

Do This (**Not That!**)

Weighing the Risks of Common
Strength Training Exercises

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Bench Dip

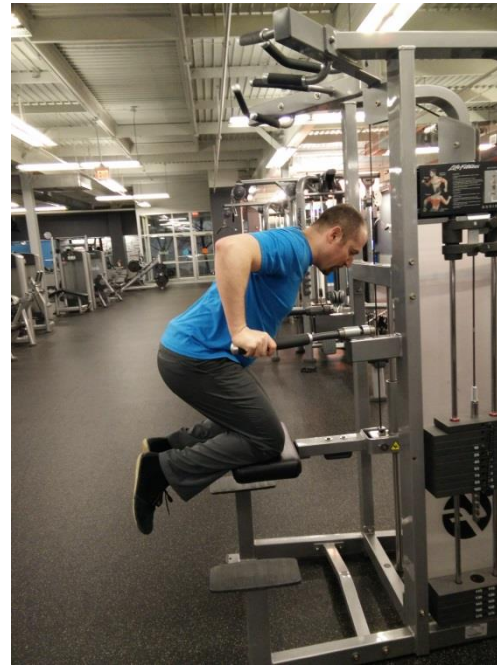
When to do it: **Never**

- Likely to hyperextend the glenohumeral joint of the shoulder ⁽¹⁾
Safe range of motion is **50** degrees of extension



Safer Alternative: Dip (Assisted or Unassisted)

- Bend hips and face down to keep shoulder within your **active range of motion (ROM)**



Behind the Head... Anything...

When to do it: **Never**

- Performed at the extreme end of GH ROM (closed packed position)
- Shoulder (GH) joint = **least stable** joint in body, akin to a golf ball on a tee



Safer Alternatives



Knee Extension

When to do it: **Never**

- The quadriceps and hamstring work together to stabilize the knee joint. This machine causes excessive shear force on the knee.
- Potential to reinforce quadriceps dominance



Safer Alternative: Squat

- Safer exercises typically maximize compression (adjacent bones push into each other at the joint) and minimize shear (force applied perpendicular to the joint)



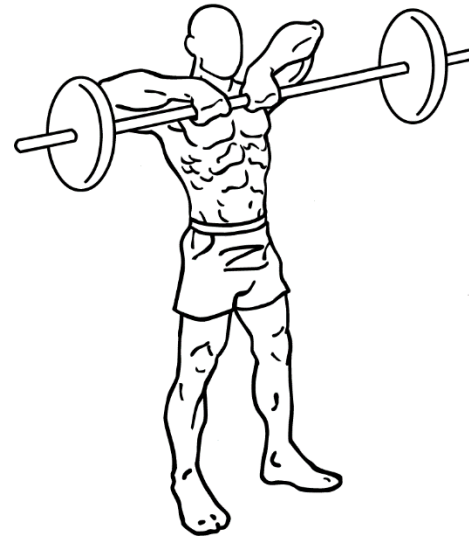
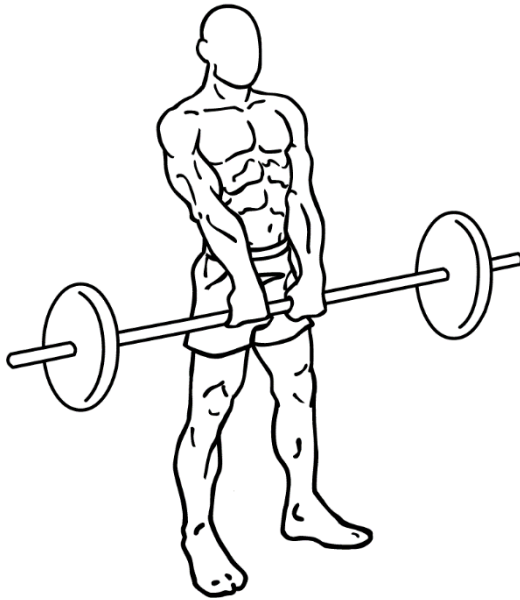
Safer Alternative: **Horizontal Leg Press**



