

From The Triathlete's Training Bible
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ANATOMICAL ADAPTATION (AA) PHASE

Table 13.1

Total Sessions/Phase	8–12
Sessions/Week	2–3
Load (% 1RM)	40–60
Sets/Session	3–5
Reps/Set	20–30
Speed of Lift	Slow
Recovery (in Minutes)	1–1.5

Triathlon Exercises

(in order of completion):

1. Hip extension (squat, leg press, or step-up)
2. Standing bent-arm, lat pull-down
3. Hip extension (different from #1)
4. Chest press or push-ups
5. Seated row
6. Personal weakness (hamstring curl, knee extension, or heel raise)
7. Abdominal with twist

Duathlon Exercises

(in order of completion):

1. Hip extension (squat, leg press, or step-up)
2. Seated row
3. Hip extension (different from #1)
4. Chest press or push-ups
5. Personal weakness (hamstring curl, knee extension, or heel raise)
6. Upper body choice (lat pull-down or standing row)
7. Abdominal with twist

Table 13.2

MAXIMUM TRANSITION (MT) PHASE

Total Sessions/Phase	3–5
Sessions/Week	2–3
Load	Select loads that allow only 10–15 reps*
Reps/Set	10–15*
Speed of Lift	Slow to moderate, emphasizing form
Recovery (in minutes)	1.5–3*

**Note: Only boldfaced exercises follow this guideline. All others continue AA guidelines.*

Triathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. **Standing, bent-arm lat pull-down**

Duathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. Upper body choice (lat pull-down, standing row, chest press, push-ups)

Table 13.3

LOAD GOALS

Squat	1.3–1.7 x BW
Leg press (sled)	2.5–2.9 x BW
Step-up	0.7–0.9 x BW
Seated row	0.5–0.8 x BW
Standing, bent-arm lat pull-down	0.3–0.5 x BW

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**MAXIMUM STRENGTH (MS)
PHASE**

Total Sessions/Phase	8-12
Sessions/Week	2
Load	BW Goal*
Sets/Session	3-6
Reps/Set	3-6+*
Speed of Lift	Slow-Mod*
Recovery (in Minutes)	2-4*

**Note: Only boldfaced exercises follow this guideline. All others continue AA guidelines.*

Triathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. **Standing bent-arm, lat pull-down**

Duathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. Upper-body choice (lat pull-down, standing row, chest press, push-ups)

**STRENGTH MAINTENANCE
(SM) PHASE**

Total Sessions/Phase	Indefinite
Sessions/Week	1
Load (% 1RM)	60, 80 (last set)*
Sets/Session	2-3*
Reps/Set	6-12*
Speed of Lift	Mod*
Recovery (in Minutes)	1-2*

**Note: Only boldfaced exercises follow this guideline. All others continue AA guidelines.*

Triathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. **Standing bent-arm, lat pull-down**

Duathlon Exercises

(in order of completion):

1. **Hip extension (squat, leg press, or step-up)**
2. **Seated row**
3. Abdominal with twist
4. Personal weakness (hamstring curl, knee extension, or heel raise)
5. Upper-body choice (lat pull-down, standing row, chest press, push-ups)

Table 13.4 (left)

Table 13.5 (right)

