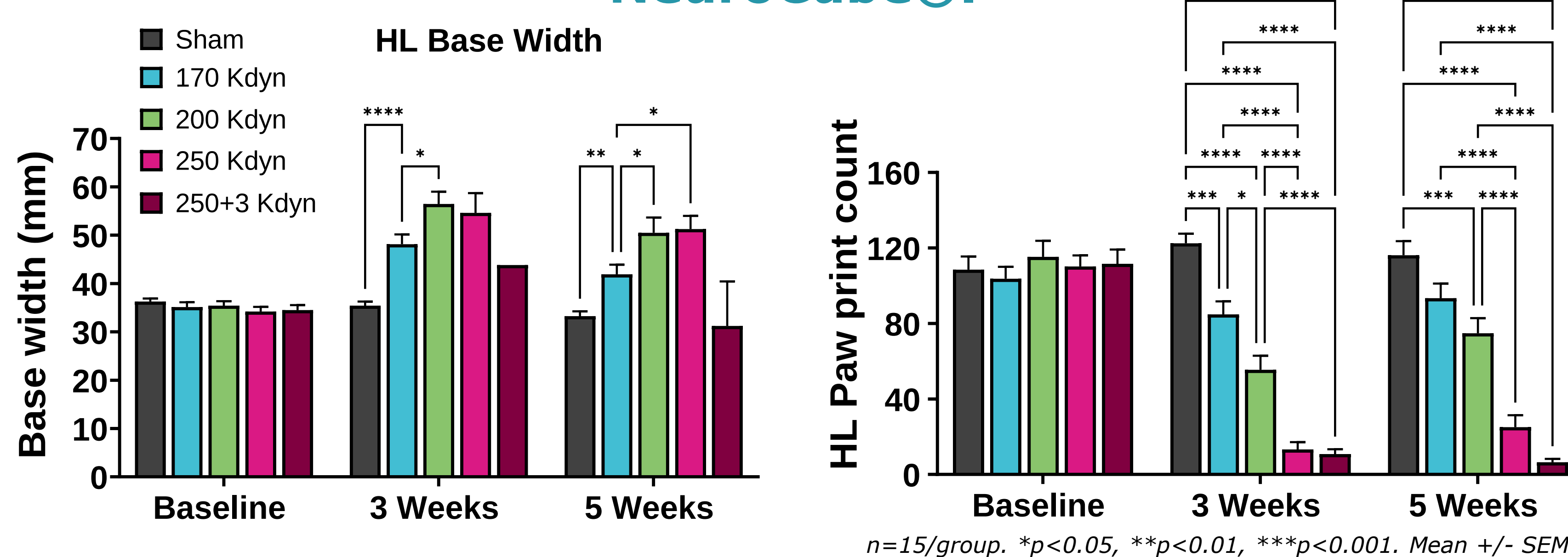
Hind Limb Gross Locomotion Decreased with Thoracic SCI Severity



