HOFSTETTER LAB

UW Medical Center, Room RR715, Hofstetter Lab

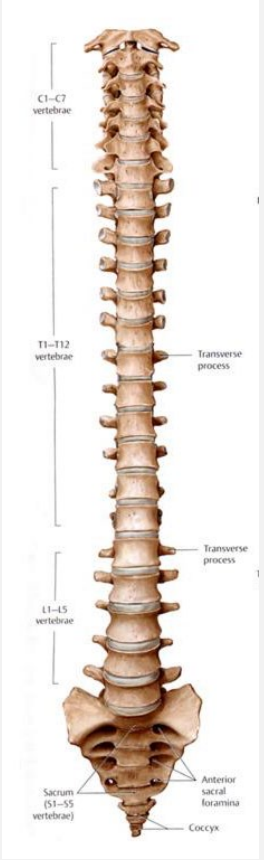
By Aubrey Sonnenfeld

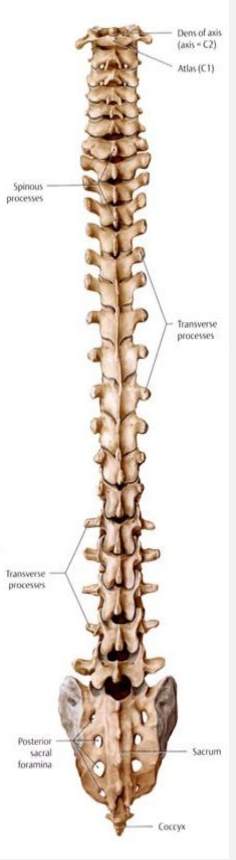
ABOUT THE LAB

Lab focus is <u>enhancing functional recovery</u> after SCI by lowering *intraspinal pressure*

Perturbations

- Surgeries
- Therapeutics



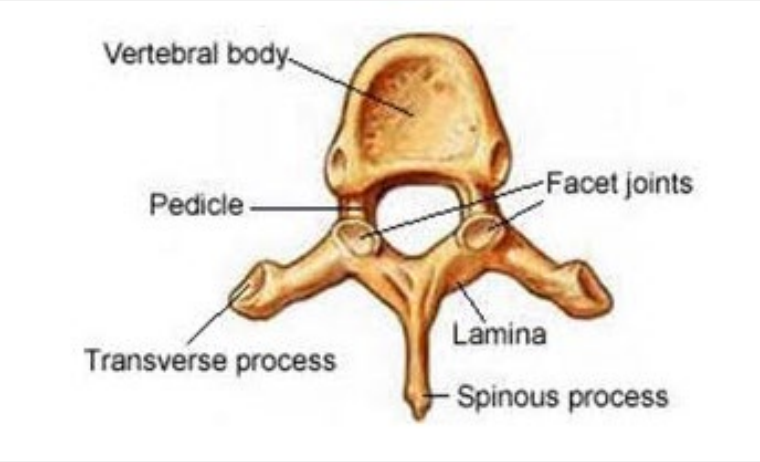


MY EXPERIENCES

- Lab Surgery Assisting
- Animal Behavioral Testing
- Antibody staining
- OR Surgery Observations

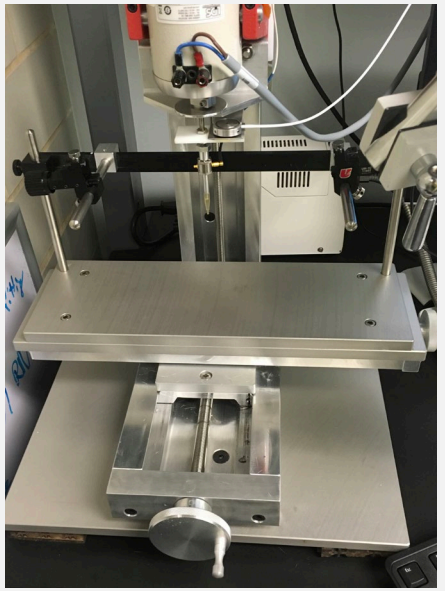
LAB SURGERY ASSISTING

Laminectomy- Remove the spinous process and the lamina on each side of the spinal cord around thoracic bone 7 and 8.



