

Exercise Modification for the Sensitive Shoulder

Exercise Modification for the Sensitive Shoulder

Rick Kaselj

Rick Kaselj - www.HealingThroughMovement.com



Rick Kaselj



- **BSc. (Kinesiology)**
- **MS. (Exercise Science)**
- **Endurance Activities**
- **Exercise Rehabilitation**
- **Coarse Presenter**

Rick Kaselj - www.HealingThroughMovement.com



Objectives

- 1) Highlight Shoulder Injuries
- 2) Shoulder Injuries & Weight Training
- 3) Strength Exercises that Increases the Risk of Injury
- 4) Exercise Modification
- 5) Alternate Exercises
- 6) Case Study

Rick Kaselj - www.HealingThroughMovement.com



Highlight Shoulder Injuries

• **How prevalent are shoulder injuries?**

- 4 million people in the USA seek medical care each year for shoulder sprain, strain, dislocation, or other problems (USA population = 300 million)
- Each year, shoulder problems account for about 1.5 million visits to orthopaedic surgeons (USA)

Rick Kaselj - www.HealingThroughMovement.com



Highlight Shoulder Injuries

• **Most Common Shoulder Injuries?**

- Rotator Cuff
- Shoulder Dislocation
- Shoulder Subluxation
- Shoulder Instability
- AC Sprains / Strains
- Frozen Shoulder
- Arthritic Shoulder
- Broken Clavicle
- Shoulder Impingement

Rick Kaselj - www.HealingThroughMovement.com



How Prevalent are Shoulder Injuries Related to Weight Training?

- **45 million Americans train with weights regularly (USA)**
- **In 1995 - 56,400 emergency visits out of 5.4 million were related to weight training injuries (USA)**

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Most Frequent Shoulder Injuries as a Result of Weight Training?

- Glenohumeral Instability
- Impingement Syndrome
- Rotator Cuff Tendonitis
- AC Sprain / Strain
- Biceps Tendonitis

Rick Kaselj - www.HealingThroughMovement.com



Cause of Shoulder Injuries in Weight Room

- Improper technique
- Lack of supervision
- Skeletal immaturity
- Anabolic steroid abuse
- Muscle imbalance
- Overuse (3.5 to 12%)
- Hereditary

Rick Kaselj - www.HealingThroughMovement.com



Exercises to Be Covered

1. Wide Grip Bench Press
2. Behind the Neck Lats Pull-down
3. Shoulder / Military Press
4. Back Squat

Rick Kaselj - www.HealingThroughMovement.com

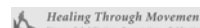


Populations to be Covered

- Prevention
 - Healthy Population
 - Prevent Injuries
 - Recovery from Injury
- Injury Considerations



Rick Kaselj - www.HealingThroughMovement.com



Key Concepts of Exercise Modification



1. Hand Spacing
2. Grip Selection
3. Bar Trajectory
4. Start & End Positions

Rick Kaselj - www.HealingThroughMovement.com



Key Concepts of Exercise Modification

5. Shoulder ROM
6. Periodization
7. Training Volume
8. Free Weights

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Wide Grip Bench Press

- **Prevention**
 - Technique
 - Progression
 - Periodization
 - Criteria for Progression



Rick Kaselj - www.HealingThroughMovement.com



Bench Press – The Benchmark of Manhood -

- **Main Muscle Groups –**
 - Pectorals, Arm Extensors, Wrist Flexors
- **Primary Emphasis –**
 - Pectorals
- **Secondary Emphasis –**
 - Triceps, Anterior Deltoids, Serratus, and Coracobrachialis
- **Strength Exercise Experience –**
 - Beginner, Intermediate



Rick Kaselj - www.HealingThroughMovement.com



Bench Press Technique

- **Line up your eyes under the bar.**
- **Gripping the bar wide.**
- **Lock your feet into position on floor.**
- **Lift bar off rack.**
- **Bar is below armpit level and lower bar to chest. Elbows are under wrist.**
- **As the bar is lowered, one breathes in.**
- **The bar is lowered to the chest and then pressed up back to the starting position. As one presses up, one breathes out.**