Thoracic SCI Severity Impacted Sensorimotor Function

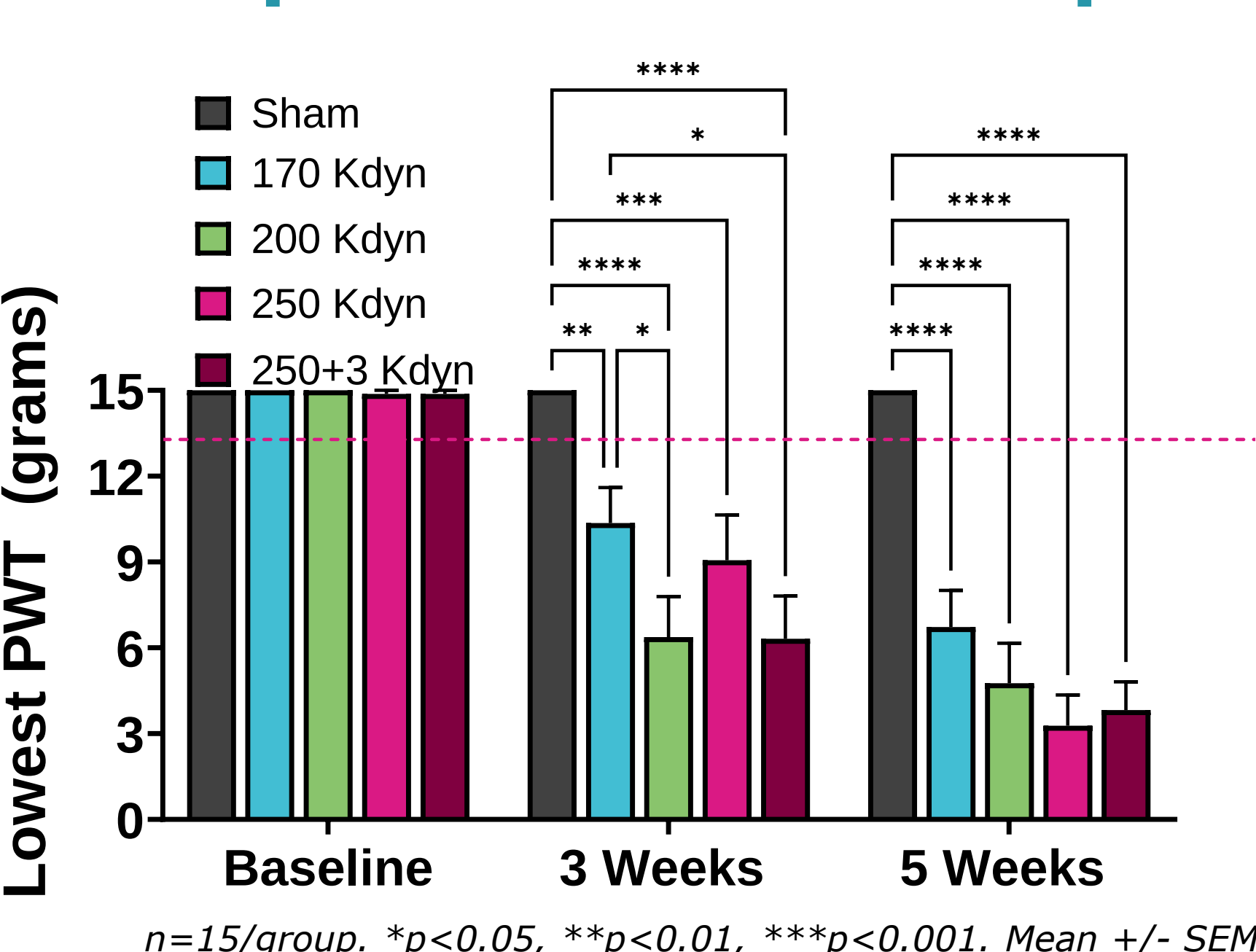


Unbiased Quantification of Locomotion Features Using NeuroCube®.



- Still image from video recording indicate Ipsilateral (pink) and girdle (yellow) measurements. Normally, the distance from the body center to the FL is ~60mm and ~40mm to the HL and body center. After SCI, this distance increases significantly.
- HL base of support increased in all SCI groups except for the most severe compared to baseline and sham
- Paw print count indicates the ability and frequency of SCI rats to take weight supported steps. HL paw print decreased as SCI severity increased.

Neuropathic Pain Development after Graded Thoracic SCI



Mechanical Allodynia (Von Frey test)

- All SCI severities cohorts decreased paw withdrawal thresholds (PWT) to mechanical stimuli compared to both baseline and sham.
- Importantly, hindpaw sensitivity was more pronounced with increased SCI severity.
- The lowest PWT for each animal (either left or right) is presented.
- Some animals from each cohort did not show decrease in PWT, showing values of 13grms or higher.

