

# **EXAM TABLES**

## **THE VALUE OF ERGONOMIC EXAM TABLES IN SONOGRAPHY**

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### Current Challenges in Medical Imaging

Many of the challenges facing imaging departments center around stable, experienced, productive staff. This means that worker injury can have a large impact on a department's bottom line.

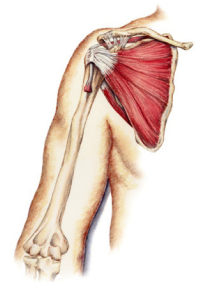


### What are work-related Musculoskeletal Disorders (WRMSD)?

- Injuries caused by or aggravated by work activities
- Result from accumulation of microtrauma  
Not tied to a specific, acute event  
Gradual, chronic exposure to risk factors
- Healthcare is 2nd riskiest occupation for WRMSD

### Injury Sites

- Most affected:
  - Shoulder is #1
  - Neck
- Cause:  
Arm abduction - shoulder has to support weight of arm, which leads to decreased blood flow and fatigue.



### How serious are WRMSDs in Sonography?

- 9 out of every 10 sonographers are scanning in pain (2008 survey). This is an increase from 1997 survey that showed an 84% injury rate.
- 1 out of 5 have a career-ending injury and may have to re-train into a different profession.

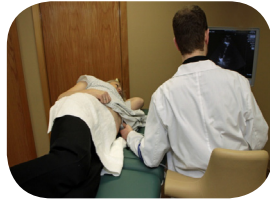
### Arm Abduction

- Shoulder muscles have to support the arm while it's suspended away from the body which leads to a lack of good blood flow to the shoulder, fatigue and injury.



## Some causes of WRMSD

- Repetitive motions
- Forceful or awkward movements
- Poor posture/improper positioning
- Static body postures



## 2 Categories of Injury Costs:

### DIRECT

- Worker's comp
- Medical Costs  
Increasing 2.5 times faster than any other benefit cost.

### INDIRECT

**3-5 times greater**

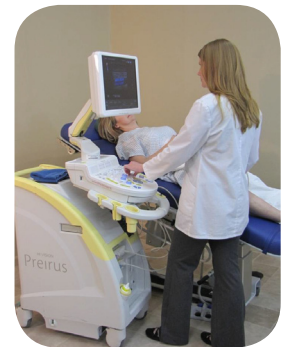
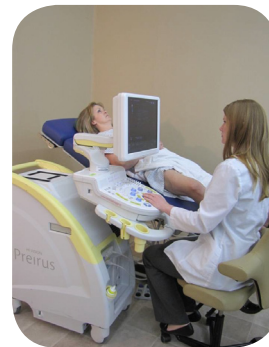
- Replacement staff
- Work slow down
- Re-training
- Lost time

## Prevention or Control Measures

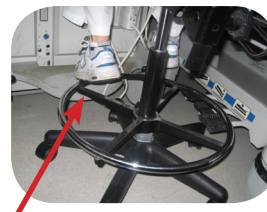
- Administrative controls - exposure reduction
  - Patient scheduling
  - Worker rotations
- Work practices - exposure reduction
  - Changes in work postures
  - Use of support cushions, etc.
- Engineering controls - exposure elimination
  - Redesign workspace
  - Redesign equipment
  - Most expensive initially, but saves in injury costs over the years.



- Height Adjustability
  - Minimum ergonomic requirement is electric height adjustability
  - Must address needs of different height workers and different work styles



### Manually Adjustable is not ideal.



*Chair interferes with access to table controls.*



*Controls are at end of table.*

- Requires too much effort on sonographer's part.
  - May have to get up to access controls at end or side of table.
- Sonographers won't make the effort to make table changes.
  - They will work at whatever height the table is left in by co-workers which may not be ideal for proper body mechanics.



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### Non-ergonomic Tables

- Stretchers are not exam tables & have many features that make them good stretchers but not good exam tables.

- This stretcher is trying to serve as a cardiac exam table as well.



- Side rail, although in the down position, is in the way of the apical access opening.



