

# Laboratory Ergonomics

## Body Mechanics



# Who is Affected By Ergonomics?

A wide variety of staff are affected by ergonomic issues. Example of these employees include:



**Patient Handlers**  
Clinical Staff  
Radiology  
Patient Transports



**Materials Handlers**  
Laboratory Technicians  
Couriers  
Materials Managers



**Office Staff**  
Administrative Associates  
Call Center Staff  
Claims Representatives

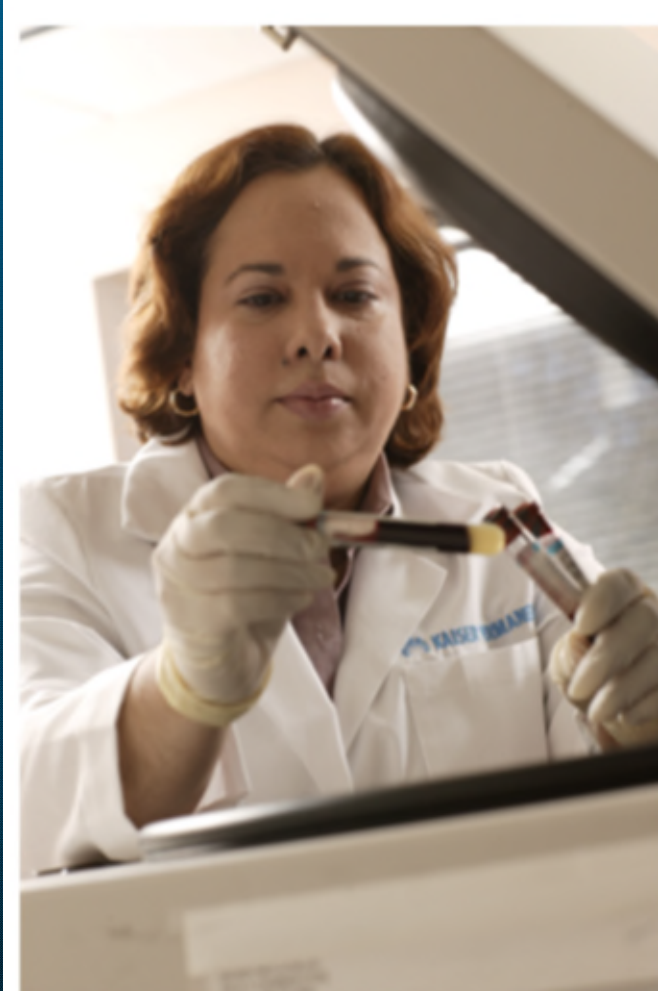
# Phlebotomy

## Draw Stations



# Laboratory Work

Laboratory work can be repetitive and cause musculoskeletal stresses.



Be aware of the following:

- Avoid overreaching, excessive forces on your fingers and sharp counter edges
- Make sure your forearms are supported and avoid holding positions for long periods of time
- Laboratory work can involve very precise work or work that involves high visual demands. Be aware of this and if you feel discomfort, adjust your body position or task
- Pay attention to the height of your workstation