INTRODUCTION

- Reliable preclinical spinal cord injury (SCI) models are essential for developing new therapies, but setting up an SCI lab is costly and requires specialized expertise. These barriers often deter researchers and investors from entering the field.
- To address this, PsychoGenics, in collaboration with the Christopher & Dana Reeve Foundation and Drexel University, validated standardized models of Thoracic and Cervical contusion SCI. A specialized SCI-focused Contract Research Organization (CRO) can streamline research, reduce costs, and enable consistent evaluation of potential treatments.

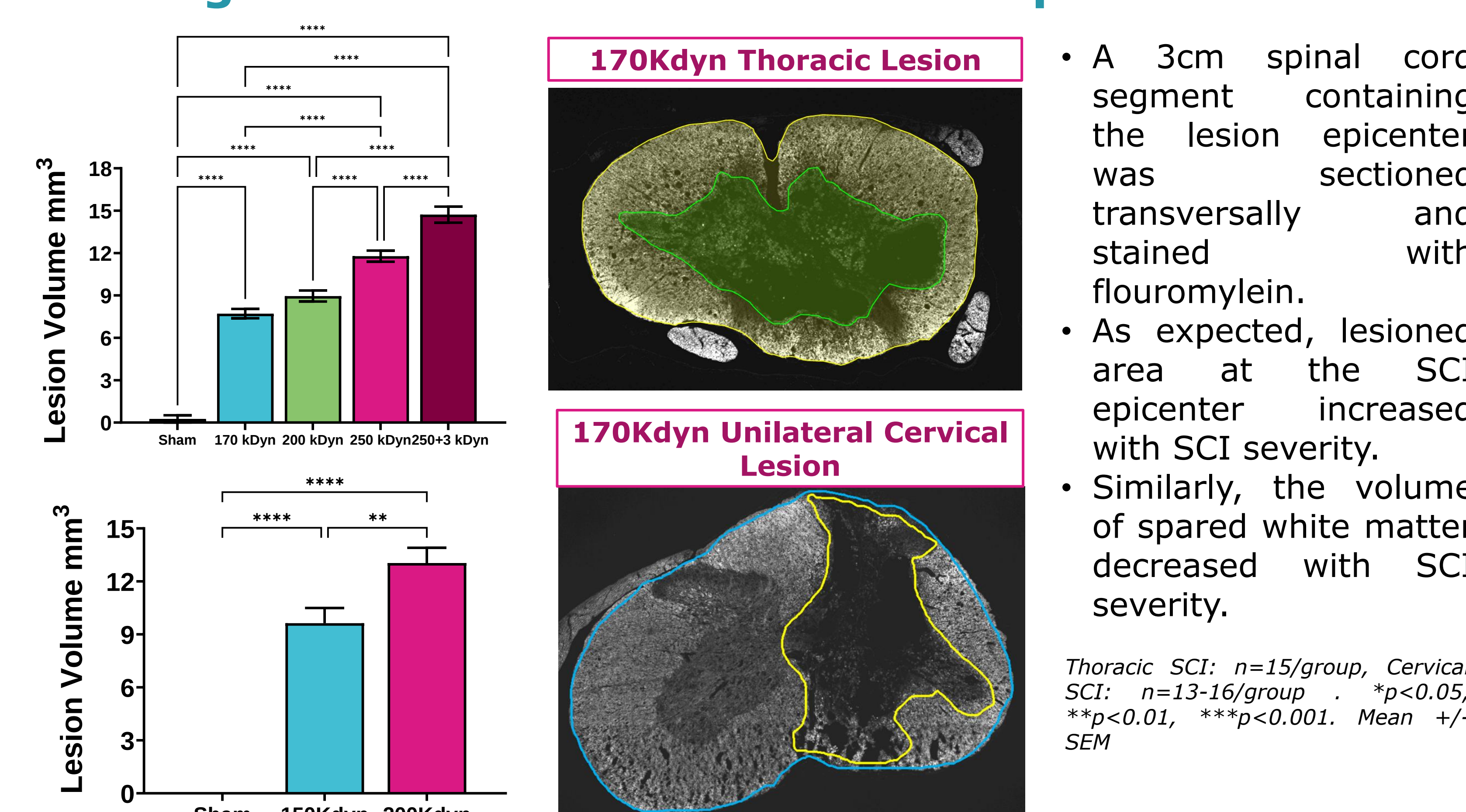
METHODS

	Thoracic SCI	Cervical SCI
Subjects	Female SD rats (200-220 grams) from Inotiv.	
Facility	Psychogenics Inc, New Jersey	
Level	T8, Bilateral	C5, Unilateral (Right Side)
Experimental Groups	Sham 170 Kdyn 200 Kdyn 250 Kdyn 250 Kdyn + 3 seconds	Sham 150 Kdyn 200 Kdyn
Locomotor Tests	BBB score, Ladder Test, Neurocube automatic Gait analysis	Martinez Open Field, IBB score, Ladder test, Cylinder Test, Neurocube automatic Gait analysis
Sensory Test	Von Frey Test (Mechanical Allodynia) and Acetone Test (Cold Sensitivity)	
