

# Learning With A Concussion

○ ————— ○  
(And Other Oxymorons)



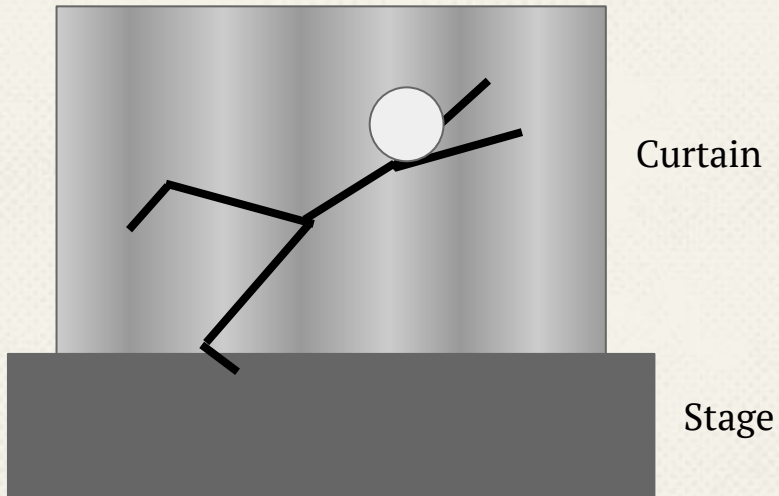
← Google Slides link

<http://tiny.cc/colin-concussion>

# HOW IT HAPPENED

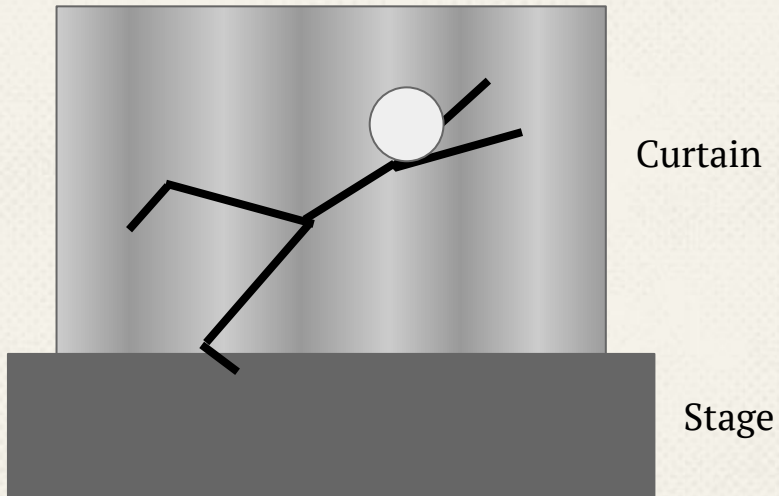


# HOW IT (ACTUALLY) HAPPENED

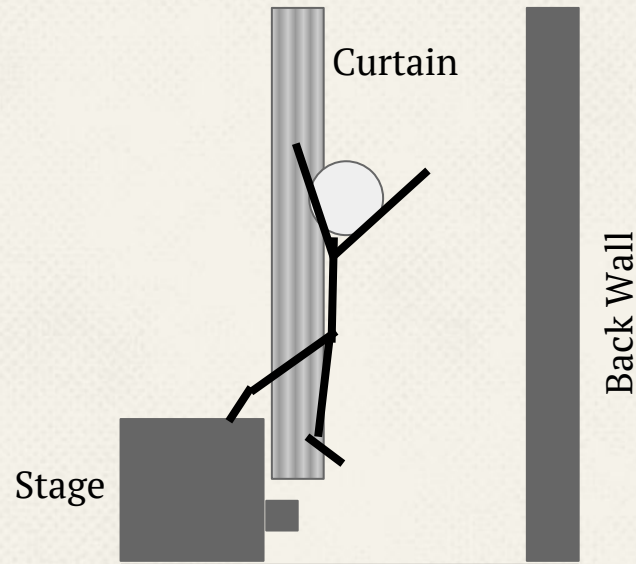


**Front View**

# HOW IT (ACTUALLY) HAPPENED

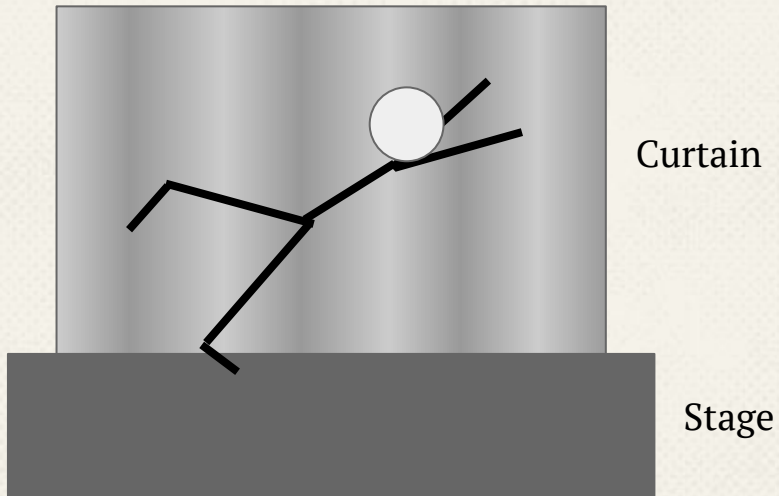


**Front View**

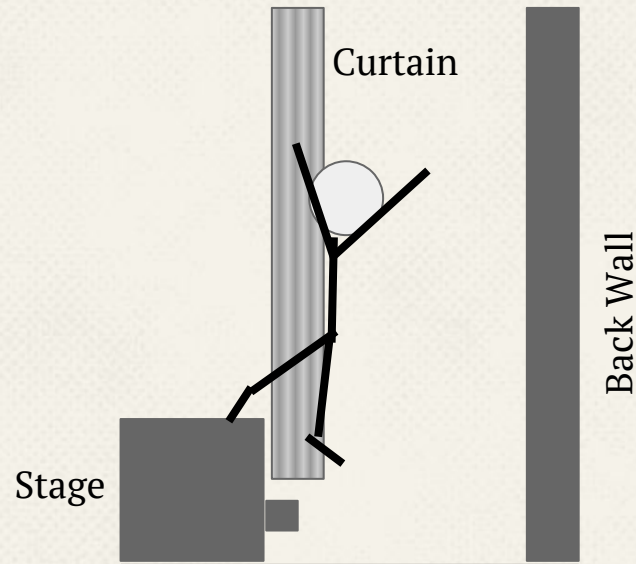


**Side View**

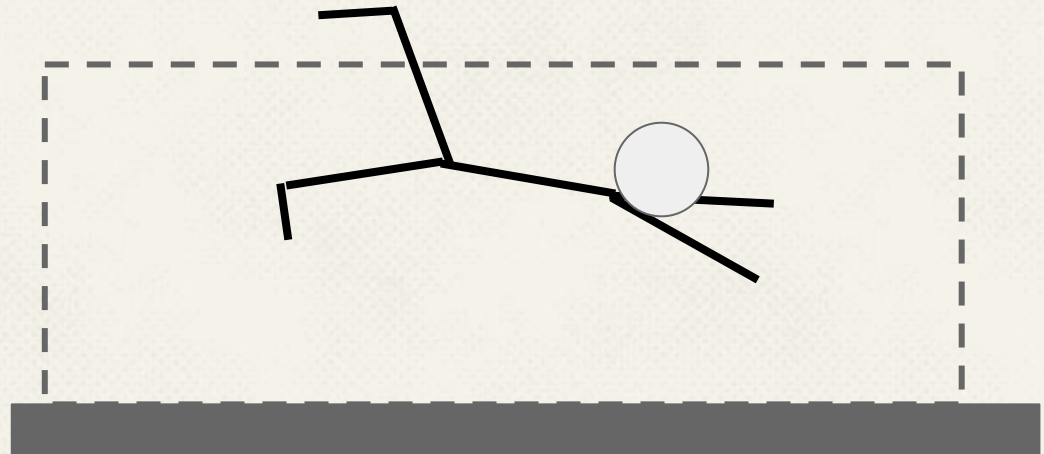
# HOW IT (ACTUALLY) HAPPENED



**Front View**



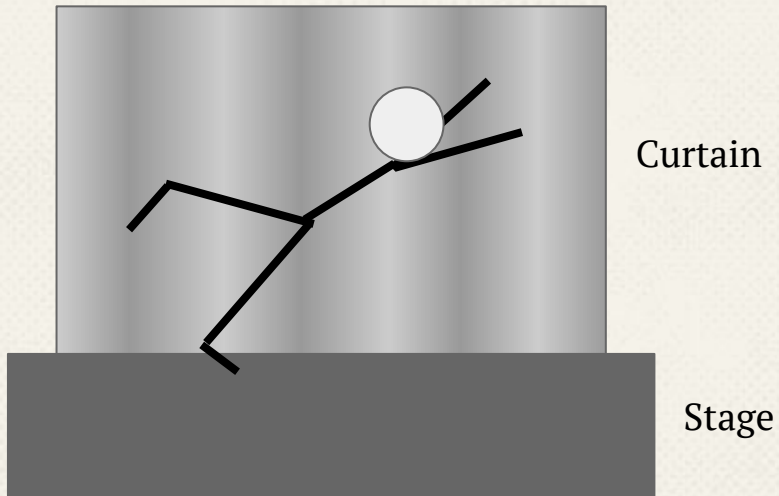
**Side View**



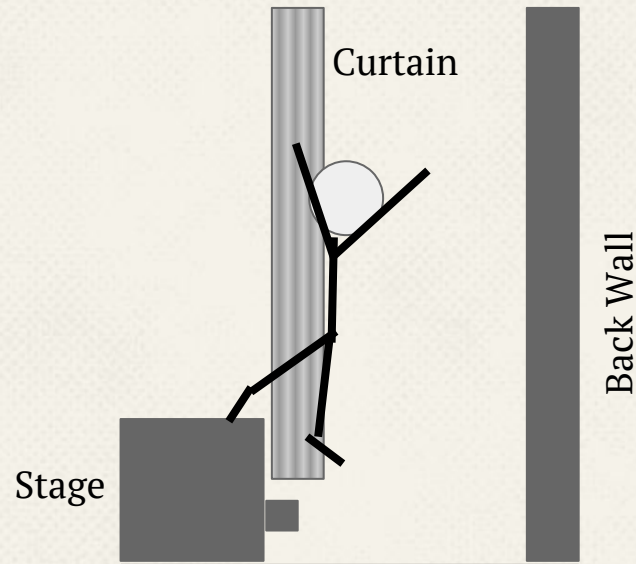
**Cutaway (in process)**



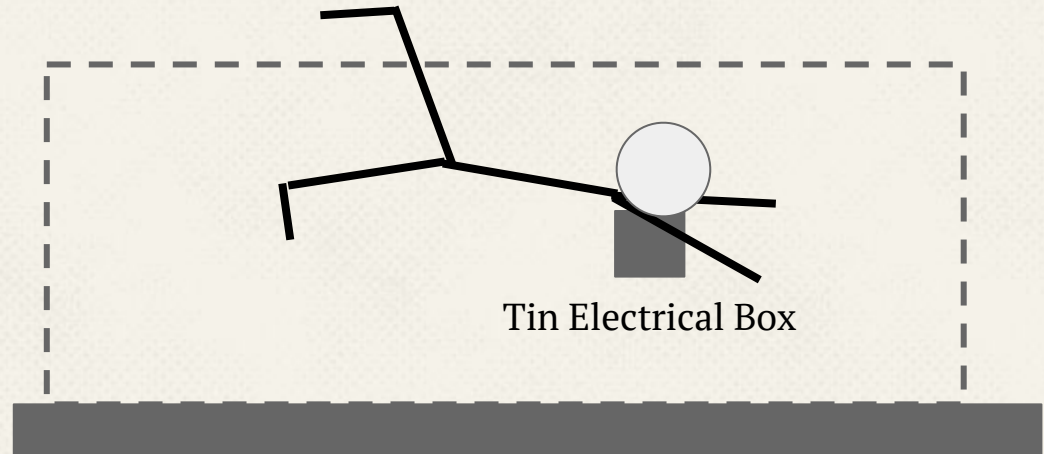
