



# COMBAT THE EFFECTS OF PROLONGED SITTING: A HEALTHIER DAY AT WORK OR SCHOOL

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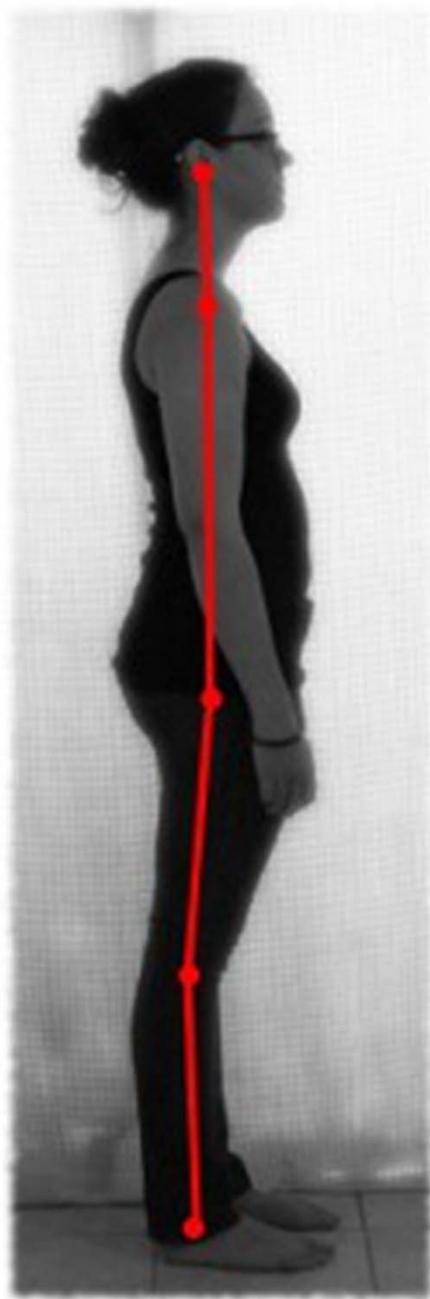
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# What is Posture?

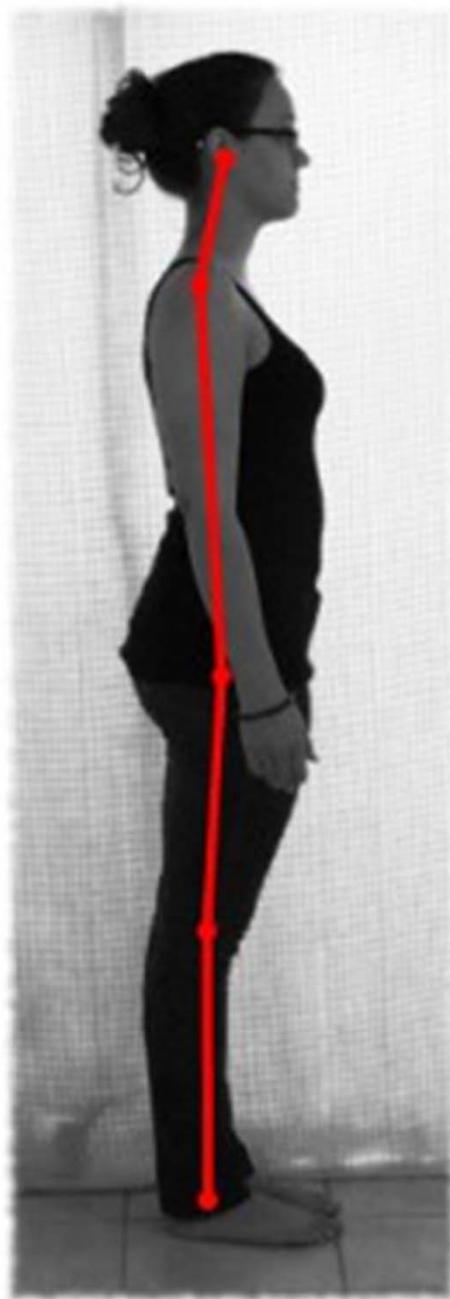


# What is Posture?

- Describes both biomechanical alignment as well as orientation of the body to the environment
- Serves as a reflection of neuromuscular status
- ***Never Static!***