Timeline	After Baseline animals were tested for 5 weeks and Tissue collected at Week 6.	
Histology Assessment	Lesion Size, Spare Tissue Size, Total Spinal cord Size	

SUMMARY

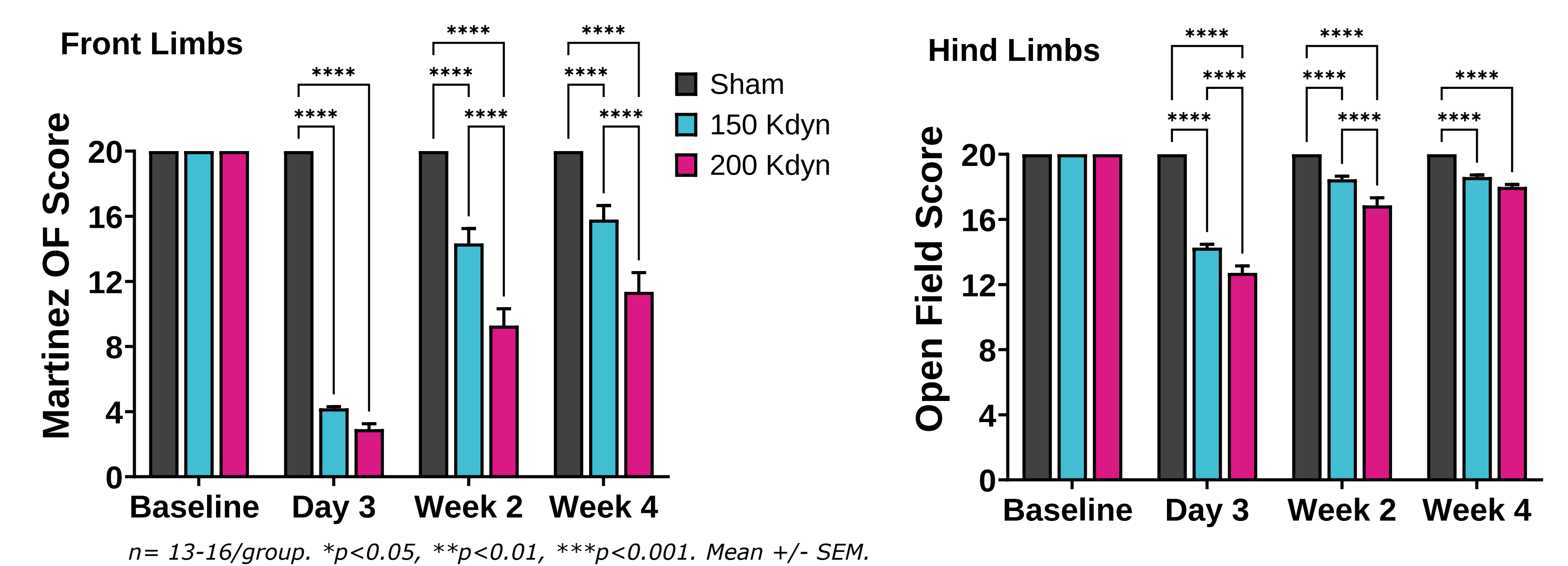
- The PsychoGenics platform for SCI research research supports large-scale studies, with the capacity to test 30-60 animals per week across multiple behavioral assays. capturing multiple aspects of recovery following SCI.
- Thoracic SCI can be consistently tailored to produce mild, moderate, or severe mid-thoracic lesions, with recovery patterns reliably reflecting lesion severity.
- Unilateral cervical SCI has been validated at two severity levels, each resulting in distinct recovery profiles. The most sensitive behavioral assessments have been identified.
- Gross locomotion, fine locomotion, coordination, gait geometry, and gait dynamics are measured using sensitive behavioral tests.
- Changes in mechanical and cold sensitivity demonstrated the association of SCI with allodynia and hyperalgesia.
- Lesion size and spared tissue were quantified through histological analysis.
- This comprehensive SCI platform enhances the ability to evaluate a wide range of drug applications across diverse functional outcomes.