Rick Kaselj - www.HealingThroughMovement.com



Understanding the Bench Press Variations

- **Back Arch - Focusing on Lower Chest**
 - Push through your legs and arch your back. This will shift the focus to the lower pectorals and allow for heavier loads.
- **Tight Elbows - Focusing on Anterior Deltoids**
- **Narrow Grip – Focus on inner pectorals**
- **Wide Grip – Focus on outer pectorals**

(Delavier, 2001)

Rick Kaselj - www.HealingThroughMovement.com



Areas of Concern with the Bench Press

- **Grip Width**
 - Loads RC
- **Overhand Grip**
 - Loads RC
- **Shoulder Abduction**
 - Loads capsule
- **Shoulder Extension**
 - Loads capsule

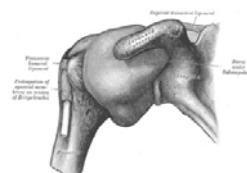
Rick Kaselj - www.HealingThroughMovement.com



Capsule

- Limitation in the Shoulder Movement with the Bench Press is not the muscles but caused by the capsule
- The capsule is designed to allow enough movement in the shoulder which will not damage the joint.

(Chek, 1999)



Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Capsule

- The capsule is also full of proprioceptors. These proprioceptors pass information to the brain on joint position, speed of movement, pressure, tension and pain in and around the joint.
- Once stretched the joint capsule can no longer stabilize the shoulder joint during common shoulder movements.

(Chek, 1999)

Rick Kaselj - www.HealingThroughMovement.com



Shoulder ROM

- **Functional Range of Motion**
 - Most people do not have the proper functional range of motion to perform the bench press.
 - Have the bar drop to the chest exceeds most peoples functional range of motion.
- **The Bench Press Range of Motion Test**
 - Passive Shoulder Range of Motion Test
 - Get the client in push-up position without the bar and see what the resting shoulder position is.

Rick Kaselj - www.HealingThroughMovement.com



Shoulder ROM

- **Optimal Bottom Position**
 - Perform low load bench press determine a bottom position that is about 2 to 3 centimetres higher than PROM test in order to have a buffer zone when the weight gets heavy or when fatigued. Mark buffer with fist or towel.
- **You try it – Compare a chest stretch versus a bench press**

(Chek, 1999)

Rick Kaselj - www.HealingThroughMovement.com



What About Training Through Full ROM?

- **Approximately a 15 degree +/- carryover of strength developed at any joint angle with strength training**
- **i.e. – Training the shoulder from 15 to 75 degrees will carryover to strength gains from 0 to 90 degrees.**

(Chek, 1999)

Rick Kaselj - www.HealingThroughMovement.com



Bench & Shoulder Blades

- The exercise being performed on a flat bench disrupts the normal mechanics and function of the scapulae.
- The weight presses the scapulae into the bench. Therefore the movement occurs at the GH joint instead of being spread between the GHJ and Scap.
- As the weight is increased the Scap are pressed harder into the bench.

(Chek, 1999) (Kaselj, 2006)

Rick Kaselj - www.HealingThroughMovement.com



Wide Grip Bench Press Exercise Modification

- **Wide Grip BP**
 - 1.5 Shoulder Width
 - Shld Abd <45°
 - ROM Limiting (Pinning)
 - Over / Under Grip



Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Wide Grip Bench Press



- **Decline BP (18° to 30°)**
 - Okay (Shld Flex <90)
 - Easier on shoulder
- **Incline BP (30° to 45°)**
 - Very Cautious (Shld Flex >90)
 - More control with DB

Rick Kaselj - www.HealingThroughMovement.com



Rehabilitation Back to the Bench Press

- **4-8 weeks performing RC conditioning program**
- **Bench press from the floor**
 - The floor creates a ROM barrier that protects your should joint capsule and tendons from excess stretch
 - 3 to 4 weeks
- **Progress to Dumbbells**
 - Dumbbells allow the body to find a new path of trajectory that does not affect the injured tissue.
- **Deflated Stability Ball Dumbbell Bench Press**
 - Inflate ball over time