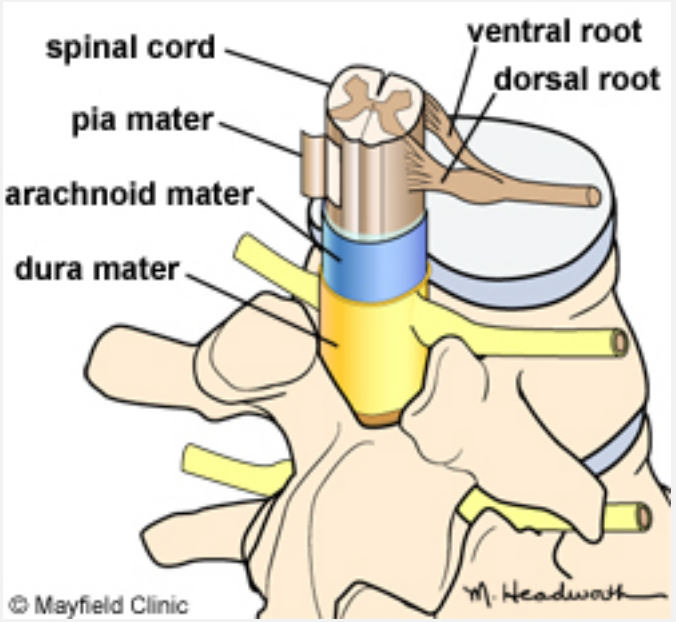
Lesion (injury) Only- Perform laminectomy, then contuse the spinal cord with a probe at 0.8mm displacement.

Duratomy- Perform laminectomy, contuse the spinal cord with a probe at 0.8mm displacement then cut through the dura mater.



MORE SURGERY ASSISTING

Myelotomy- Perform laminectomy, followed by contusing the spinal cord with a probe at 0.8mm displacement then cut through the dura and pia mater.



Purpose -- determine which surgical manipulation (ie., duratomy or myelotomy) would have the best anatomical and functional recovery.

What I learned : Sterile tools are very important

ANIMAL BEHAVIORAL TESTING

Testing the animals functional recovery

BBB Testing (motor) - Place animals in an arena for four minutes, observe walking habits, paw placement, tail/trunk orientation

Cat Walk (motor) - Place animals on a pathway that captures the footprint placement in order to assess gait and locomotion

Von Frey (sensory)- Place animals in a cage with a wire bottom, prick the bottom of their back paws with different forces to test the rodents withdrawal threshold

IMMUNOHISTOCHEMISTRY

Testing the animals anatomical recovery

Antibody staining in order to detect proteins of interest

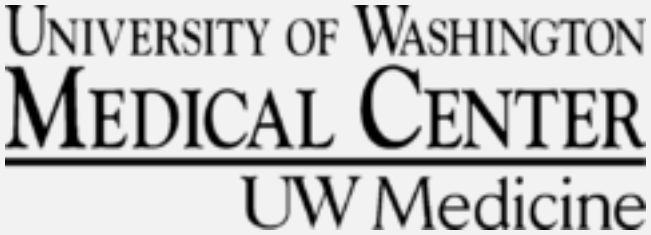
- GFAP (astrocytes)
- ED1 (activated microglia)
- Iba1 (all mircoglia)
- CCR7 (M1 type macrophage)
- Arginase 1 (M2)

What I learned : Controls are essential in creating a quality staining

OR SURGERY OBSERVATIONS

Seattle Children's Hospital:
Observed Dr. Samuel Browd
July 6, 2016

University of Washington Medical Center:
Observed Dr. Christoph Hofstetter
July 18, 2016



Harborview Medical Center:
Shadowed Dr. Rapport
July 29, 2016

What I learned : I am extremely interested in medicine related to surgery

THANK YOU

The Program:

Dr. Ellenbogen, Jim Pridgeon, Christina Buckman

The Speakers:

Friday lunch lectures and grand rounds

Hofstetter Lab:

Dr. Christoph Hofstetter, Zin Khaing, Lindsay Cates, and Dane Dewees

The Grant:

Summer Research Experience in Translational Neuroscience and Neurological Surgery

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