Histological Evaluation of Lesion and Spared Tissue Size



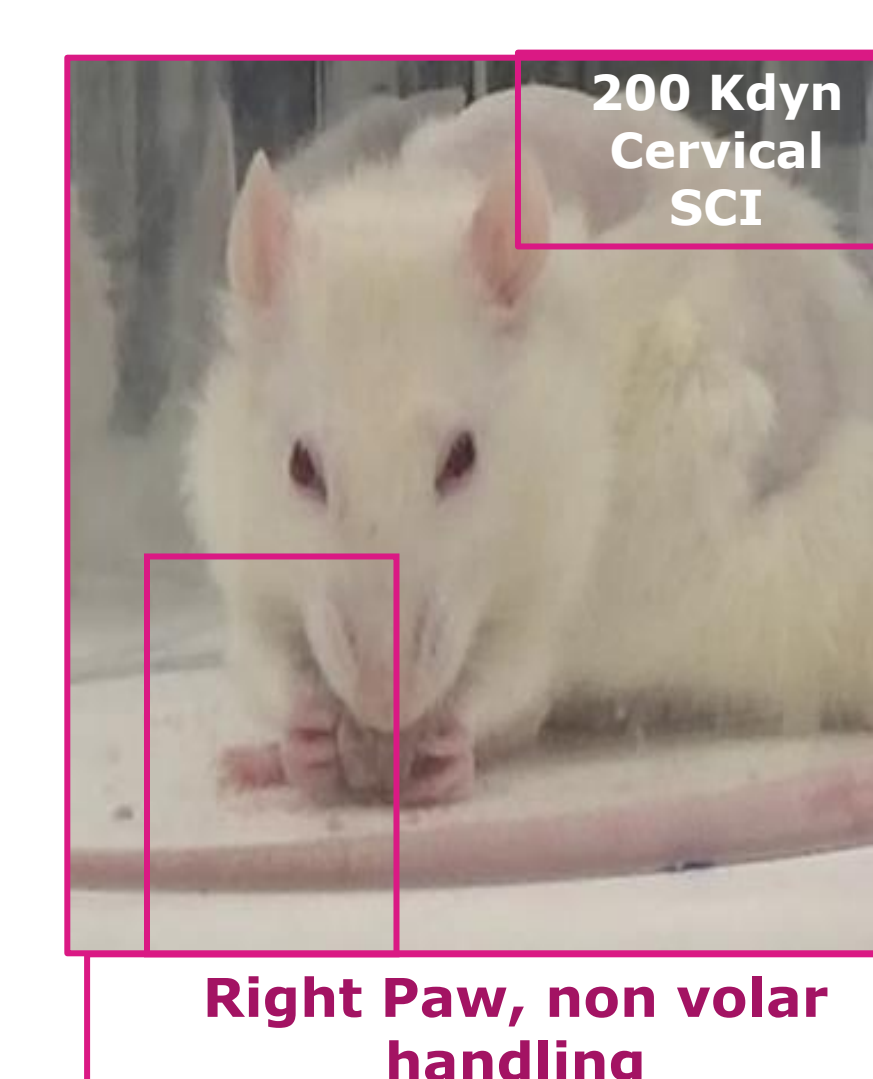
CERVICAL SCI TEST BATTERY

Front and Hind Limb Locomotion Performance Decreased with Unilateral Cervical SCI

