NSCA®
NATIONAL STRENGTH AND CONDITIONING ASSOCIATION

2019 NSCA PERSONAL TRAINERS VIRTUAL CONFERENCE

OCTOBER 7 – 11

#NSCAPT19

Squat and Deadlift Assessment: Hip(s) to be Squared

Tony Gentilcore, CSCS

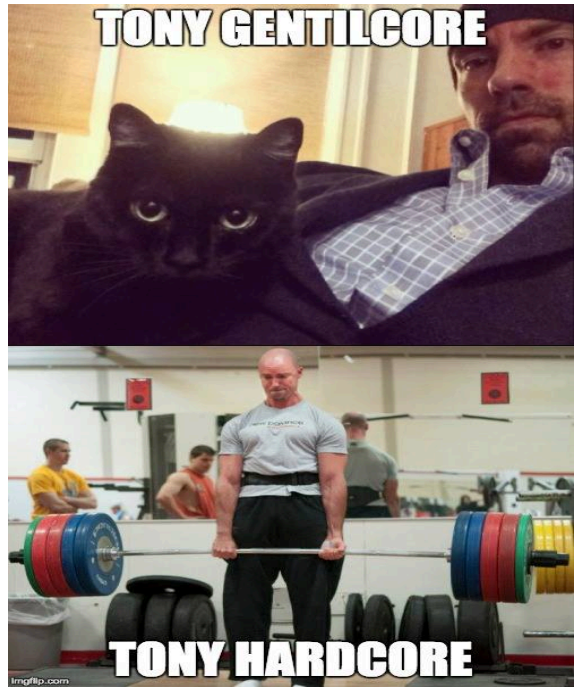
CONFLICT OF INTEREST STATEMENT

I have no actual or potential conflict of interest in relation to this presentation.

I'm, Like, Super Important

Brief History:

- BA Health Education
- Co-Founder Cressey Sports Performance (2007-2015)
- CORE (2015 – Present)
- I write stuff



Likes:

- Lifting Heavy Things
- Cheese
- Jason Bourne
- Kitty Cuddles
- 90's Hip-Hop

Dislikes:

- Talking About Feelings

You'll Be Smarter in 30 Minutes Because…

- You'll understand and respect anatomical variances with regards to squat & deadlift set-up and execution.

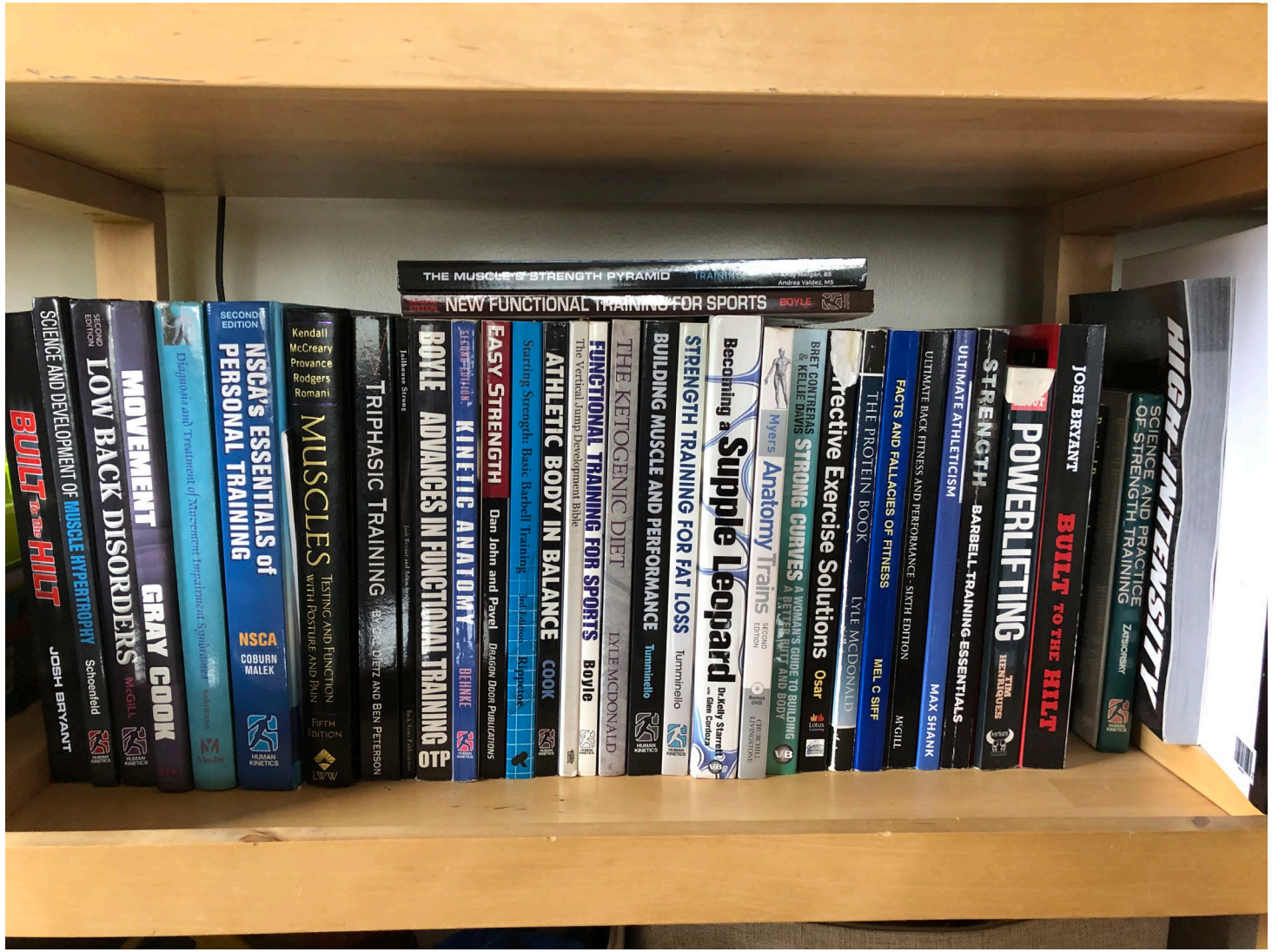
- You'll Understand Passive vs. Active Assessment and how both can help navigate programming considerations for every client