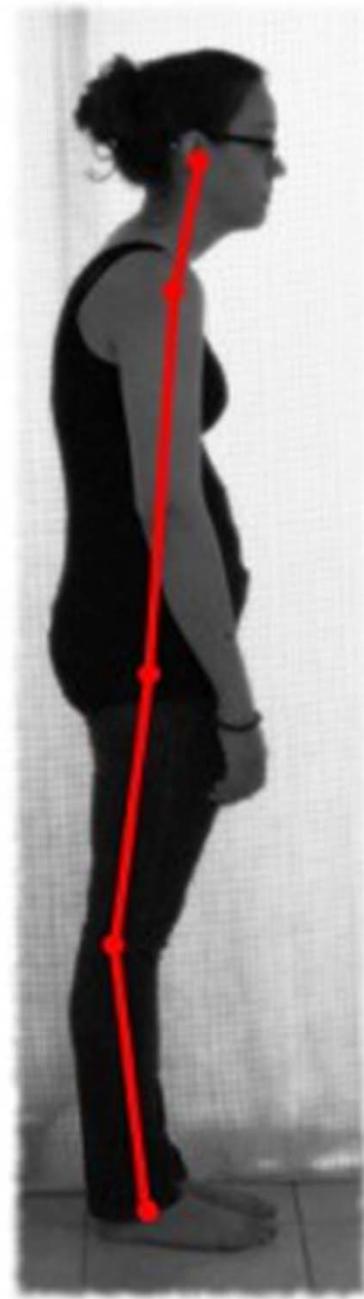
A. Ideal Posture



B. Standing at Attention



C. Sway back



D. Forward Head

# How Important is Our Posture?

- Lennon et al have hypothesized that posture affects and moderates **every** physiologic function from breathing to hormonal production

# What is Ideal Posture?

- **Good posture can be defined as:**
  - State of muscular and skeletal balance that protects the body against injury or progressive deformity
- **Poor posture can be defined as:**
  - Faulty relationship of the body's segments resulting in increased strain and less efficient balance of the body over its BOS



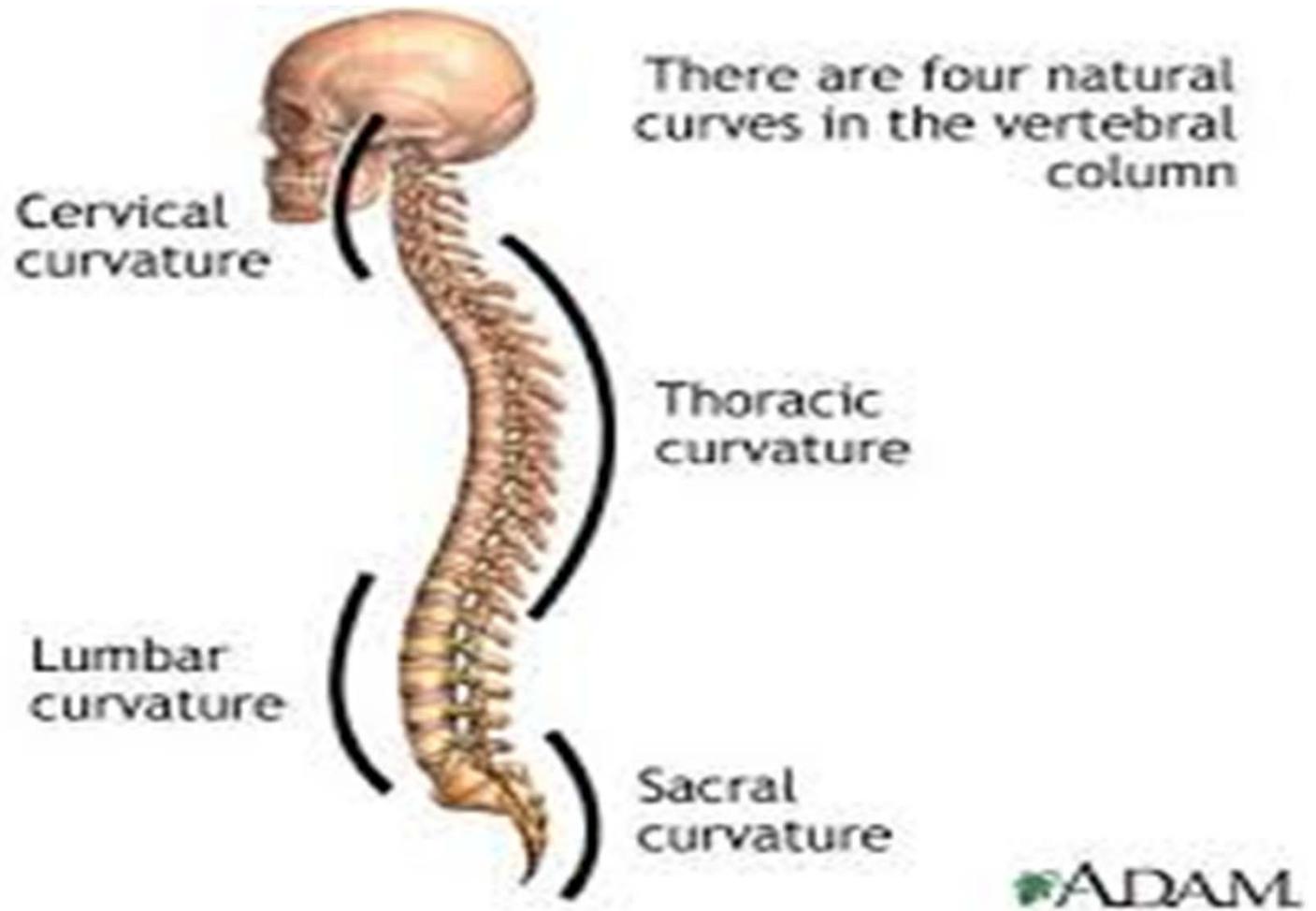
# Sit Up Straight!