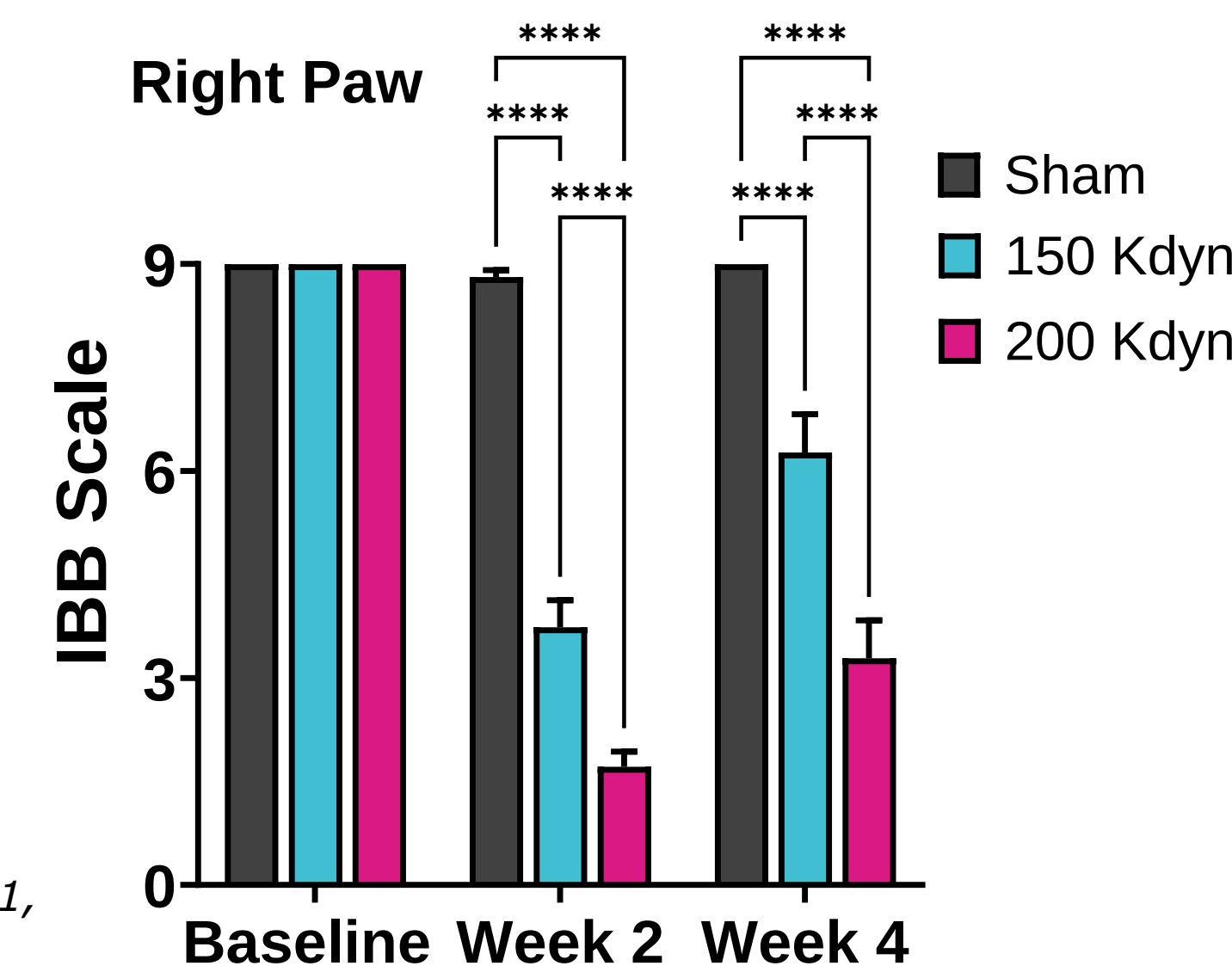


- Gross locomotion skills decreased with SCI, primarily on the Right Front Limb. Modest but significant changes are observed in the right Hind Limbs as well.