# Materials Handling Body Mechanics

## Materials Handling



Materials Handling ergonomics tasks include

**Lifting and Lowering**

**Carrying or Holding**

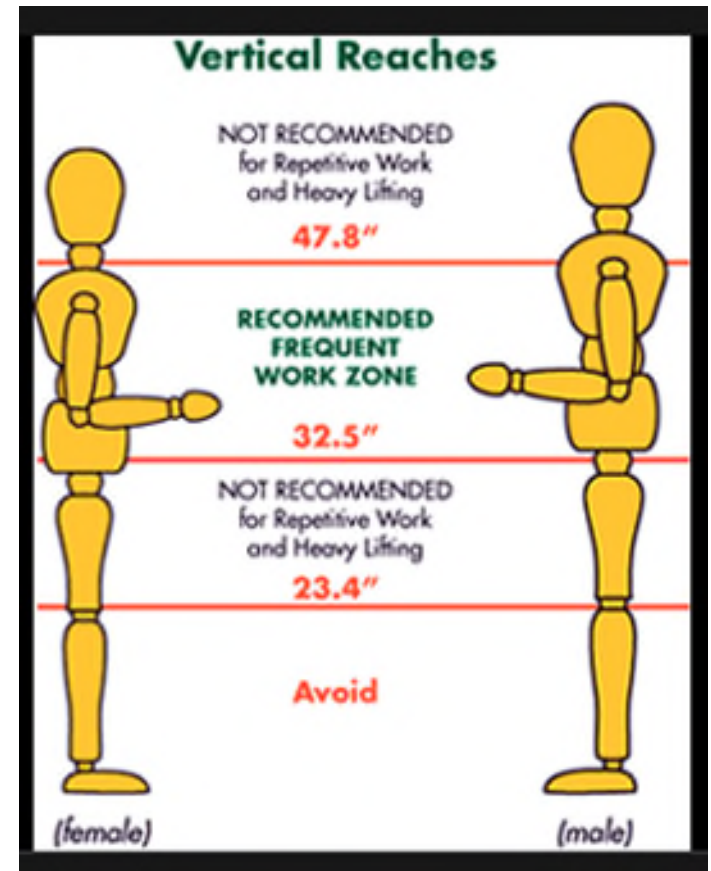
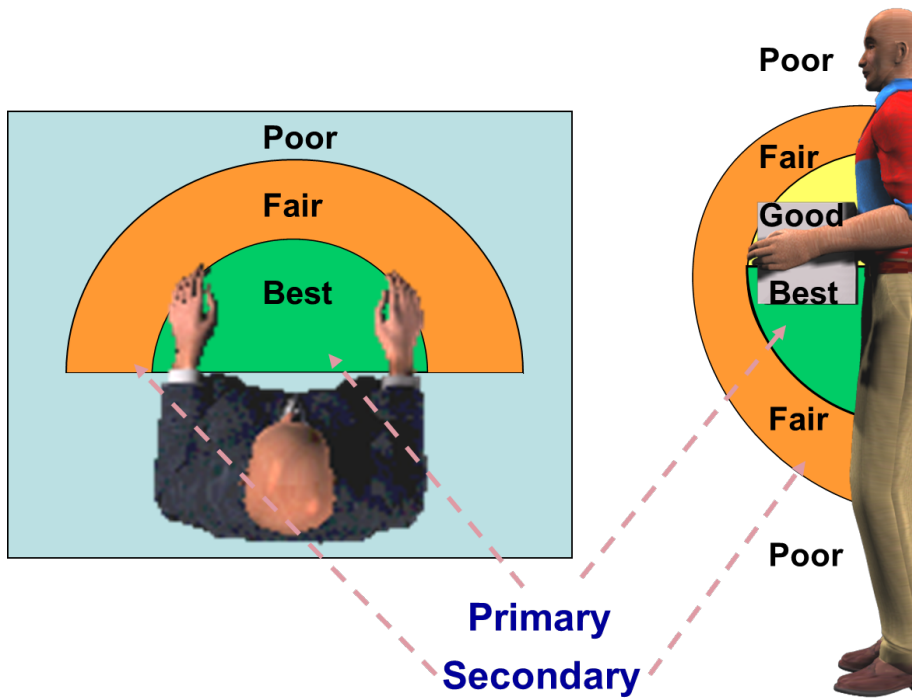
**Pushing/Pulling**

**Using Equipment and Instruments**

**Laboratory Work**

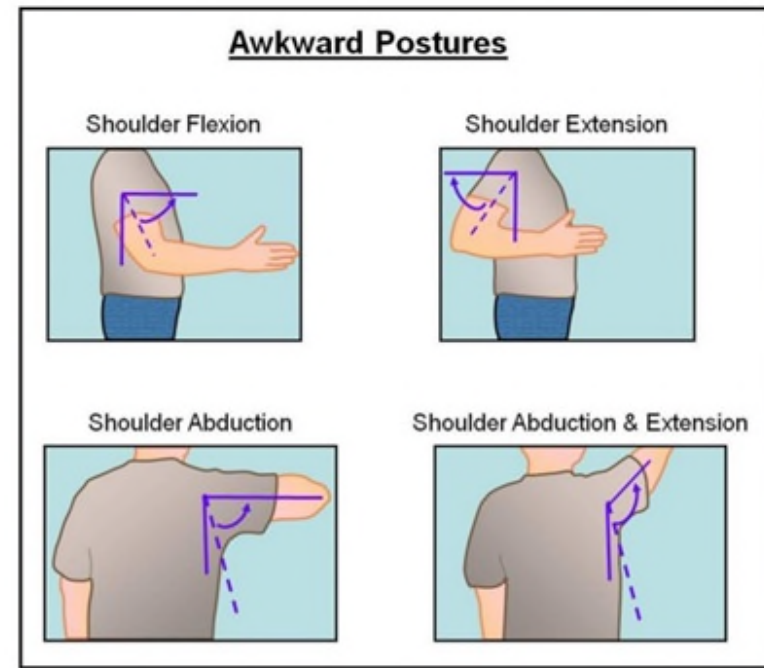
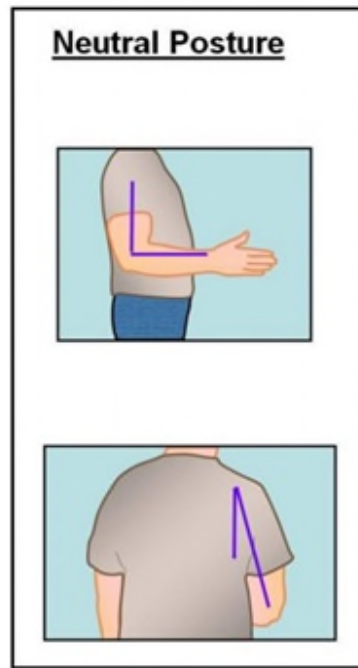