- **Faulty posture has been linked to:**
  - Tension-type HA
  - TMJ disorders
  - Shoulder impingement syndrome
  - Respiratory dysfunction
  - Back pain
  - Impaired balance
  - Fibromyalgia
  - Osteoporotic spinal deformity

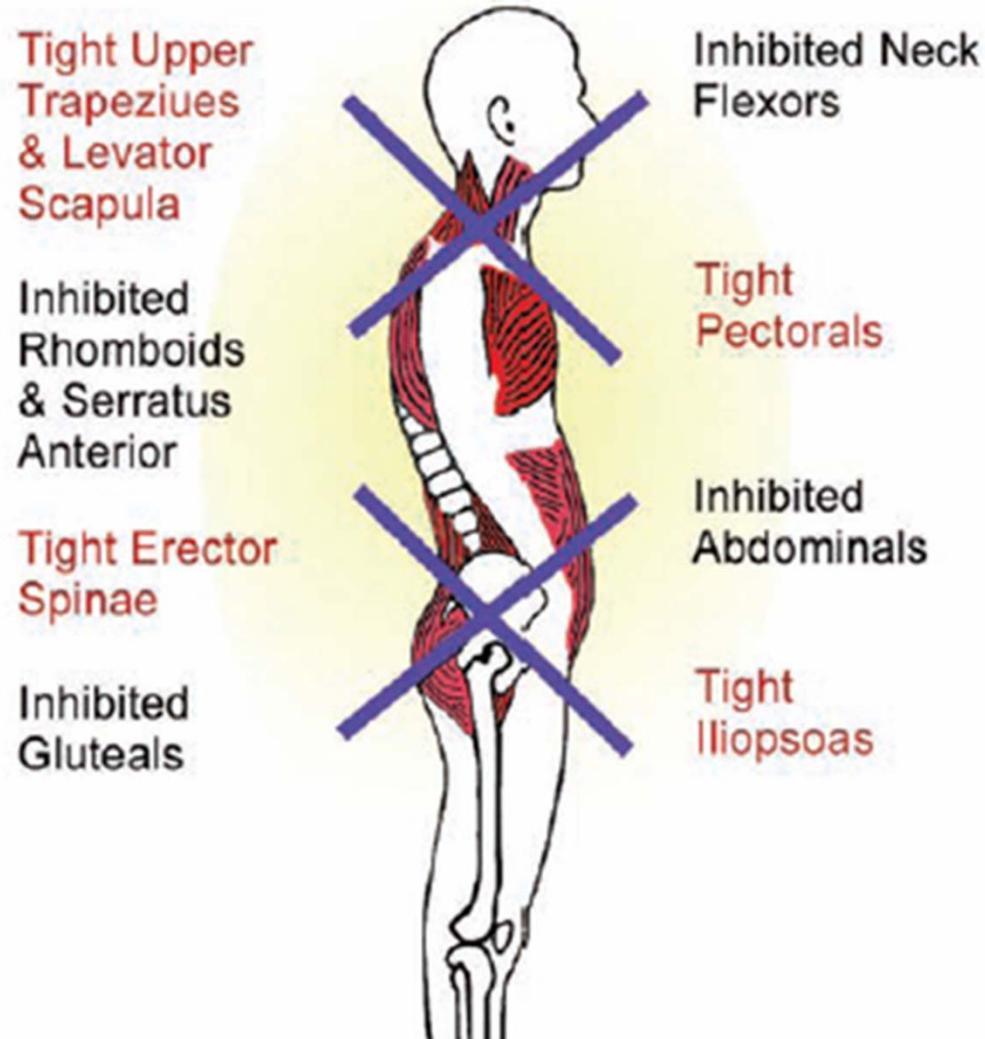
# Posture and the Musculoskeletal System