(Chek, 1999)

Rick Kaselj - www.HealingThroughMovement.com



Bench Press Progressions

1. **Scapular Protraction w/ alternating grip**
2. **Partial ROM w/ underhand**
3. **Partial ROM w/ overhand**
4. **Full ROM w/ underhand**
5. **Full ROM w/ overhand**

Rick Kaselj - www.HealingThroughMovement.com



Periodization Program

1. **Base Phase**
 - 3 – 4 sets of 10 reps
 - progress to 4 – 5 sets of 10 – 12 reps
 - low intensity
 - Stress proper technique
2. **Strength Phase**
 - 3 – 4 sets of 6 – 8 reps
 - Medium intensity

Rick Kaselj - www.HealingThroughMovement.com



Periodization Prog cont.

3. **Strength / Power Phase**
 - 3 – sets of 4 – 6 reps
 - medium to high intensity
4. **Peaking Phase**
 - 3 – 4 sets of 6 – 8 repetitions
 - increase wt 2.5% per session
 - Alternate heavy & light sessions

Rick Kaselj - www.HealingThroughMovement.com



Criteria for Progression

1. **Pain during WU sets that cont**
 - 2 days off & drop down one step
2. **Pain during WU sets that goes away**
 - Cont the program at that step
3. **Soreness during WU that goes away, but redevelops during WO**
 - 2 days off & drop down one step
4. **Soreness that day after lifting**
 - 1 day off & stay at that step
5. **No soreness**
 - Advance one step weekly or as instructed

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Wide Grip Bench Press



• Injury Considerations

Rick Kaselj - www.HealingThroughMovement.com



Anterior Shoulder Instability

- Hands off (Partner)
- Alt flat & decline
- 1.5x shld width
- Shld abd <45°
- ↓ volume
- ↓ intensity



Rick Kaselj - www.HealingThroughMovement.com



RC & Shld Impingement

- 1.0x shld width
- Shld abd <45°
- Shld ext <15°
- Touch position is superior to highest point of chest



Rick Kaselj - www.HealingThroughMovement.com



Posterior Shoulder instability

- Set Scapula
- 2x shld width
- Hands off (Partner)
- Alt intensity
- Progress to Decline
- Progress & alt btw Flat & Decline

Rick Kaselj - www.HealingThroughMovement.com



Behind the Neck Lats Pull-down



- Prevention
 - Technique
 - Progression
 - Periodization
 - Criteria for Progression

Rick Kaselj - www.HealingThroughMovement.com



Technique

- Main Muscle Groups
 - Dorsal muscles (lats), Arm flexors, Surae (traps)
- Primary Emphasis
 - Latissimus dorsi
- Secondary Emphasis
 - forearm flexors, trapezius (lower portion), rhomboids, biceps, brachialis,
- Progress to: Chin Up
- Strength Exercise Experience - Beginner, Intermediate

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

To Perform Behind the Neck Lats Pull-down

- lat bar behind one must be able to perform 100 to 120 of active ER rotation
- If one can't:
 - Shoulder girdle compensation
 - Spinal compensation - lumbar flexion, cervical flexion
- Setting scapula (25% of maximum).
 - Allowing scapula to move and perform task. Not contract so hard that it limits shoulder abduction.

(Hittner, 2002)

Rick Kaselj - www.HealingThroughMovement.com



Testing

- Supine ER
 - Compensations:
 - Thoracic spine
 - Lumbar Spine
- Supine Bench ER
 - Compensations:
 - Thoracic spine
 - Lumbar Spine

(Kaselj, 2006)

Rick Kaselj - www.HealingThroughMovement.com



Variations

- Lats Pulldown - Lat Bar In Front
 - Main Muscle Groups – Dorsal muscles (lats), Arm flexors, Surae (traps)
 - Primary Emphasis – Latissimus dorsi
 - Secondary Emphasis – trapezius (middle and lower portion), rhomboids, biceps, brachialis, pectorals
- Last Pulldown - Close-grip
 - Main Muscle Groups – Dorsal muscles (lats), Arm flexors,
 - Primary Emphasis – Latissimus dorsi and teres major
 - Secondary Emphasis – rhomboids, trapezius, posterior deltoids, biceps, brachialis, brachioradialis