- When the railing is moved out of the way of the access panel, it sticks out too far past the end of the table, causing a safety hazard.



- Table frame extends beyond the mattress. This prevents sonographers from getting in close to their patients.



- The base of the table extends beyond the frame.
- This can result in a tripping hazard and prevent the sonographer from positioning a chair close to the table.



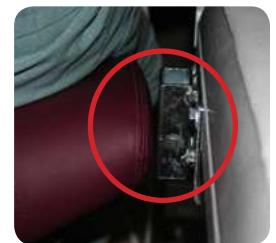
- Side rails don't retract under the table; this prevents the sonographer from getting close to the patient.



- Handle for moving table extends beyond frame at the head of the table; this prevents the sonographer from getting close to patient when working from the head of the table.



- Attachment for adding IV pole or other options is a permanent part of frame. It is located on the side & prevents sonographer from sitting closer to the table.



## ROI for Improved Injury Rates

- 20% ROI with worker behavior changes
  - Trying different work postures
  - Using arm support devices
- 100% ROI with workplace & equipment design
  - Workers have to know how to use features of the equipment & why they are important
  - Lack of this knowledge can lead to dissatisfaction with product

## The Ergonomic Workstation

- Consists of:
  - Ultrasound System
  - Chair
  - Exam Table
- All components should have multiple adjustments
  - The minimum requirement would be an ergonomic, adjustable exam table.

### BENEFITS

- An ergonomic work station is the most cost effective way to create a healthy, productive workplace.
- Goals of ergonomics:
  - Fit the work environment to the worker
  - Improve productivity



### WHAT ABOUT THE PATIENT?

- Patient benefits
  - Comfortable, safe exam table
  - High-quality exam
- Features
  - 3" mattress with soft upholstery
  - Optional side rails for safety
  - 22" & 23" (vascular table) lowest height for ease in getting onto the table
  - Electric adjustability for smooth changes in table position
  - Dropping footboard & leg supports for comfort during pelvic ultrasound exams
  - Chair configuration for comfortable seating & easy transition to a supine position
  - Back access panels for support when lying on one's side
  - Armboard for comfortable arm position during upper extremity exams
  - Sliding access panel for comfortable transition of table during cardiac exam



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### Exam-Specific Features

- Tables should have a variety of features specific to types of exams performed in the lab.



- Optional headrest can be added for carotid artery exams and thyroid exams.



- Optional arm board can be added for exams of the upper extremity.



### Radiology-Based Labs

- Back access support panels and leg supports (stirrups) are important for optimal patient and sonographer positioning.



- It may be easier for some patients to sit on the table in a chair configuration and then be laid back for the exam.



### Echocardiography Labs

- Echocardiography labs need access to the apex of the heart when the patient is rolled onto his or her left side.



- Sliding apical access panel on Oakworks tables provides a variety of opening sizes and is less alarming to patients.



- If sonographers perform these exams right-handed, the panel can be controlled electrically.

- Dropping access panel on this competitive table has one size opening and can be alarming when it drops away.



## Ergonomic Tables

- Mattress extends to edge of frame



- No features obscure the sonographer's knees when he/she is seated at the head of the table.



- Electric height adjustability allows for optimal work position.



- Back access panel supports patient's back & allows sonographer to step in closer.

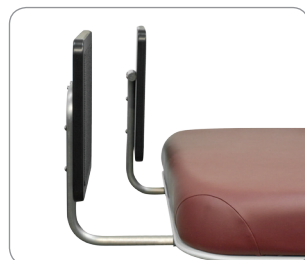


## Vascular Labs

- Vascular labs have unique exam requirements.
  - Steeper tilt angle
  - Split footboard



- Split footboard allows sonographers to position one side lower than the other or to drop one side completely away for non-weight bearing leg vein exams.



- Venous reflux exams evaluate backflow of blood in the legs
- Uses gravity, which usually means patient is standing up and sonographer is forced to kneel/sit on the floor



- The Oakworks exam table has a steep forward tilt angle, which can be close to 70 degrees
- Generally sufficient to demonstrate backflow of blood in the legs



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