# Optimal Work Height & Reach Envelopes



# Good Alignment

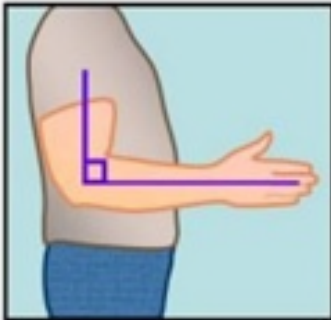
- A neutral spine is important because the “core” muscles are balanced.
- Balanced muscles don’t fatigue easily and don’t hurt.
- You are less likely to get injured when working in good proper alignment or neutral body position.
- Working in awkward postures increases your risk for an injury.





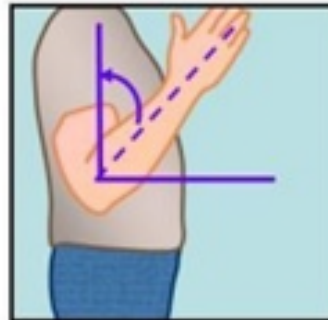
# Neutral Postures

## Neutral Posture

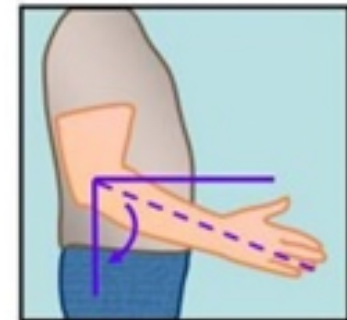


## Awkward Postures

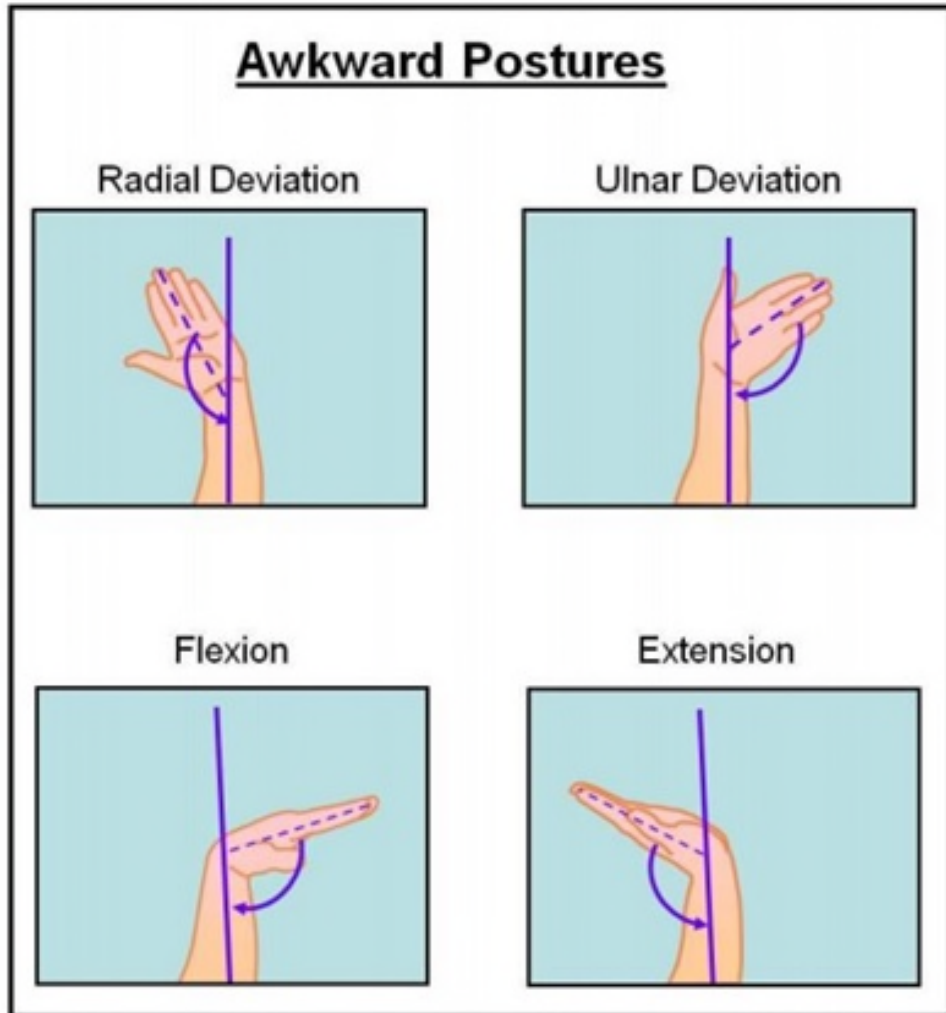
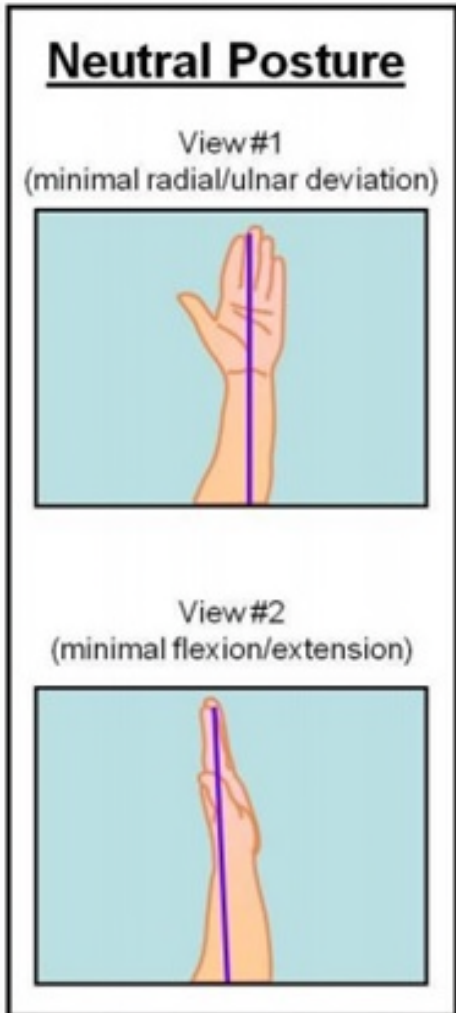
### Elbow Flexion