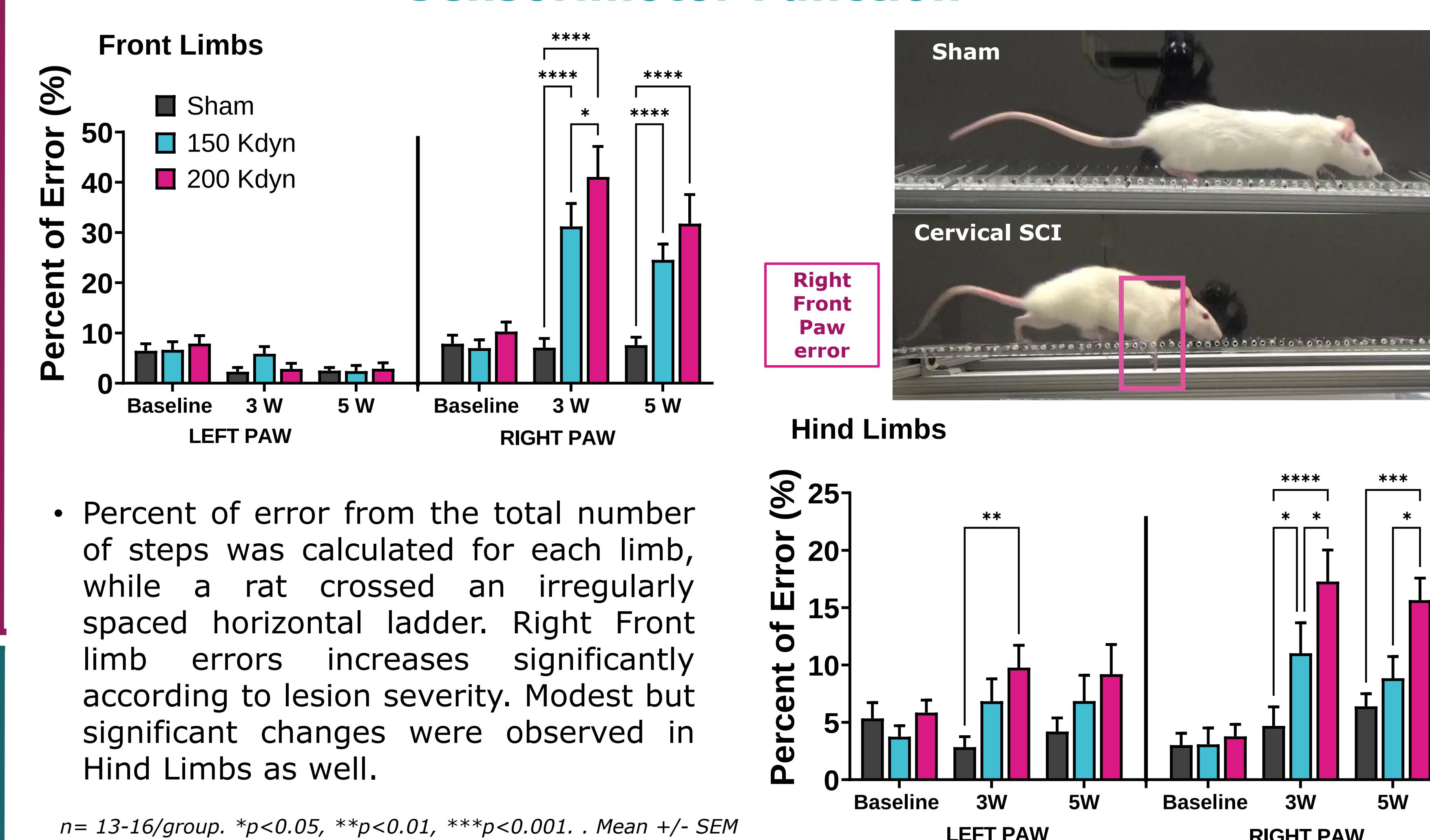
Paw dexterity, while handling a pellet, decreased with unilateral Cervical SCI