Upright Row

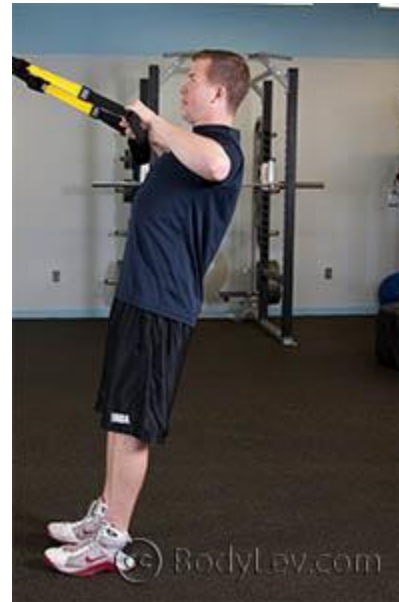
When to do it: **Never**

- Shoulder abduction paired with internal rotation risks an impingement and incremental damage to the shoulder. (2)



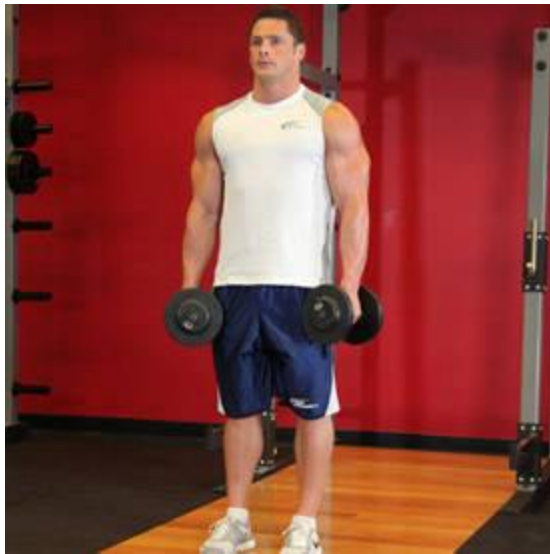
Safer Alternatives

- High Back Row
(Use TRX / Band / Cable / Shoulder-height bar)



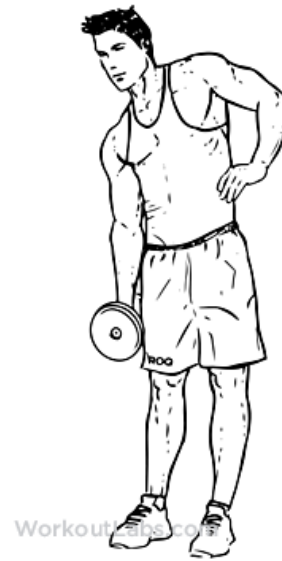
Safer Alternatives (Continued)

- Shoulder Shrug



Standing Lateral Bend

When to do it: **Never**



Safer Alternatives (Continued)

- **Roman Chair or TRX Lateral bend**

To avoid excess pressure on intervertebral discs, position your body so that movements directly oppose the resistive force (e.g. gravity)



Sit-up

When to do it: **Never**

- Sit-up = **slight** spinal flexion (crunch) + **significant** hip flexion.
Prime mover in hip flexion = **Iliopsoas** (not abdominals)
- The **Psoas** connects the low back to the thigh and, in this exercise applies potentially harmful shear force on the vertebral column



Safer Alternatives

Safe



Safer



Dishonorable Mention (Shear Force)

- Supine (lying on back) chest/shoulder exercises can prevent retraction and protraction of the scapulae⁽²⁾, subjecting GH joint to excess shear force
- Flyes (straight elbow shoulder exercises) produce significant shear force on the GH joint
- Forward lunges (traditional lunges) exert undue shear force on the knee. Substitute reverse or stationary lunges where possible.

More resources:

- This Presentation: budser.com/DTNT
- (1) “Follow-up Q and A: Dangerous Dips,” ACE Certified News ([link](#))
- (2) “Sports Medicine Knowledge for Coaches: Keeping the Shoulder Healthy in the Weight Room,” Journal of Coaching Education, Volume 6, Issue 1, Spring 2013, page 67 ([link](#))

Helpful Links:

- <https://www.ideafit.com/fitness-library/training-young-athletes>
- <https://www.acefitness.org/acefit/healthy-living-article/24/5277/train-this-not-that-the-upper-body-edition/>