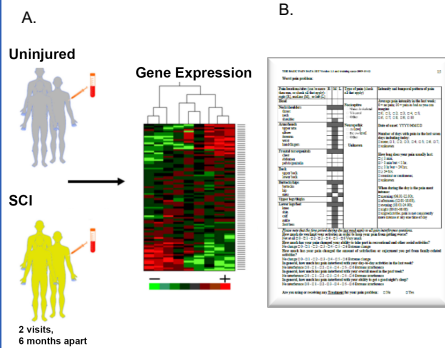




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**Objectives:** Pain affects most individuals with SCI, is often refractory to treatment, and negatively affects quality of life. Previously, we analyzed blood gene expression in individuals with chronic SCI (N=31) compared to able-bodied (AB, N=26) individuals. Most participants with SCI reported 2 major, simultaneous pain types (nociceptive, neuropathic). Here, we analyzed blood differential gene expression by worst pain type ranked by participants with SCI.

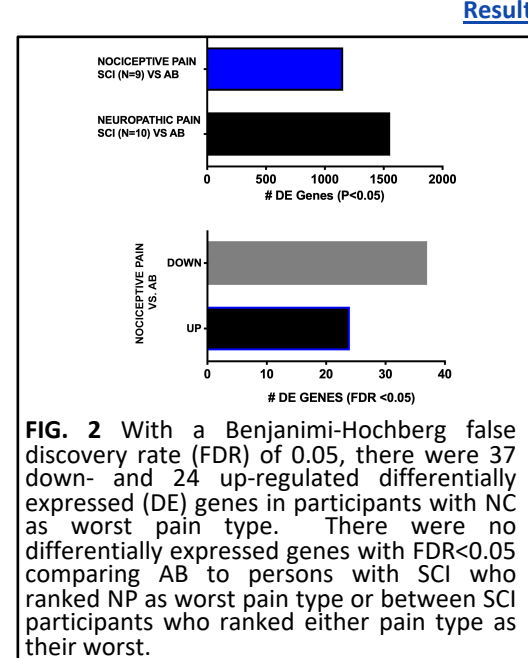
**Design:** Prospective, observational study



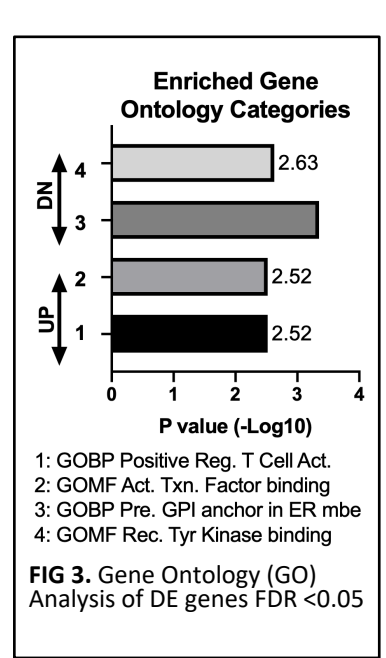
**FIG. 1:** A. Experimental design. B. The International SCI Basic Pain Data Set.<sup>6,7</sup>

NC=Nociceptive  
NP=Neuropathic

Results		
Characteristics		Chronic SCI
Participants	N (Male, Female)	31 (25, 6)
Age (years)	Mean ± SEM, Median (Range)	55.1 ± 2.8, 56 (21 – 80)
Years Post Initial Injury	Mean ± SEM, Median (Range)	15.7 ± 2.3, 16 (1 – 44)
Mechanism of Injury	Fall, MVA, Sports, Violence, Other (N)	10,7,10,3,1
AIS Grade	A, B, C, D (N)	16, 2, 4, 9
Injury Level	Cervical, Thoracic, Lumbar (N)	18, 11, 2
Pain of Any type	Yes, No (N)	21,10
Worst Pain Problem	NC, NP, Other (N)	10,9,2



**FIG. 2** With a Benjamini-Hochberg false discovery rate (FDR) of 0.05, there were 37 down- and 24 up-regulated differentially expressed (DE) genes in participants with NC as worst pain type. There were no differentially expressed genes with FDR<0.05 comparing AB to persons with SCI who ranked NP as worst pain type or between SCI participants who ranked either pain type as their worst.



- 1: GOBP Positive Reg. T Cell Act.
- 2: GOMF Act. Txn. Factor binding
- 3: GOBP Pre. GPI anchor in ER mbe
- 4: GOMF Rec. Tyr Kinase binding

**FIG 3.** Gene Ontology (GO) Analysis of DE genes FDR <0.05

**Conclusions**  
T-Cells should be further investigated in nociceptive pain after SCI

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