A Nod to Those Who's Info I'm "Borrowing"

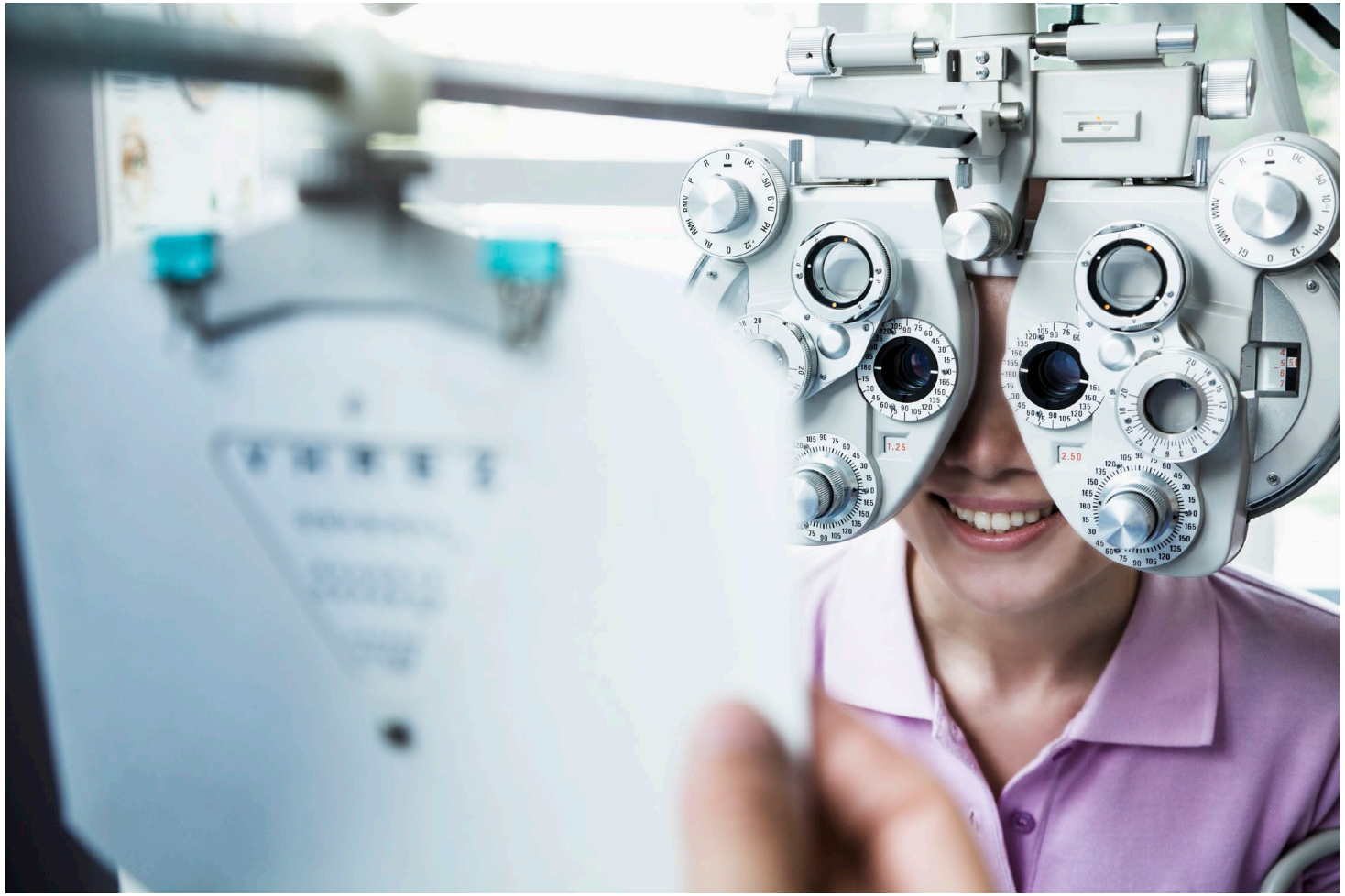
Wink-Wink

- Dr. John Rusin
- Dr. Ryan DeBell
- Dean Somerset
- Sue Falsone
- Dr. Stuart McGill
- Alex Kraszewski
- Bret Contreras
- Han Solo

Textbook Technique Doesn't Exist



What's Happening Here?