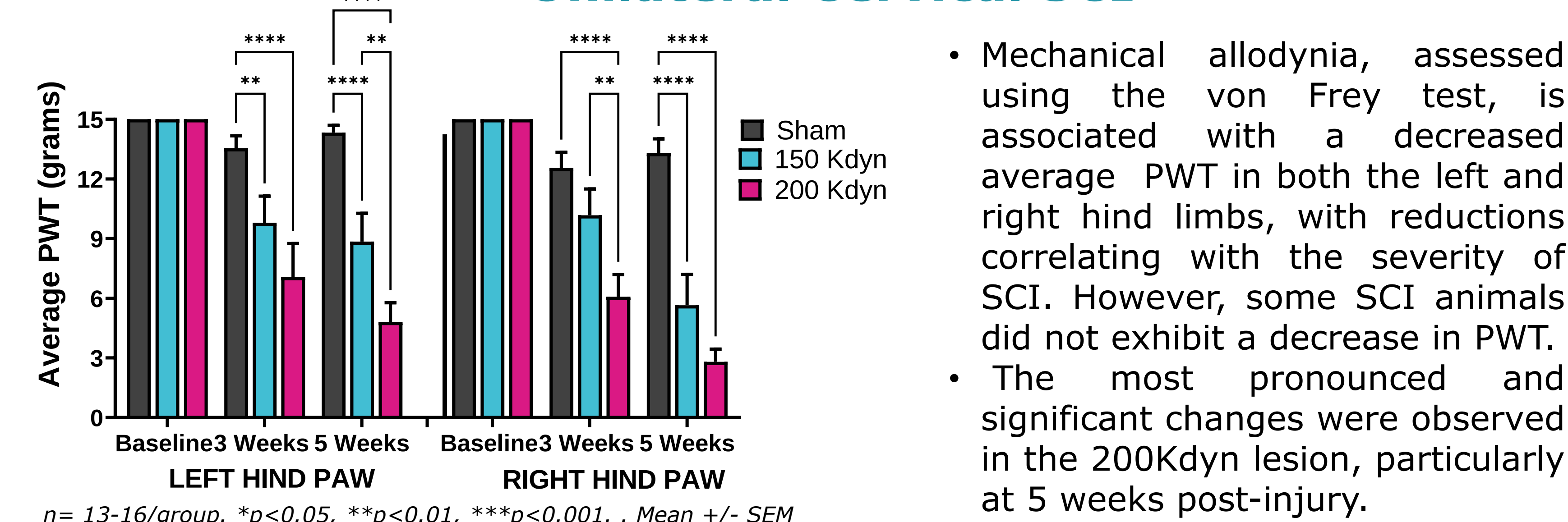
- Paw dexterity evaluated with Irvine, Beatties, and Bresnahan (IBB) Forelimb Recovery Scale, shows decreased in paw dexterity according with injury severity



Cervical SCI Severity Impacted Front and Hind Limbs Sensorimotor Function



Neuropathic Pain Development in the Hind Paws after Unilateral Cervical SCI



- Mechanical allodynia, assessed using the von Frey test, is associated with a decreased average PWT in both the left and right hind limbs, with reductions correlating with the severity of SCI. However, some SCI animals did not exhibit a decrease in PWT.
- The most pronounced and significant changes were observed in the 200Kdyn lesion, particularly at 5 weeks post-injury.