- The natural curves of the spine are considered to be either ***lordotic or kyphotic***
  - *cervical lordosis, thoracic kyphosis, lumbar lordosis*
- If any one of these curves is missing or exaggerated, the end result is poor posture

# The Spinal Curvatures

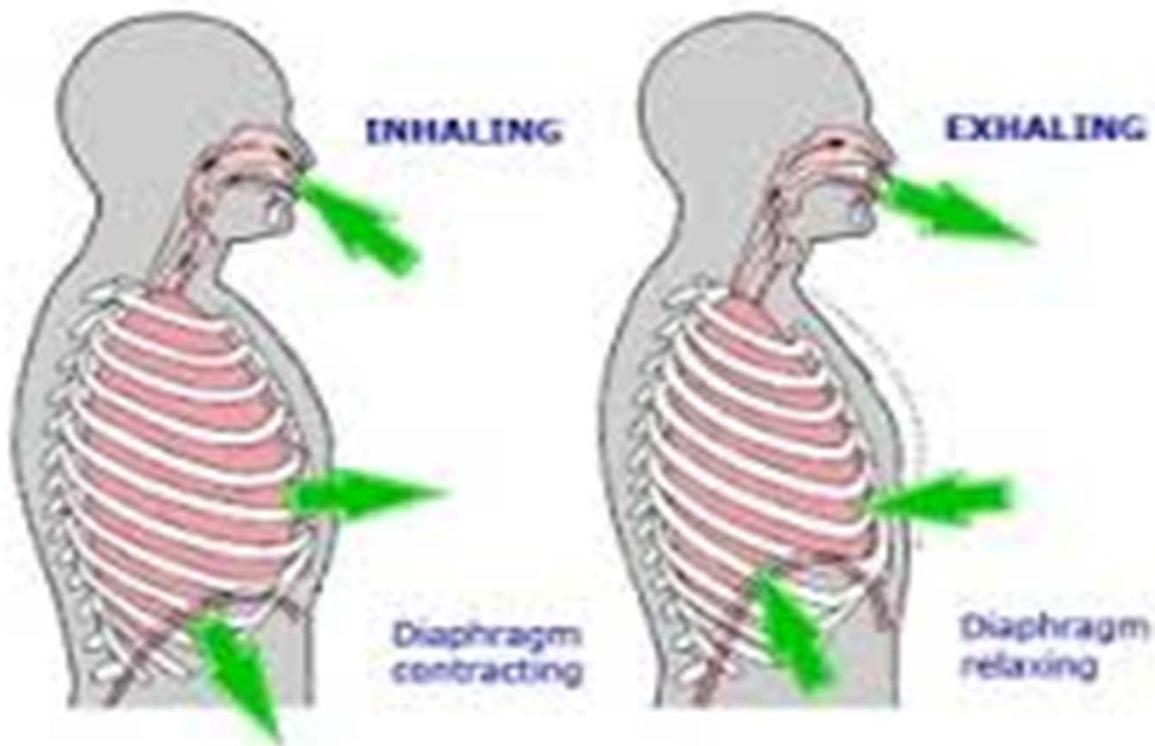


# Posture and the Musculoskeletal System: Crossed Posture Syndrome



# Posture and Respiration

- Body posture and the flexibility of the thoracic cage greatly affect the quality of breathing



# Posture and Respiration

- Austin and Ausubel found that a course of proprioceptive musculoskeletal education improved both respiratory muscular strength and endurance ***without any respiratory exercise***
- McMaster et al found a correlation between *increasing severity of kyphosis and respiratory impairment* in patients with congenital vertebral anomalies