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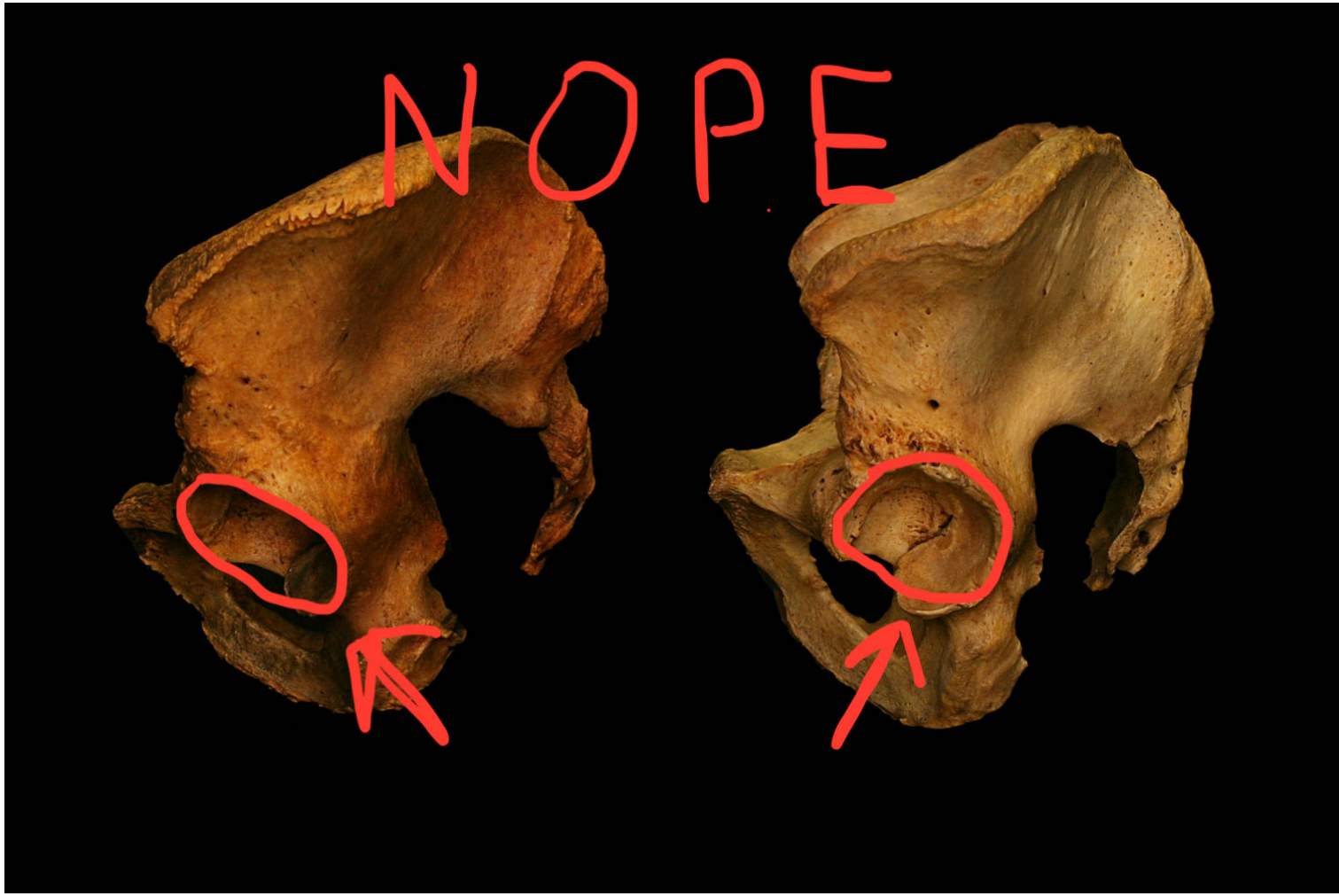