Rick Kaselj - www.HealingThroughMovement.com



Risks

- High risk position
- Excess flexion of neck
- Risk of bone bruising
- Mus Imbalance



Rick Kaselj - www.HealingThroughMovement.com



Exercise Modifications



- Setting Scapula
- Good Posture
- Underhand Grip
- Stand lats pull-down
- 30° ant to shld (scapular plane)

Rick Kaselj - www.HealingThroughMovement.com



Progressions

1. Shrug / Underhand Grip
 - Scap retrac & shld ext w/ elbows fully locked
 - Forearm underhand grip
2. Shrug / Overhand Grip
3. Partial ROM Lats Mus Pull-down / Underhand Grip
 - 4 – 6 inch thickness of towel placed underneath shirt
 - Lowered until it touches the towel & returns to start position

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Progressions cont.

- Partial ROM Lats Dorsi Mus Pull-down w/ OH**
- Full ROM Lats Dorsi Mus Pull-down w/ OH**
 - Bar is lowered until it touches the chest & returns to start position

Rick Kaselj - www.HealingThroughMovement.com



Behind the Neck Lats Pull-down

- Injury Considerations**

Rick Kaselj - www.HealingThroughMovement.com



Anterior Instability

- Avoid Traction**
- Neutral Grip**
- Anterior (Scaption plane)**



Rick Kaselj - www.HealingThroughMovement.com



Rotator Cuff

- Underhand Grip**

Rick Kaselj - www.HealingThroughMovement.com



Military / Shoulder Press

- Prevention**
 - Technique
 - Progression
 - Periodization
 - Criteria for Progression



Rick Kaselj - www.HealingThroughMovement.com



Shoulder Press

- Main Muscle Groups – Shoulders**
- Primary Emphasis – Medial Deltoids**
- Secondary Emphasis – upper trapezius, serratus anterior and triceps**
- Variations:**
 - Narrow Grip with Elbows Forward - Works the Anterior Deltoids and Upper Pectorals
 - Wide Grip and Elbows Flared Out - Works Anterior and Medial Deltoids

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Areas of Concern

- **Excessive ER Shoulder**
- **RC of Shoulder**

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification

- **Front Press - Natural Grip**
 - Main Muscle Groups – Shoulders and Wrist Flexors
 - Primary Emphasis – Medial and Anterior Deltoids
 - Secondary Emphasis – Upper Pectorals, Upper Trapezius, Triceps and Serratus Anterior

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification

- **Bring bar to front**
 - Smith Machine
- **DB Press**
 - Scaption (Corners)
 - Natural (Neutral)
- **Face machine**



Rick Kaselj - www.HealingThroughMovement.com



Progressions

1. **Isolated Motion**
 - Front deltoid raises (<90°)
 - Lateral raises (<90°)
2. **Multiangle Isometrics**
 - Iso @ 60°, 90° & 120° shld flex
3. **Partial ROM front shld press**
 - Bar is lowered - height of the forehead & returns to start position

Rick Kaselj - www.HealingThroughMovement.com



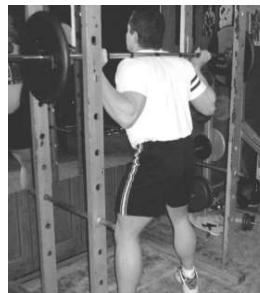
Progressions cont.

