

Exercise to Improve Neck & Back Function






## REMINDER

Obtain medical clearance and physician's release prior to beginning an exercise program for clients with medical or orthopedic concerns.

### Why You Need To Know

- Changing role of the fitness professional.
- 6 Million emergency room visits per year.
- Estimated \$110 billion per year for spinal pain costs.
- \$40 billion accrued in business expenses.
- Men are twice as likely to suffer from LBP.

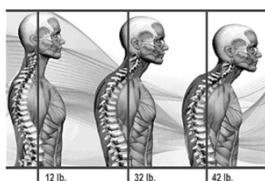


### Back & Neck Pain: 10 Lifestyle Causes


- Poor Diet
- Lack of Exercise
- Poor Posture
- Your Office Chair
- A Non-supportive Bra
- Old Mattress
- Worn-out Shoes
- Heavy Shoulder Bags
- Cigarette Smoking
- Stress & Depression

### Posture & Neck Pain

- Slouching causes posterior neck compression.
- Chest out posture puts head in proper alignment over neck
- Use stretching exercises to improve adaptive shortening syndrome



### Assess Head Position



- Proper posture shows a line from the bottom of the earlobe to the top of the AC Joint
- Correct forward head by lengthening shortened issues, such as trapezius, levator, and scalenes.

### Other Factors in Neck Pain

- Trapezius Imbalances
  - Tight Upper / Weak Lower
- Weak Spinal Extensors
- Poor Breathing Technique
  - Tight Scalenes
- Tension and Trigger Points
  - Upper Trapezius, Levator Scapulae, and Sternocleidomastoid



### Neck Research Says...

- Women are nearly twice as likely as men to develop neck pain and have a lower resolution rate
- Specific strength & endurance exercises are better than stretching exercises for decreasing pain and improving flexibility and mobility of the neck in women with chronic neck pain



### Neck Pain & Ab Exercises



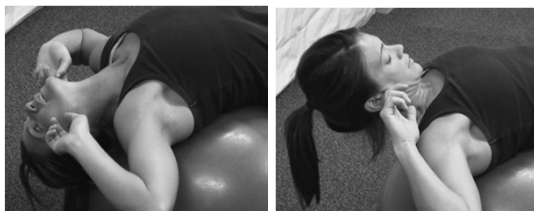
- During a crunch gravity is resisting hip and spine flexion, and must be overcome by contracting the hip, lumbar and cervical spine flexors
- Due to posture distortion (i.e. forward head) and disuse the cervical flexors are the weakest link

### Chin Tuck / Double-Chin Exercise



- Stretches the cervical extensors
- C-spine neutral, draw the head directly backwards creating a “double-chin”
- Hold 5 seconds each
- Repeat 10 times

### Swiss Ball Cervical Crunch



### Cervical Isometrics: Flexion

- Perform isometrics into flexion, extension, lateral flexion (shown) and rotation
- Hold 5 seconds each
- Repeat 5 times each direction with a 10-15 second rest between each contraction



### Lower Trapezius Arm Slides



- Keep shoulder blades adducted and lumbar spine flattened throughout
- Abduct shoulders overhead and return to 90° abduction
- Repeat 10-15 times

### Back Extension Isometric

- Keep C- and L-Spines neutral
  - Chin tucks back
- Lift only upper body
- Progression
  - Arms at side
  - Arms in 'T' position
  - Arms overhead



### Tubing Rows & Shoulder Extension



### Avoid Neck Pain in Training

- Try using an appropriate resistance during abdominal exercises
  - Assisted crunches
- Cradling the head in the hands will reduce the load on the neck
- Use neck fatigue as your limiting factor or failure point of any exercise



### Seated Trapezius, Levator



### Seated Scalene



### Common Musculoskeletal Causes of Back Pain

1. Postural Syndrome
2. Spinal Derangement
3. Adaptive Shortening

These conditions can lead to:

- Nerve Radicular Pain
- Facet Pain
- Muscle, Ligament, & Tendon Pain
- Disc Pain, Bone Pain

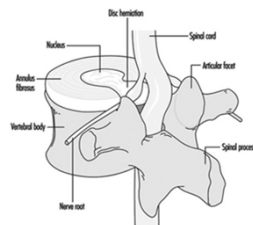


### Postural Syndrome

- Describes pain associated with a mechanical deformation of normal tissue.
- Causes by placing pressure on tissue in an end range of motion for prolonged periods of time.
- Typically affects those 30 or under.
- Pain is local, not radiating, or constant.
- Associated with sedentary living, lack of exercises, or unchanging positions.
- Example: pain associated from slouching in a chair

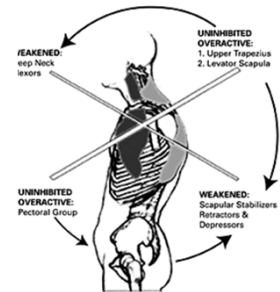
### Spinal Derangement

- Refers to pain associated with the spinal discs.
- Includes disc bulges, herniations, and tears
- The lumbar spine accounts for about two-thirds of these conditions
- Associated with a flexion based lifestyle



### Adaptive Shortening

- An inability to move actively out of a pain-producing position.
- Over time connective and muscle tissue become shortened
- Key factor is loss of functional range of motion.



### Heat Vs. Ice

- When to use ice:
  - During acute pain from swelling that causes stiffness or movement limitations
  - Due to initial inflammation ice should be the initial choice for pain relief and reduced swelling.
- When to use heat:
  - If chronic discomfort is accompanied by stiffness and tightness that won't go away.
  - Heat increases circulation and flushes metabolic build up that have accumulated due to spasms.