# Negative Effects of Sitting

- “Today, our bodies are breaking down from obesity, high blood pressure, diabetes, cancer, depression and the cascade of health ills and everyday malaise that come from what scientists have named ***sitting disease***”
  - *James Levine, MD, PhD*
- **On Average, we sit 7.7 hours a day**
  - Some estimate people sit up to *15 hours per day*

# The Negative Effects of Sitting

- 2010 study published in the *American Journal of Epidemiology* followed 123,216 individuals from 1993-2006 and found:
  - *Women who were inactive and sat over 6 hours per day were **94% more likely to die** than those who were physically active and sat less than 3 hours per day*
  - *Men who were inactive and sat over 6 hours per day were **48% more likely to die** than their more active counterparts*

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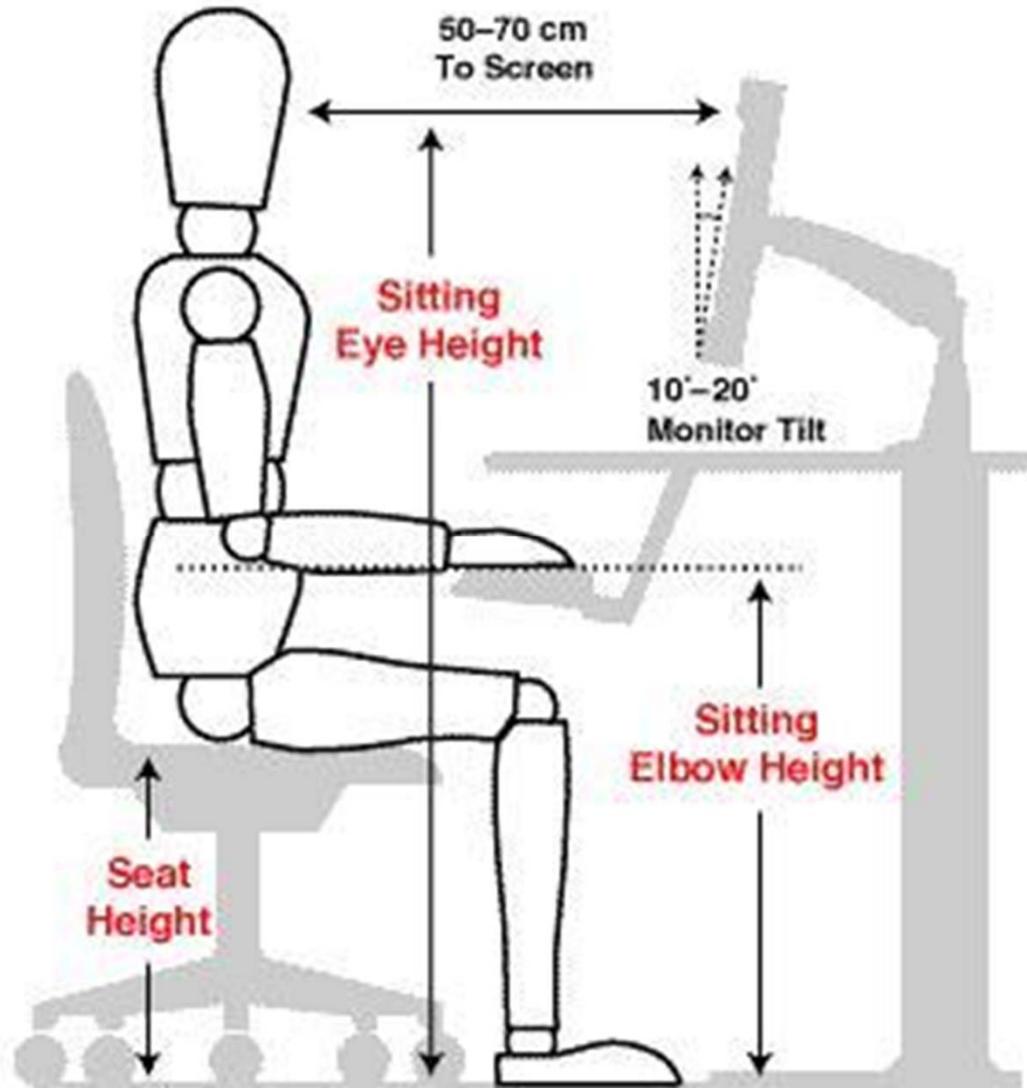
# Where Do We Go From Here?