**PREDICTING YOUR
ONE-REPETITION MAXIMUM**

Table 13.6

REPETITIONS	FACTOR
4	0.917
5	0.889
6	0.861
7	0.833
8	0.805
9	0.778
10	0.750

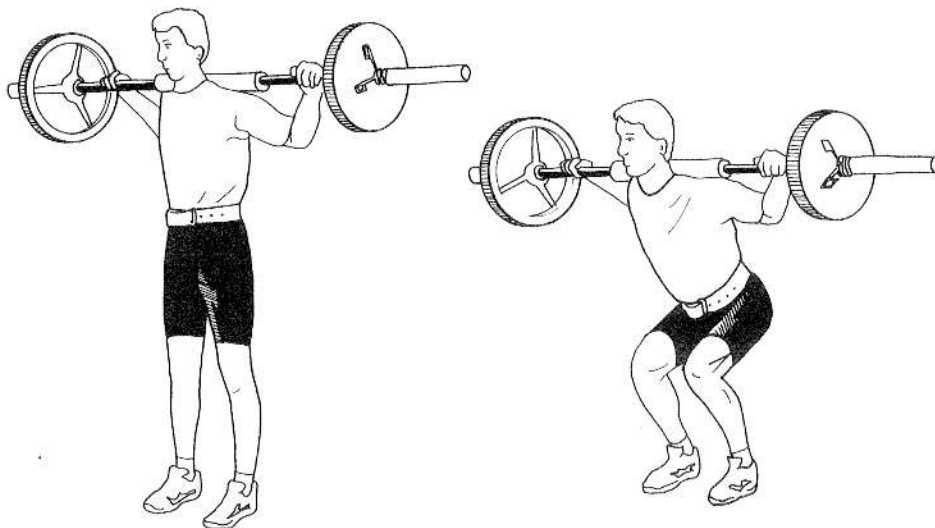


Figure 13.1
Squat

Hip Extension—Step-Up (quadriceps, gluteus, hamstrings)

Improves force delivery to the pedal in cycling. The step-up mimics the movement of pedaling quite closely, but takes more time since each leg is worked individually. Caution is necessary to ensure a stable platform and overhead clearance. The platform height should be about twice the length of your bike's crank arm—about 13 to 15 inches. Do not use a knee-height platform as this is likely to cause knee discomfort and raises the possibility of injury.

1. Place the left foot on a sturdy 13- to 15-inch-high platform with the toes pointing straight ahead.
2. Step up with the right foot touching platform, and immediately return to the start position.
3. Complete all left-leg reps before repeating with the right leg.
4. Stretches: Stork Stand and Triangle.

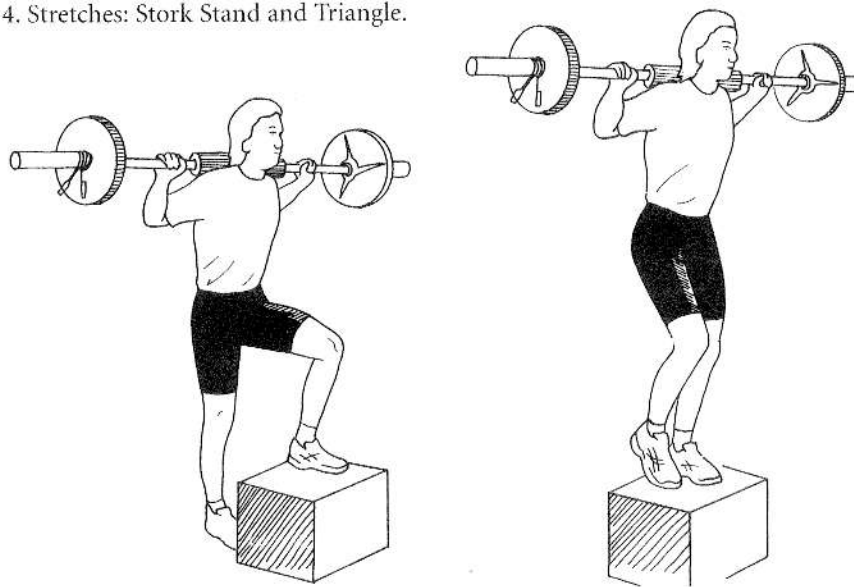


Figure 13.2
Step-Up

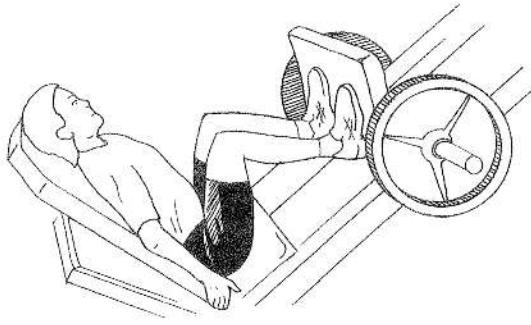


Figure 13.3
Leg Press



Hip Extension—Leg Press (quadriceps, gluteus, hamstrings)

Improves force delivery to the pedal in cycling. This is probably the safest of the hip extension exercises, and generally takes the least time.

1. Center the feet on middle portion of the platform about 10 inches apart, center to center. Feet are parallel, not angled out. The higher the feet are placed on the platform, the more the gluteus and hamstrings are involved. The lower the foot position, the less the gluteus-hamstring use.
2. Press the platform up until legs are almost straight with the knees short of locking out.
3. Lower the platform until knees are about 8 inches from your chest, no lower.
4. Keep knees in line with feet throughout the movement.
5. Return to the start position.
6. Stretches: Stork Stand and Triangle.