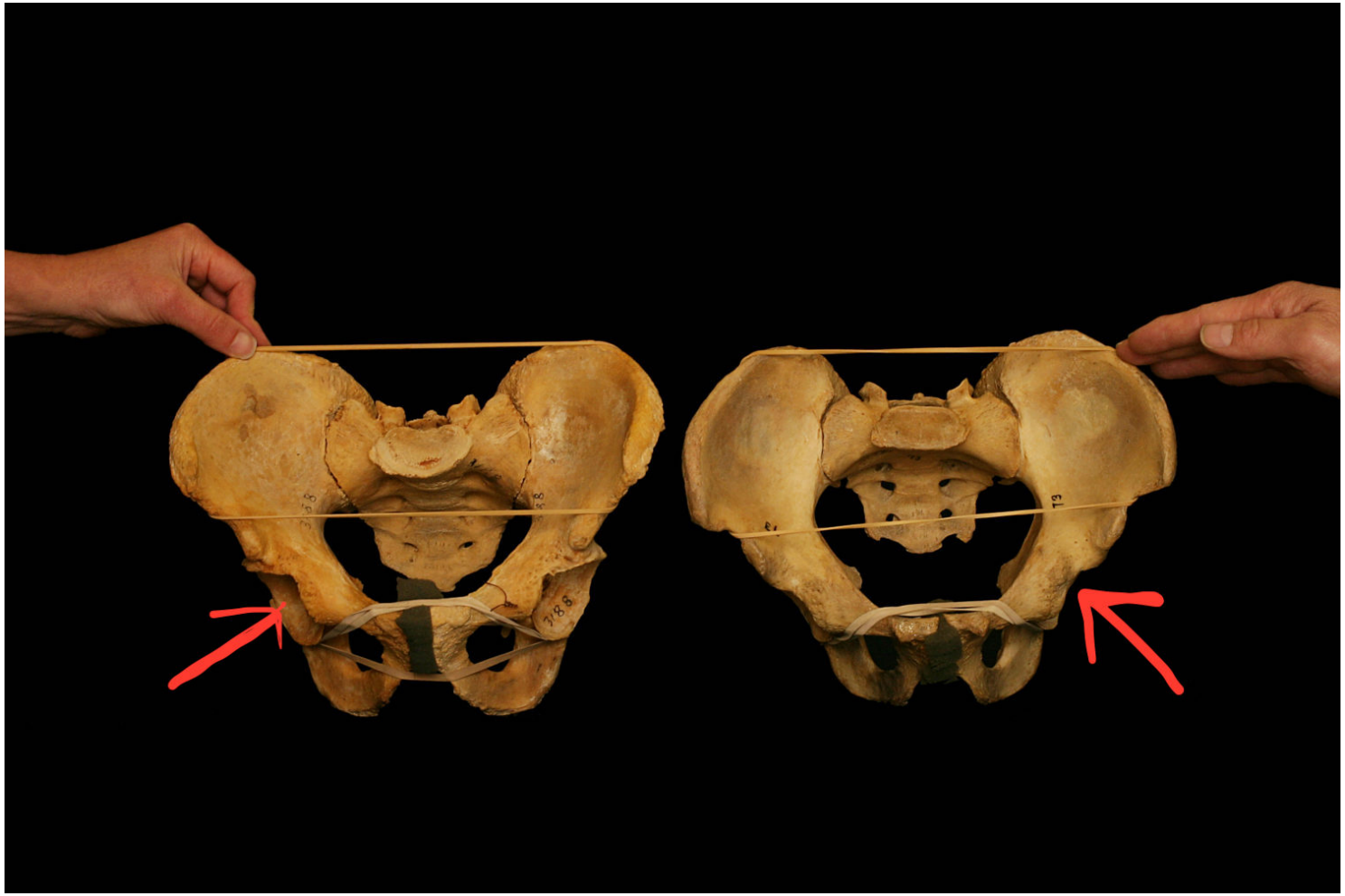
Should These People Squat & DL the Same?