# How Do We Combat the Effects of Prolonged Sitting

- **Make sure your workstation is set up appropriately**
- **Practice “setting” your posture throughout the day**
- **Stand up or walk around as frequently as you can**
- **Stretch what’s tight, strengthen what’s weak**

# Workstation Ergonomics



# “Setting” Your Posture

A



B



C



PELVIC GIMBLE

# Easy Ways to Stand/Move More

- **Walk more**

- Park your car farther away from your office, use stairs not elevators, take a longer route to the restroom or to class

- **At your desk**

- Set a timer to remind you to stand up and stretch or walk around every thirty minutes

- **On the phone**

- Stand up while taking phone calls

# Easy Ways to Stand/Move More

- **Emails**

- Don't send emails if the recipient is near; walk over and talk to them instead

- **Commuting**

- Avoid long sitting commutes by standing on the bus, subway, or train

- **Watching TV**

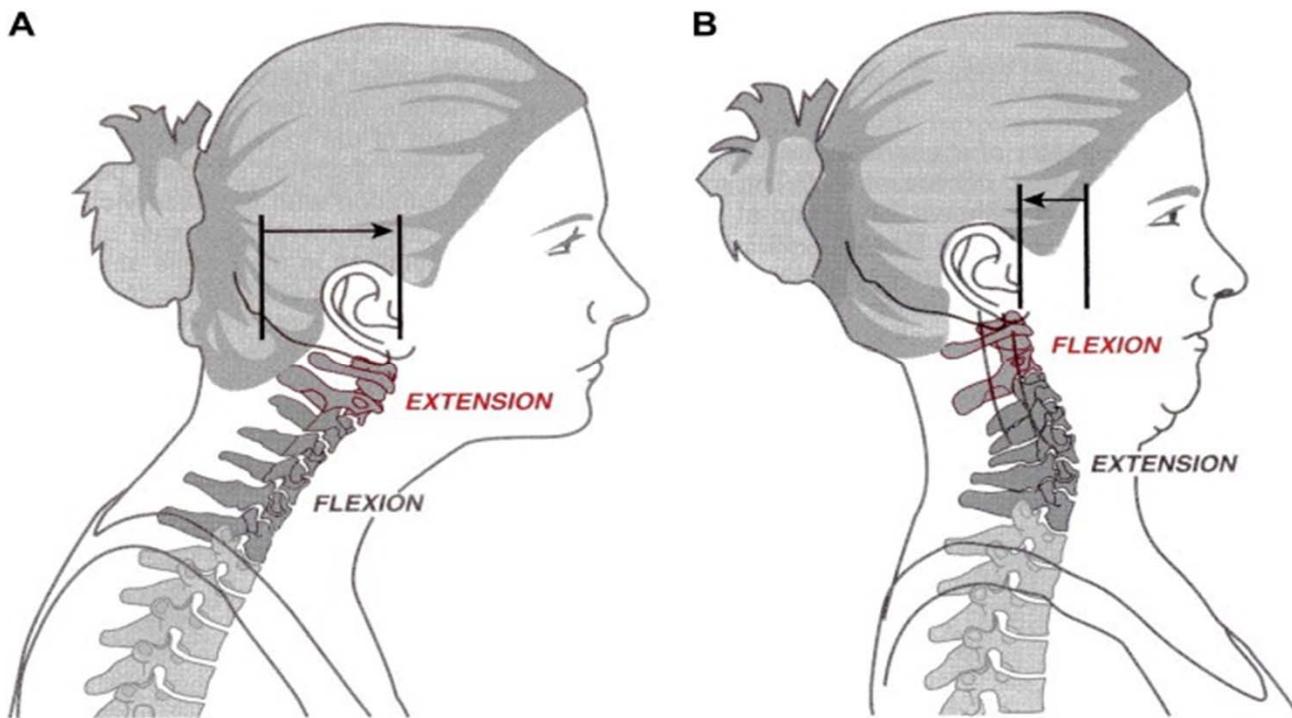
- Lose the remote; get up to change the channels
- Stand and stretch during commercial breaks