### Elbow Extension

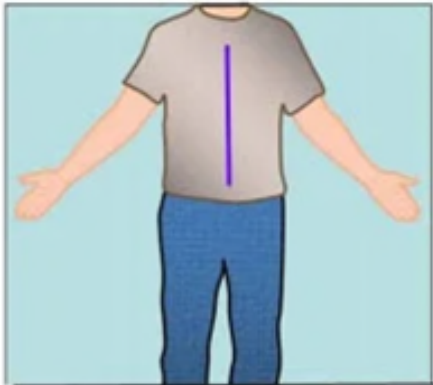


# Neutral Postures



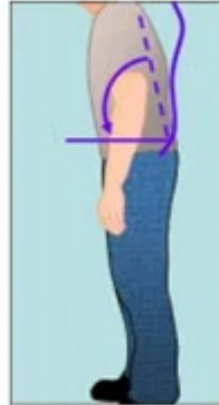
# Neutral Postures

## Neutral Posture



## Awkward Postures

Back Flexion



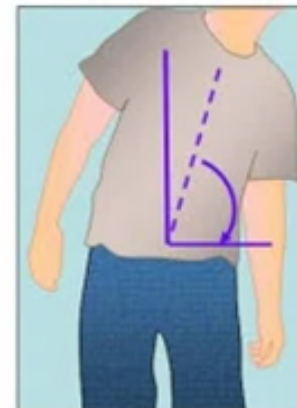
Back Extension



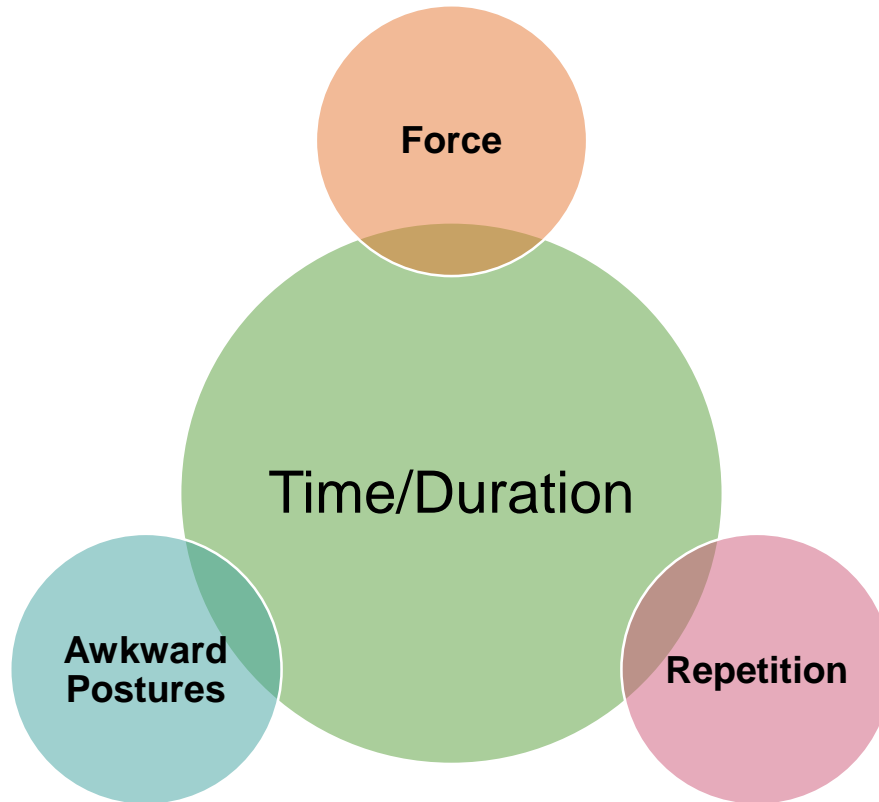
Twisting about Waist



Lateral Bending



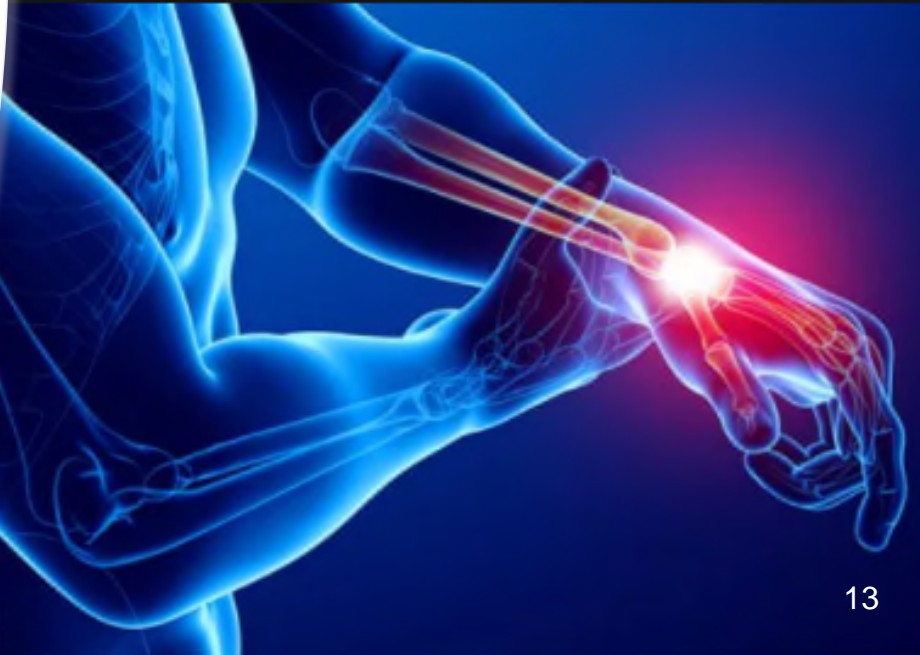
# Components of Injury



*How do you feel today? At the end of shift?*