Seated Row (upper and lower back, lower lats, biceps)

Simulates the movement of pulling on the handlebars while climbing a hill in a seated position. Strengthens the core—lower back.

1. Grasp the bar with arms fully extended and hands about 8 to 10 inches apart, inside edge to inside edge.
2. Pull the bar toward the lower chest, keeping the elbows close to the body.
3. Minimize movement at the waist, using the back muscles to stabilize position.
4. Return to the start position.
5. Stretch: Pull-Down.

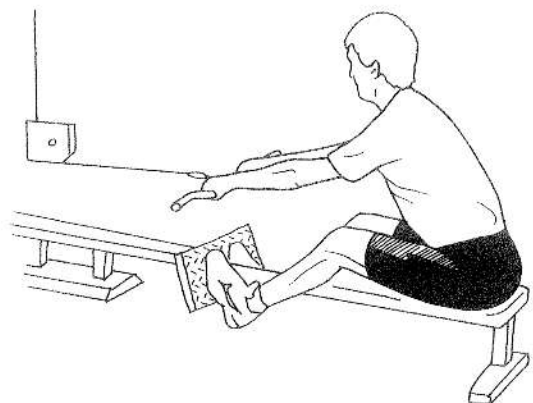
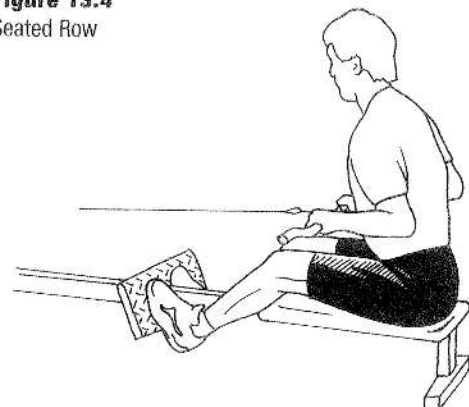


Figure 13.4
Seated Row



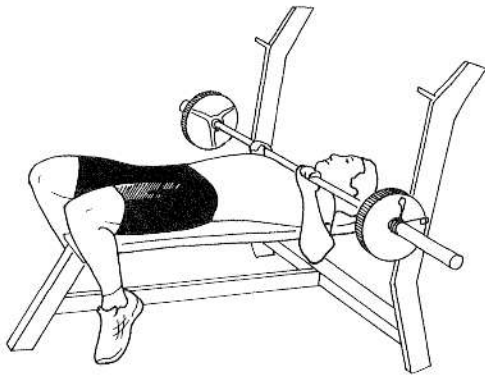
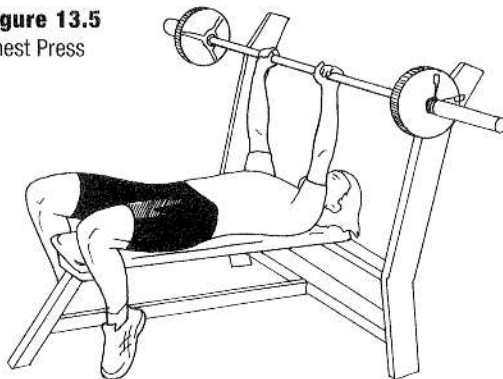


Figure 13.5
Chest Press



Chest Press (pectorals and triceps)

Stabilizes the shoulders for swimming and increases force of the push phase of the stroke. With free weights, a spotter is necessary in the MS phase.

1. Grasp the bar with hands above shoulders and 10 to 14 inches wide.
2. Lower the bar to the chest.
3. Keep the elbows close to the body.
4. Return to the start position.
5. Stretch: Pull-Down.

Push-Up (pectorals and triceps)

Stabilizes the shoulders for swimming and increases force of the push phase of the stroke.

1. Place hands directly below or slightly wider than the shoulders.
2. Keep back straight and head up.
3. Keeping body rigid, lower the body until chest almost touches floor. May be done with knees on floor as strength is developing.
4. Keep elbows in.
5. Return to the start position.
6. Stretch: Pull-Down.