# HOW IT (ACTUALLY) HAPPENED



**Front View**

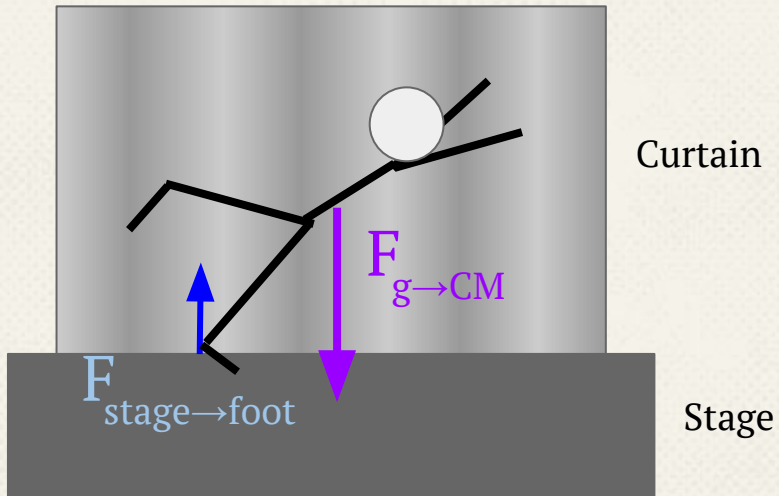


**Side View**

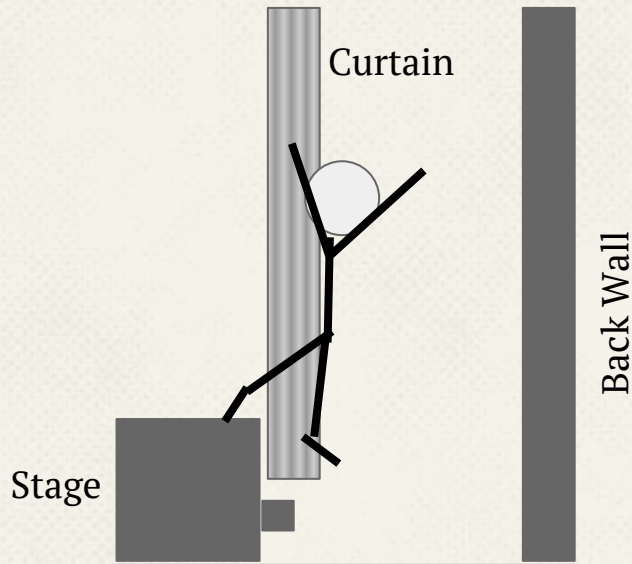


**Cutaway (in process)**

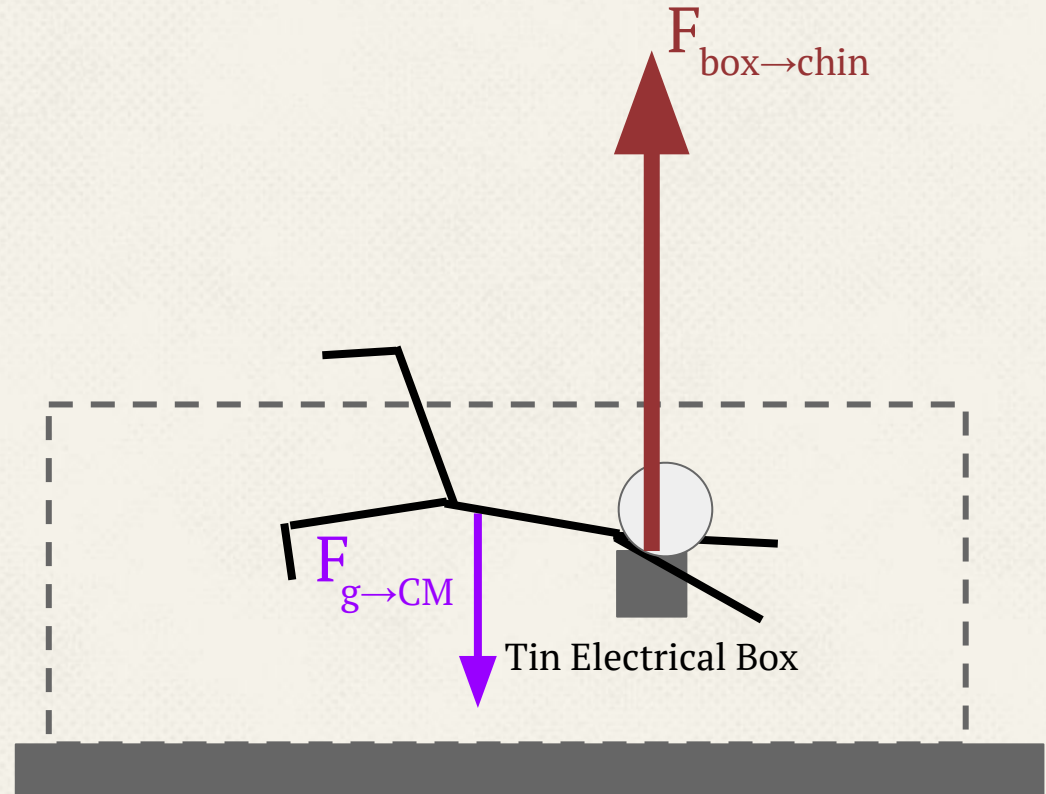
# HOW IT (ACTUALLY) HAPPENED



Front View



Side View



Cutaway (in process)

# Terminology

Concussion → Traumatic Brain Injury (TBI)

All concussions are brain injuries.



## After a TBI, avoid...

- Screen time
- Reading
- More than minimal cognitive load
- Exercise
- Hiking
- Drinking

## So what's left?

- Listening to podcasts (sometimes)
- Walking on flat terrain
- Small talk
- Cooking
- Cleaning
- Sleep

# Addressable Symptoms

- **Cognitive Impairment**
  - *Unable to learn new things*
  - Limited metacognition
  - Unable to filter out distractions