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- **Muscle Fatigue**
- **Discomfort**
- **Swelling**
- **Tingling**
- **Numbness**
- **Pain**



# Source of Risks



Position of  
supplies



Position  
equipment/tools



Equipment  
Adjustments



Stationary  
postures



Awkward  
postures



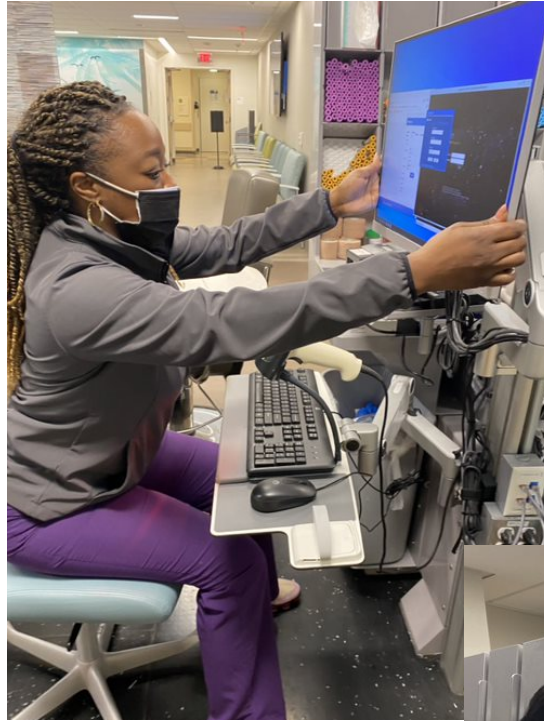
Awkward  
movements

# Phlebotomy Workstations

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## Overexertion Examples:

- Reaching above shoulder for supplies
- Reaching away from body to grab labels
- Leaning over-to tie a tourniquet
- Twisting to use the computer
- Sharps disposal



# Basic Phlebotomy Supplies

- Gloves
- Tourniquets
- Needles
- Barrel or Syringe
- Tubes
- Alcohol
- Cotton or Gauze
- Bandage or Tape





# Video Example



## Let's Review: Standard Operating Procedure (SOP)

1. Ensure pathways are clear of trip hazards
2. Wear PPE (gloves, lab coat, eye protection if needed)
3. Call patient to station and perform patient verification and validation of tests
4. Print labels
5. Set member chair to face sideways
6. Lock member chair before drawing blood
7. Move table against member chair
8. Table height set within staff member "work zone"
9. Lock table
10. Stand to retrieve all supplies
11. Ensure patient's arm and materials are within arms' reach and below shoulder level during venipuncture
12. Keep neutral spine while performing entire task
13. Activate safety device prior to disposing needle in sharps containers
14. Do not cross over body to dispose of sharps
15. Dispose of sharps immediately after draw
16. Add labels and log into system
17. Replace gloves after each patient

# Equipment Adjustment



## Adjust Member Chair

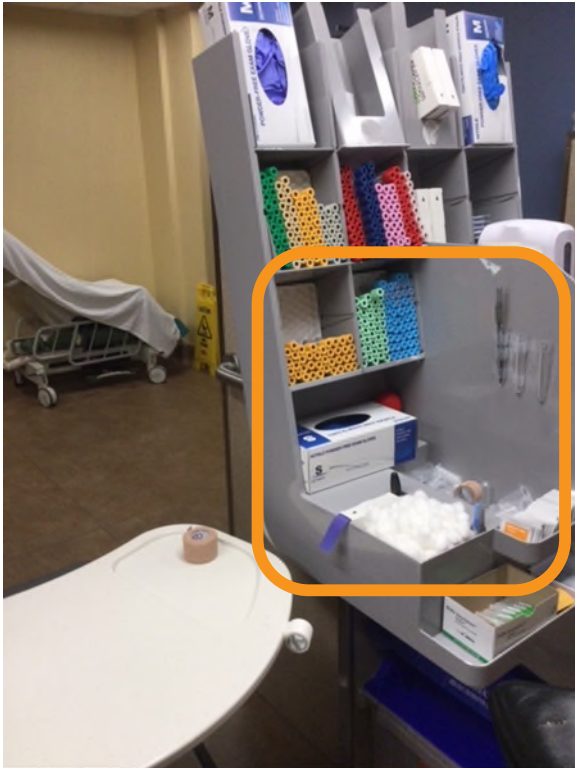
Rotate member chair to face sideways  
Move table against member chair



## Adjust Table Height

Use angled wedges to help maintain straight wrists and bring member's elbow closer

## Supplies within Reach



During venipuncture do not reach for tubes or supplies



Keep supplies close to avoid awkward postures

## Reaching away from the body- reaching above shoulders



### Improper position:

- when gathering supplies
- Avoid reaching above the shoulders and getting into awkward postures



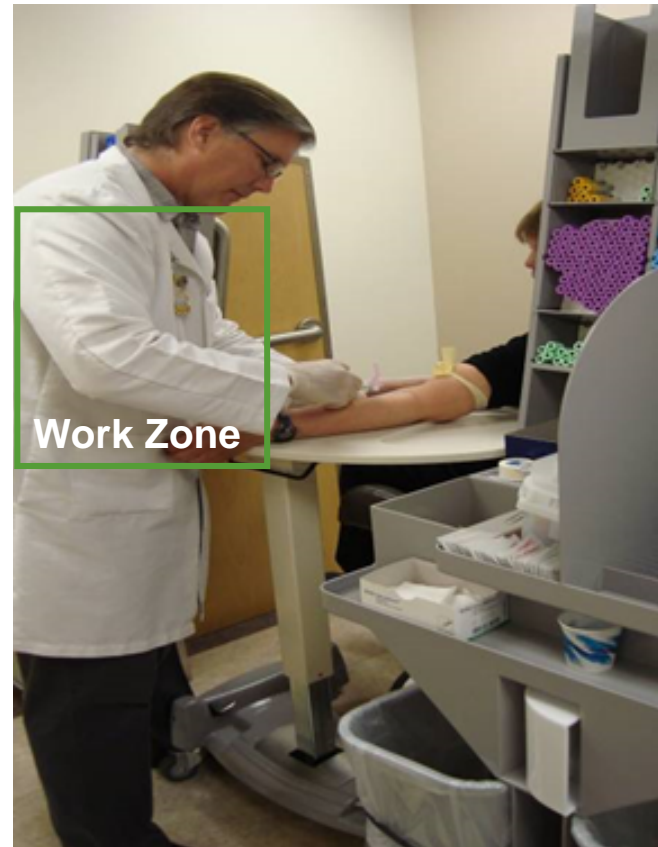
### Proper position:

- ✓ Stand to gathering supplies
- ✓ Working within your “Work Zone”

# Standing Position



**Incorrect Posture**



**Correct Posture**

# Sitting Position

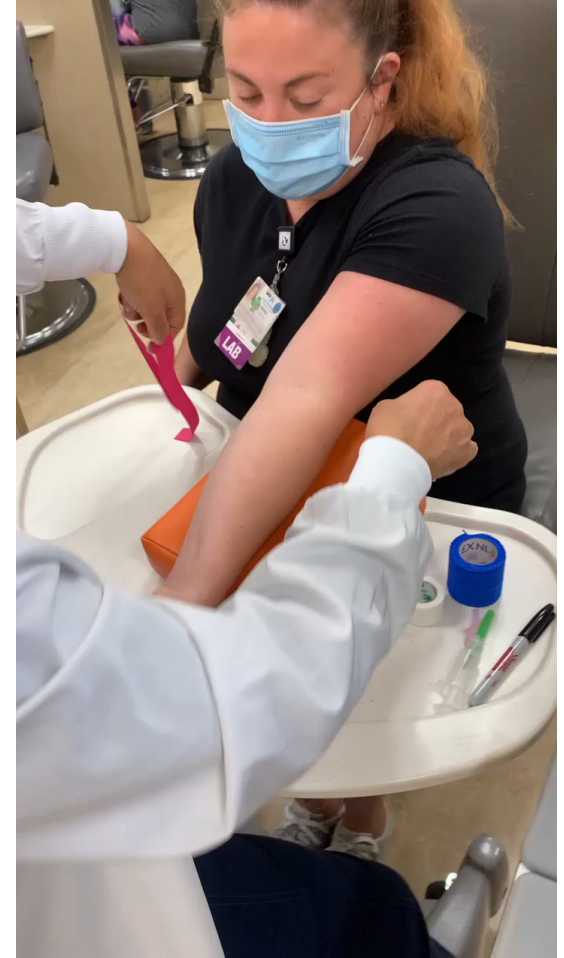
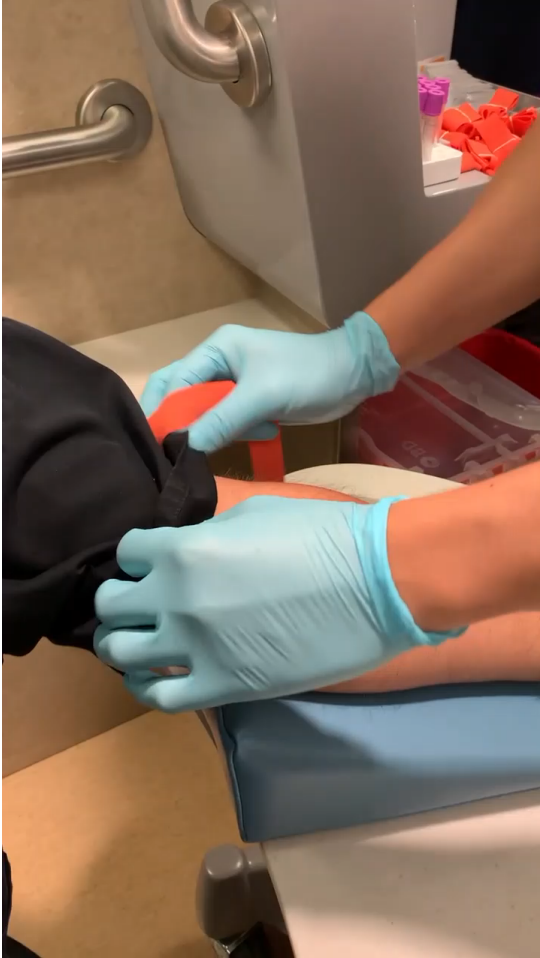