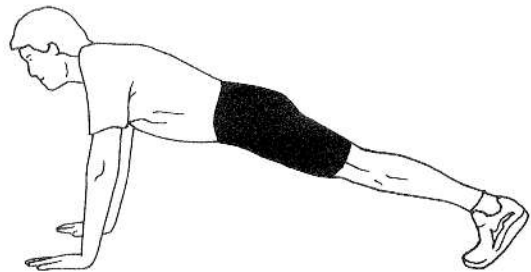
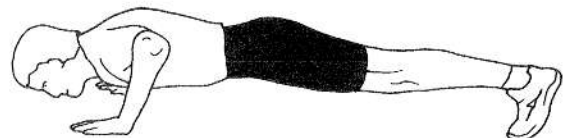


Figure 13.6
Push-Up



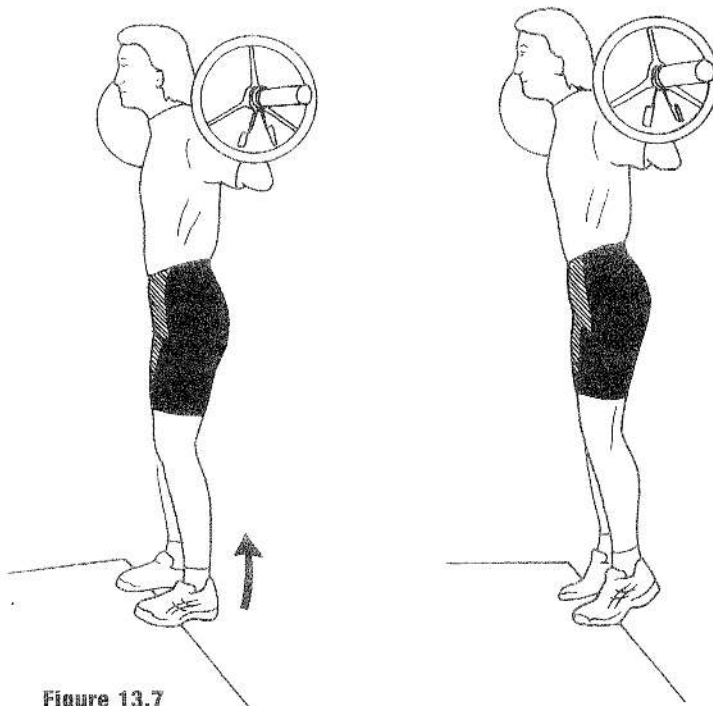


Figure 13.7
Heel Raise

Heel Raise (gastrocnemius)

For athletes who experience calf and Achilles problems, this may reduce susceptibility to such injuries.

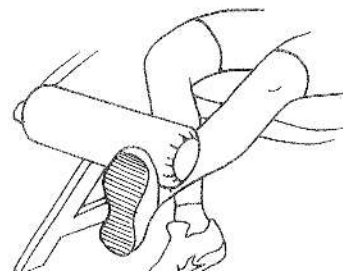
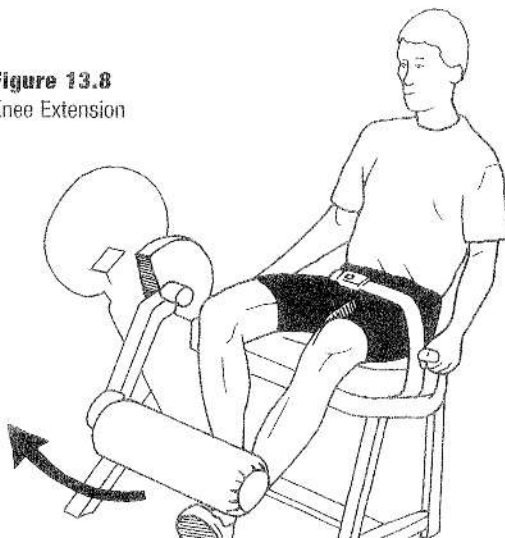
1. Stand with balls of the feet on 1- to 2-inch riser, heels on the floor.
2. Place feet parallel and 6 to 8 inches apart, inside edge to inside edge.
3. Raise up onto the toes.
4. Return to the start position.
5. Stretch: Wall Lean.

Knee Extension (medial quadriceps)

For athletes plagued by kneecap tracking injuries, this exercise may help by improving balance between the lateral and medial quadriceps.

1. Start with knees fully extended and toes pointing slightly to outside.
2. Lower the weight only about 8 inches (do *not* go all the way down).
3. Return to the start position.
4. Stretch: Stork Stand.