Courtesy: PaulGrilley.com

Hip Socket Location



Courtesy: PaulGrilley.com

Femoral Neck Torsion

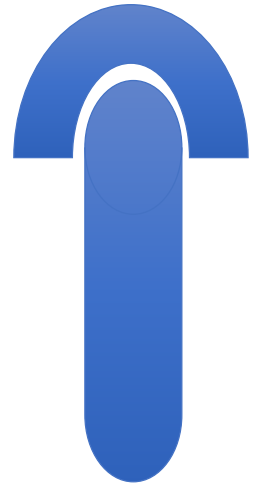
Courtesy: PaulGrilley.com

Motion Diameter

Shallow Socket
Thin Femoral Neck

Big Cone Diameter

Thick Socket
Thick Femoral neck



Small Cone Diameter

Alignment Affects ROM

Ross et al (2014), AJSM, vol 42, 10: 2402-2409

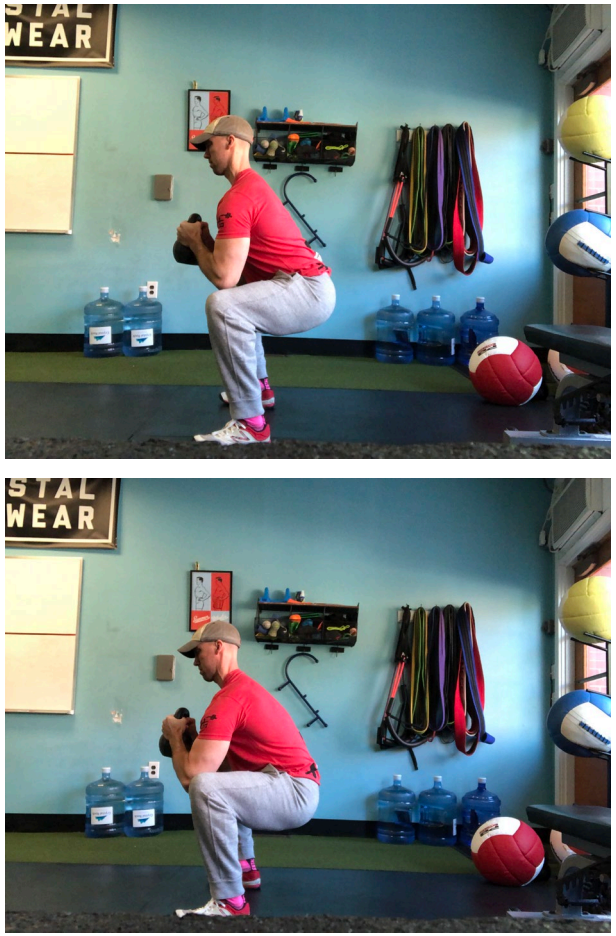
- 3D Modeling of Pelvic Motion from x-rays of 50 subjects showed increase in anterior pelvic tilt of 10 degrees…

- Decreased Flexion by 6 Degrees
- Decreased Hip IR by 15 Degrees
- Decreased Adduction by 8.5 Degrees
- Increased Contact With Positions of Impingement

How Is This Relevant?

- Posterior tilt increased these ROMs
- Decreased Impingement Contact

Trunk Posture and Hip Flexion



- More anterior tilt may require more spinal motion during squatting exercises.
- “Nudge” people with more posterior tilt TOWARDS neutral

Your Eyes Are Actually a Splendid Assessment Tool – Use Them.

Position Affects Load

Lumbar spine loads during the lifting of extremely heavy weights

J. CHOLEWICKI, S. M. MCGILL, and R. W. NORMAN

	Sumo ($N = 21$)	Conventional ($N = 36$)
Barbell load (kg)	205.5 (SE = 5.4)	208.5 (SE = 5.5)
L4/L5 moment* (N.m)	565.5 (SE = 20.6)	626.0 (SE = 20.3)
Disc compression (N)	10,405 (SE = 349)	10,738 (SE = 342)
Load shear* (N)	2397 (SE = 43)	2602 (SE = 43)
Joint shear (N)	1530 (SE = 53)	1643 (SE = 52)

All of This to Say…

I'm Not a Wizard

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Active & Passive Assessment Crucial

- Gives us information.
- Do They Match?
- If Not: Stability or Mobility Issue?

What's the Point?

- Everyone is different
- Not Everyone is going to Squat or DL the same way
  - Depth, stance, etc
- Forcing ROM on someone who can't achieve it is going to result in bad things.
  - Like a baby seal dying.
- Experiment with foot position, width, depth, front/back alignment is necessary to see what the best fit is

Thank You!

- www.TonyGentilcore.com