4. **Shoulder Press Lockout**
 - Bar inside power rack, 3 – 6 inches below elbow lockout position
 - Bar is pressed from front press position
5. **Full ROM Front Shoulder Press**
 - Bar is lowered until it touches the chest & returns to start position

Rick Kaselj - www.HealingThroughMovement.com



Back Squat



Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Exercise Modification

- **Back Squat**
 - Front Squat
 - Centre of Mass Bar
- **Leg Press Machine**
 - Seated
 - Supine



Rick Kaselj - www.HealingThroughMovement.com



Case Study

- 45 year old man that was in a low speed collision where he was rear ended. At the point and time of impact he was breaking with his right leg and gripping the steering wheel. Has had physical therapy where he worked on range of motion, scapular stabilization and rotator cuff with manual therapy and exercise. He was diagnosed with rotator cuff strain, AC sprain and shoulder instability. He used to go to the gym when he was in high school and has come to see you looking for strength program to help him recover from his shoulder injury.

Rick Kaselj - www.HealingThroughMovement.com

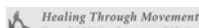


Type of Training

- **Local muscular endurance training**
 - light to moderate loads
 - 40-60% of 1 RM
 - high repetitions (> 15)
 - short rest periods (< 90 s)
- **Training Frequency**
 - 2 to 3 times a week

Source - <http://www.exrx.net/WeightTraining/Guidelines.html>

Rick Kaselj - www.HealingThroughMovement.com



Determining 1RM

- **1-RM in pounds = pounds lifted 2 to 10 times divided by (100% minus [repetitions times 2])**
- **Example :**
 - You can just barely lift 80 pounds 10 times
 - 1-RM = 80 pounds divided by [100% minus (10 times 2)]
 - 1-RM = 80 divided by (100% minus 20)
 - 1-RM = 80 divided by 80% or 0.80
 - 1-RM = 100 pounds

Source - <http://www.chfpatients.com/fag/1rm.htm>

Rick Kaselj - www.HealingThroughMovement.com



How many reps?

RM = Repetition Maximum = number of repetitions performed to fatigue

- 1RM to 3RM - neuromuscular strength
- 4RM to 6RM - maximum strength by stimulating muscle hypertrophy
- 6RM to 12RM - muscle size (hypertrophy) with moderate gains in strength
- 12RM to 20RM - muscle size and endurance

Rick Kaselj - www.HealingThroughMovement.com



Exercise Program

- **Pec Fly**
 - straight arm - decrease ER
 - single arm at a time if no lever
 - seat high - decrease shoulder abduction
 - shoulder extension to 0 degrees
 - head against pad to work on posture
 - breath normally
- **Seated Row**
 - narrow & wide grip
 - focus in the elbow pull compared to the wrist flexion
 - not relaxing at start / no traction
 - shoulder extension to 0 degrees
 - breath normally

Rick Kaselj - www.HealingThroughMovement.com



Exercise Modification for the Sensitive Shoulder

Exercise Program

- **Chest Press**
 - seat height - decreases shoulder abduction
 - shoulder extension to 0 degrees
 - head against pad to work on posture
 - breath normally
 - Check to see if can handle load through shoulder (posterior instability)
- **Shoulder Press**
 - Wide grip - check ROM
 - Narrow Grip - decrease risk of impingement (subacromial space / greater tuberosity)
 - overhead stuff is functional
 - face machine
 - breath normally

Rick Kaselj - www.HealingThroughMovement.com



Exercise Program

- **Lats Pulldown**
 - breath normally
 - face machine
 - Wide grip - check ROM
 - Narrow Grip - decrease risk of impingement (subacromial space / greater tuberosity)

Rick Kaselj - www.HealingThroughMovement.com



Objectives

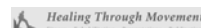
- 1) Highlight Shoulder Injuries
- 2) Shoulder Injuries & Weight Training
- 3) Strength Exercises that Increases the Risk of Injury
- 4) Exercise Modification
- 5) Alternate Exercises
- 6) Case Study

Rick Kaselj - www.HealingThroughMovement.com



Thank You!

Rick Kaselj - www.HealingThroughMovement.com



References

- **Complete list at:**

www.HealingThroughMovement.com

- **Any questions please E-mail:**

[Rick Kaselj - rkaselj@HealingThroughMovement.com](mailto:Rick.Kaselj@HealingThroughMovement.com)

Rick Kaselj - www.HealingThroughMovement.com