Figure 13.8
Knee Extension



Leg Curl (hamstrings)

By strengthening the hamstrings relative to the quads, the strength ratio between these two major movers is improved. Leg curls are done on either prone or standing machines.

1. Curl leg to about a right angle at the knee.
2. Return to the start position.
3. Stretch: Triangle.

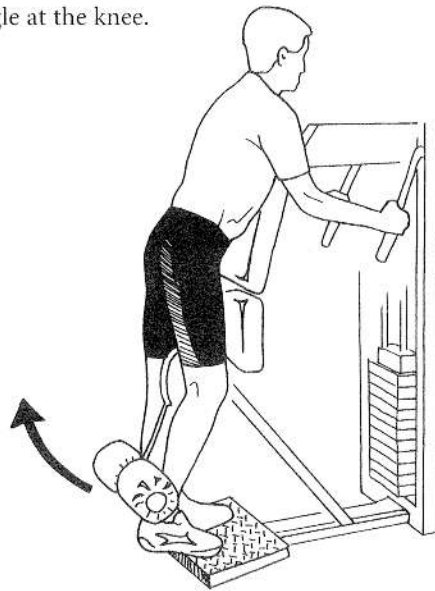


Figure 13.9
Leg Curl

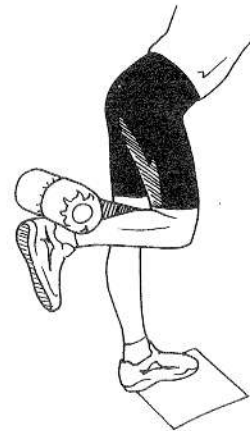
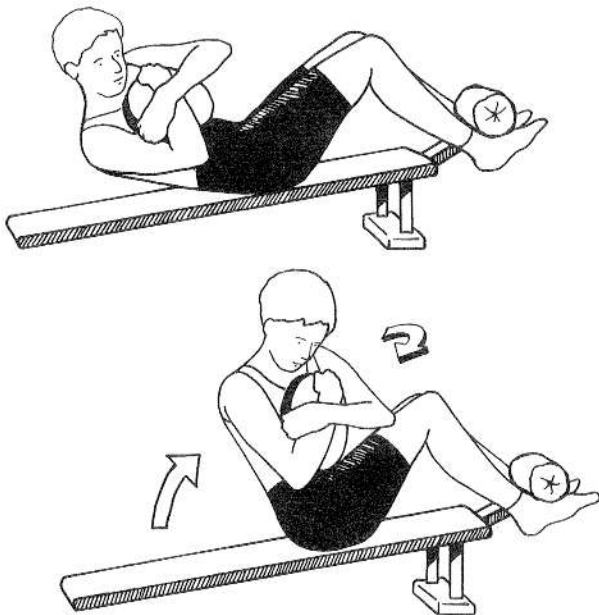


Figure 13.10
Abdominal with Twist

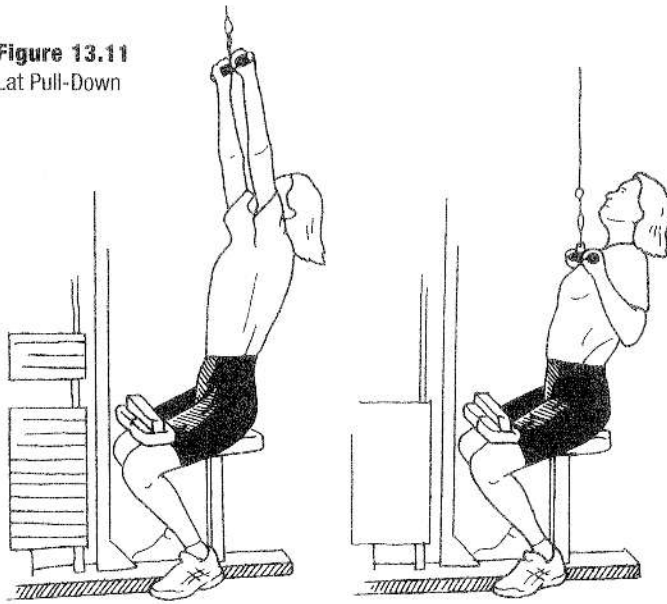


Abdominal with Twist (rectus abdominus, external oblique)

A core exercise to improve transfer of energy from upper to lower body. Also important for maintaining body position in rough, open-water swims.