# Stretch What's Tight, Strengthen What's Weak

- **Try performing these simple exercises periodically throughout the day:**
  - Chin Tuck
  - Crossover Shoulder Stretch
  - Seated Glute Stretch
  - Doorway Pec Stretch
  - Wall Slide
  - Standing Hamstring Stretch

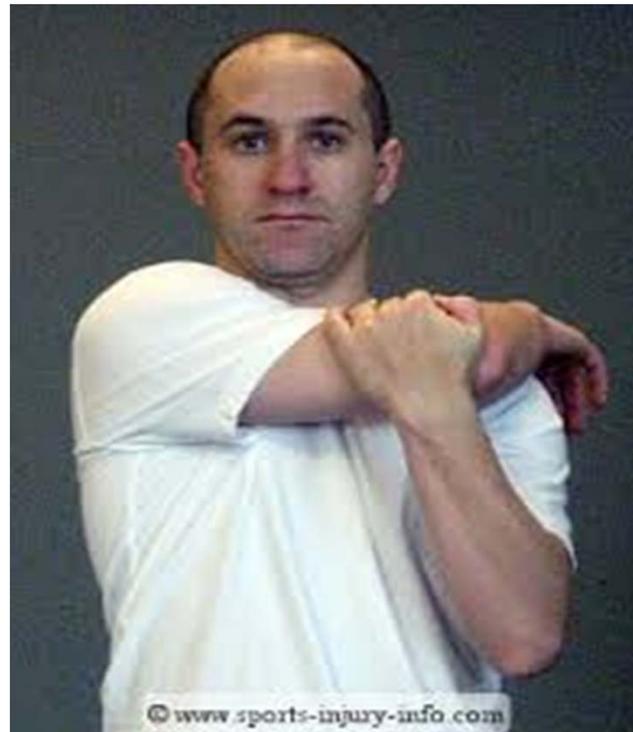
# Chin Tuck

- Stretches posterior neck musculature while also strengthening the deep neck flexors
- Perform 10 repetitions with a 5 second hold



# Crossover Shoulder Stretch

- Stretches the posterior shoulder musculature
- Perform 2-3 rounds of 30 seconds



# Seated Glute Stretch

- Stretches the posterior hip musculature
- Perform 2-3 rounds of 30 seconds



# Doorway Pec Stretch

- Stretches the anterior shoulder musculature
- Perform 2-3 rounds of 30 seconds



# Wall Slide

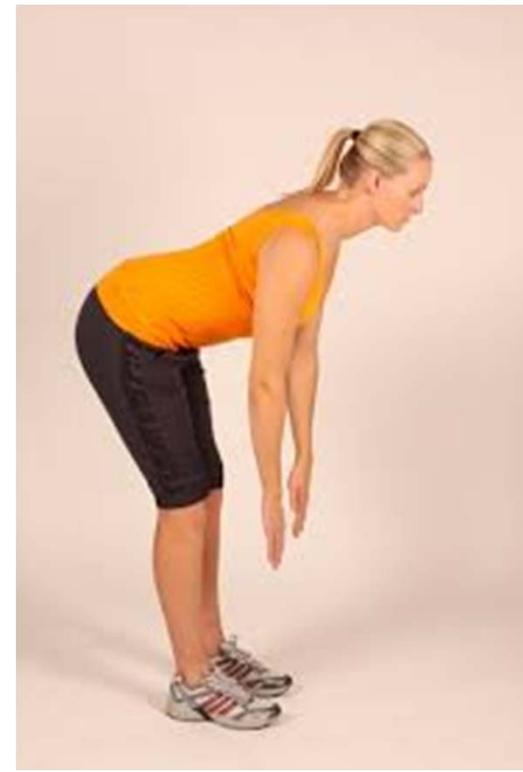
- Stretches and strengthens the upper back musculature while also strengthening the abdominals
- Perform 10 repetitions periodically throughout the day

# Wall Slide



# Standing Hamstring Stretch

- Stretches the posterior thigh and calf musculature
- Perform 2-3 rounds of 30 seconds



# Standing Hamstring Stretch

- DO NOT DO THIS!



# REMEMBER!

- If any of the previously recommended exercises or stretches causes you acute pain, ***DON'T DO THEM!***



# Conclusions

- Poor posture coupled with prolonged sitting can have a negative impact on your overall health
- Fortunately, there is plenty that you can do to help combat the negative effects of prolonged sitting to keep yourself happy and healthy while at work or school