**Improper Positioning**  
Patient arm and member  
sitting facing staff



**Proper Positioning**  
Patient arm and member sitting  
sideways

# Techniques Tourniquet Application



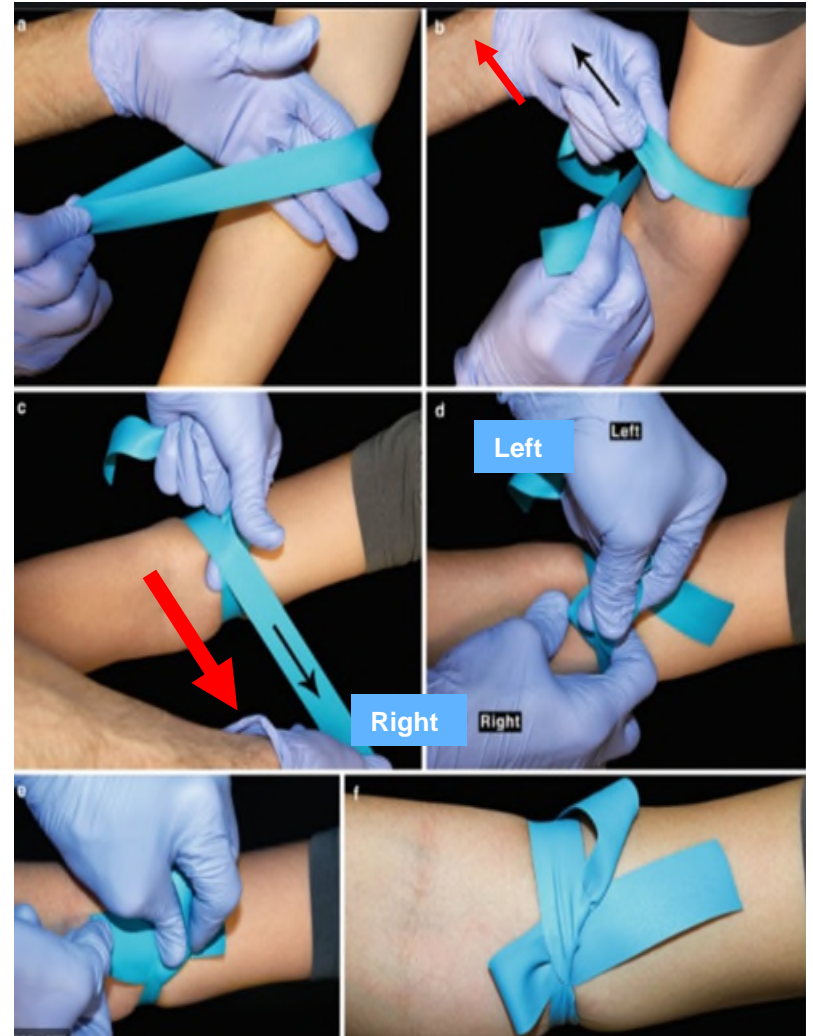


# Tourniquet Application for Venipuncture Procedure

## Six Steps

Maintain a relaxed shoulder posture and keep hands/wrist in a neutral position. *\*Only use one tourniquet per patient blood draw.*

1. Hold each end of band tightly between thumb and first (index) finger
2. Stretch band several times to ensure flexibility prior to placement on member's arm
3. Place Tourniquet under member/patients arm and cross the two ends
4. Take "your" dominate hand and gently pull band and tie into a bow
5. Leave one bow point underneath the tourniquet
6. Ready to Release- remove by pulling one end to release tourniquet



# Let's Recap: Standard Operating Procedure

1. **Ensure pathways are clear of trip hazards**
2. **Wear PPE (gloves, lab coat, eye protection if needed)**
3. **Call patient to station and perform patient verification and validation of tests**
4. **Print labels**
5. **Set member chair to face sideways**
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17. **Replace gloves after each patient**

# Ergonomic Resources in One Page



## Assessment Requests

*Need assistance with your Work & Home environment.*

Contact your local Ergo Consultant

[Contacts - ErgoInfo \(kp.org\)](#)



## SCAL Ergo/Safety Class

*Learn the basic fundamentals of ergonomics.*

*\*Scheduled on the 4<sup>th</sup> Friday of every month*

[KP SCAL Ergonomic/Safety Class](#)



## Workplace Safety Information

Website Link:

[SCAL Workplace Safety - Home](#)



## Computer Ergo Class

*Learn the fundamentals of computer ergonomics for remote work.*

*\*Scheduled every Wednesday*

[Computer Ergo Class](#)



How do you thrive? Movement is the key