1. Sit on decline board with the knees bent at about 90 degrees.
2. Cross arms over the chest. Holding a weight plate is optional. (Do *not* pull on the head.)
3. Lower the upper body to about a 45-degree angle to the floor.
4. Return to the start position with a twist. With each repetition, alternate looking over the right and left shoulders as the torso twists to the right and left.
5. Stretch: Arch back and extend arms and legs.

Figure 13.11
Lat Pull-Down



Lat Pull-Down (latissimus dorsi, biceps)

Stabilizes shoulders.

1. Grasp the bar with the arms fully extended and hands 10 to 14 inches apart, inside edge to inside edge.
2. Pull the bar toward the upper chest, keeping elbows close to the body.
3. Minimize movement at the waist and rock, using the back muscles to stabilize position.
4. Return to the start position.
5. Stretch: Pull-Down.

**Standing, Bent-Arm Lat Pull-Down
(latissimus dorsi, rotators)**

Mimics the movement of the swim pull.
Stabilizes shoulders.

1. Standing (or on knees) at the lat pull-down station, position the bar so it is a few inches above the head.
2. Place hands on top of bar, hands 10 to 14 inches apart, inside edge to inside edge, with arms slightly bent at the elbow.
3. While maintaining a high elbow position, push the bar down by rotating the shoulder until the bar is a few inches below the head.
4. Return to the start position.
5. Stretch.

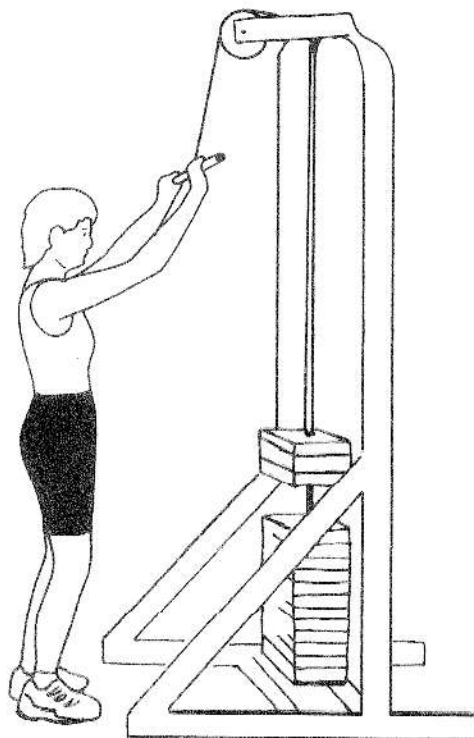
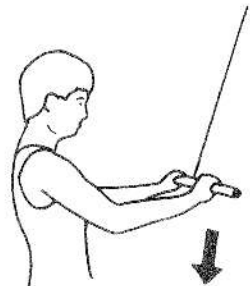


Figure 13.12
Standing, Bent-Arm
Lat Pull-Down



Standing Row (deltoids, biceps)

Stabilizes shoulders.

1. At the low-pulley station (or with free weights), grasp the bar at thigh height with hands 8 to 10 inches apart, inside edge to inside edge.
2. Pull the bar to the chest.
3. Return to the start position.
4. Stretch.

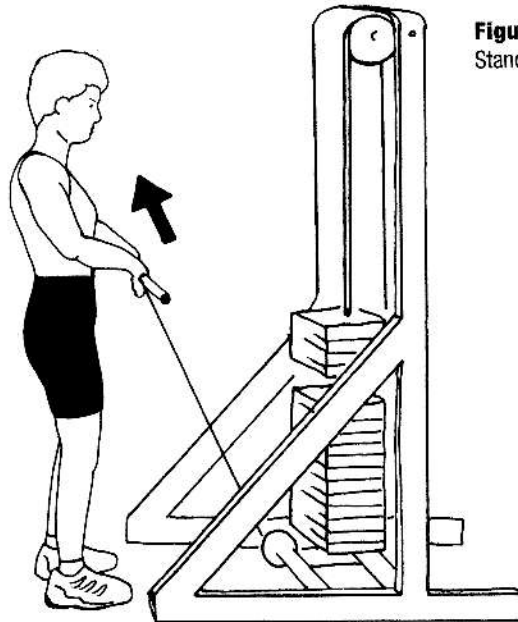


Figure 13.13
Standing Row