  - Unable to remember or plan
  - Cannot think quickly
- **Headaches**
  - Light-induced
  - Cognitive-load-induced
- **Depression**



*My symptoms changed,  
unpredictably, every few days.*

# Cognitive Load Impairment

- **If removed from class...**
  - No homework, no reading.
  - And no “sprinting” to make it up later, either.
- **Once tolerating cognitive load...**
  - Expect slowness and allow breaks.
  - Assign reading buddy.
  - Minimize interconnection activities.
  - Allow extra time on quizzes.
- **Food is important**
  - Blood sugar, protein, caffeine, water, salt.



# Things that Don't Work

- **Screen-Reader software**
  - JAWS, VoiceOver, etc. to quickly read text from screen and control computer
  - It really is a *cognitive* issue, not just visual processing.
- **“Work until you get a headache, then stop.”**
  - Decision-making is impaired. Plan to stop as soon as symptoms arise.

# Headache

## Amplification through Stimulated Emission of Radiation

---

- **No screens**

- Print handouts for students.
- Don't e-mail concussed people.

- **Control your light**

- Incandescent > Fluorescent > LED
  - No idea why. Brain response to blue spectra?
- Shadows and contrast matter.
  - No directionless lights, but no point sources either.  
Again, no idea why. Brightness mattered less.
- Flickering lights no good.

# User-Controlled Light Adjustment

**Tinted Glasses**  
(Gunnar, Zenni)



**Screen Temperature Adjusters**  
(Flux, Twilight)



# Depression

Ask them if they've lined up a therapist yet.

Tell them how much it helped me.

# EVERY RECOVERY IS DIFFERENT.

---

*I'm not at 100% after a full year.*

*Be very, very patient.*

*Believe no timelines.*



---

# CREDITS

---

Thank you to Harvard and my family for being understanding and supportive during my recovery.

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by SlidesCarnival
- Backgrounds by SubtlePatterns

# Typical Symptoms

## Bad

- Slow thoughts
- Headache
- Ringing Ears
- Seeing stars

## Very Bad

- Inappropriate responses
- Change in behavior
- Stumbling

## So Very Bad

- Temporarily unconscious
- Amnesia about event
- Vomiting
- Seizures

*Immediately*  
*Later*

- Dazed
- Fatigued
- Head bump

- Visual disturbances
- Cognitive difficulties

- Symptoms get worse