### Exercise Program Guidelines

- For proper preventative measures, a complete exercise program is necessary.
- Taking medicine and lying in bed can be counterproductive to healing.
- Proper stretching, strengthening, & body mechanics wards off atrophy and shortens recuperation.
- The goal is to match proper exercise with the low back conditions causing problems.

### Finding Neutral

- The primary goal of our exercise program is improving trunk stabilization.
- The goal is to find spinal position of maximum comfort with the spine neither fully flexed or extended.
- Add arm and leg movement to increase intensity.



### Postural Syndrome Exercises

- If pain is postural related flexibility is not typically limited so exercise is the primary protocol.
- Postural syndrome diagnoses are vague including general low back pain or strain.
- Start exercises floor based and move to a standing position.

### Bracing With Arm Flexion



### Bracing With Leg Extension



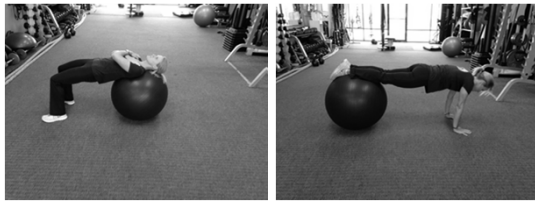
### Unsupported Bracing



### Prone Arm, Leg Lifts



### Bridge, Plank

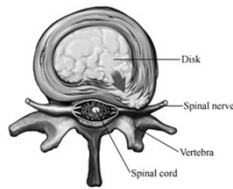


### Adaptation Shortening Syndrome Exercises

- The primary component of this syndrome is loss of motion.
- Programming starts with stretching and then progress to strengthening.
- The goal is to elongate shortened muscles through stretching and myofascial release
- Diagnoses could include lumbar strain, stenosis, sciatica, degenerative joint disease, facet arthropathy, or myofascial pain syndrome.

### Derangement Syndrome Exercises

- Usually effects people in the 25-50 yr old range.
- Often the result of a flexion-based lifestyle
- Flexion-based lifestyle=ADLs that constantly keep the lumbar spine in flexion (ie. Sitting all day)
- Implies disc issues including spondylosis, bulges, or herniation



### Recommendations and Progressions

- Perform these exercises 10-12 reps every few hours.
- With acute pain use lower back extension exercises for a week or two then progress to stabilization
- For chronic pain perform stabilization exercises immediately after.



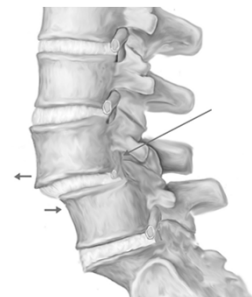
### Prone Press Up

- Back should remain at rest with the arms doing all the work.
- Perform 10-12 reps.
- For acute pain perform several times per day
- For chronic pain perform periodically.



### Spondylolisthesis

- Use the stabilization series of exercises explained earlier.
- Avoid prone leg lifts which may lead to back bending.
- The seated forward bending stretch as well as hip stretches will also provide relief.



### Isometrics

- Along with stabilization exercises, isometrics can be very useful as part of a strength program:
  - Chest Press and Pull
  - Hips In & Out
  - Partial Squat To Heel Raise



### Exercise To Avoid

- Those with diagnosed lumbar discogenic pain should avoid leg press, seated overhead press, and seated bicep curls
- Those with diagnosed spondylolisthesis avoid behind the head lat pulldown, standing military press, standing bicep curls, and trunk rotation exercises.

### Technique 1: Staggered Stance

- Placing one foot slightly in front of the other
  - Allows for easy weight shift forward/backwards and reducing torsion on the spine during vacuuming, sweeping, raking, or reaching overhead.
  - Promotes more neutral pelvic girdle.
  - Allows you to keep items closer to you when forward or overhead reaching or picking up items.

### Stagger Stance Examples



### Technique 2: Golfer's Lift

- This movement unlocks the hips, allowing motion to occur there and taking the demand off the spine.
- Recruits larger muscles such as the gluteal and hamstrings.
- Place one hand on a support for balance if necessary.



### Golfer's Lift Examples

- Use this technique for:
  - Changing bed sheet without torsion on the spine
  - Picking up lighter objects like keys or a purse
  - Lowering objects to the floor
  - Place your elbow on your thigh when bent over to reduce muscular demand on the paraspinals.



### Technique 3: Push, Don't Pull

- If required to move a large, heavy object try and push it instead of pulling it.
- This allows you to lean into the object and drive with the larger leg muscles.



### Office Ergonomics



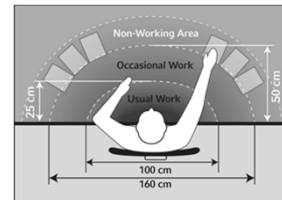
### Is Your Desk Hurting You?

- Trends that may lead to pain:
  1. Overreaching
  2. Incorrect Heights
  3. Unbalanced Workout Area



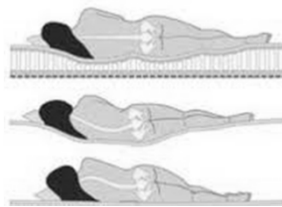
### Arranging Your Office

1. Correct placement of desktop items
2. Correct set up of your chair
3. Correct placement of computer equipment
4. Use foot rests if necessary



### Technique #4: Buy a Good Mattress!

- Americans will spend thousand\$ on a flat screen TV yet buy a cheap mattress
- Choosing a mattress based on your type of back pain can aid in getting you "back happy".
- You spend more time on your mattress than any other piece of furniture



### Support While You Sleep

- Back support is the most important aspect when shopping for a new mattress.
- There is no one mattress that works for everyone.
- Traditionally, firm mattresses were recommended for back pain
  - Highly personal choice

