# STRENGTH EXERCISES

## Dumbbell Exercise: Bent-over Raises

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nstruction of any resistance training exercise includes several phases: sequential movement description, demonstration of whole and partial movements, execution of the movement, use of instructional aids such as broomsticks, videotape analysis and checklists (if available) and evaluation of the movement. The inclusion of the bent-over raise dumbbell exercise within a resistance training program enables the lifter to isolate and strengthen the supplementary shoulder and upper back muscle groups involved in multi-joint movements and sports skills. The strength and conditioning of the shoulder region is critical, due to its involvement in most movements and activities, and the high demands placed on the musculotendinous and connective tissue structures.

The bent-over raise exercise involves three stages: starting position (**Figure 1**), ascent (**Figures 2** and **3**) and descent (**Figure 4**). Shoulder joint movement during execution of the exercise is horizontal extension and minimal outward rotation. The primary muscle groups involved in the exercise are posterior deltoid, trapezius and rhomboids. The checklist accompanying this article contains guidelines to be used by the coach to evaluate the critical features of the movement.

Instruction of techniques may also be enhanced through the use of sequential photographs of an expert performance or videotape analysis of the performer, both from different viewing angles. These instructional aids may provide important information to the athletes regarding the approximate motor patterns for the lift, as well as feedback about the execution of the lift.

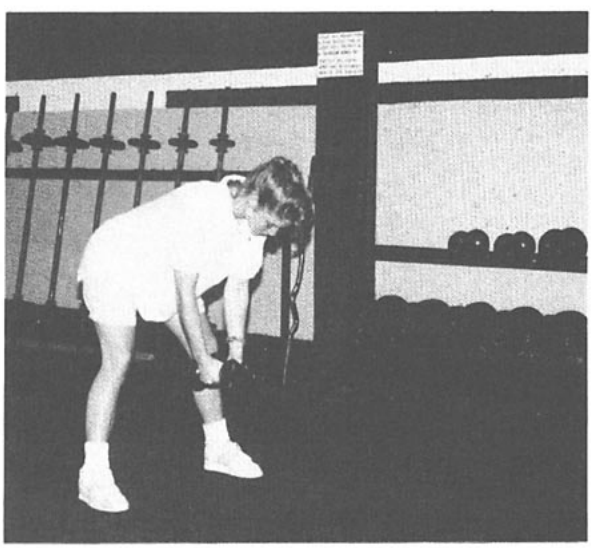

**Figure 1. The Starting Position with Head in Neutral Position**

C.S.C.S. COACHES' SCHOOL

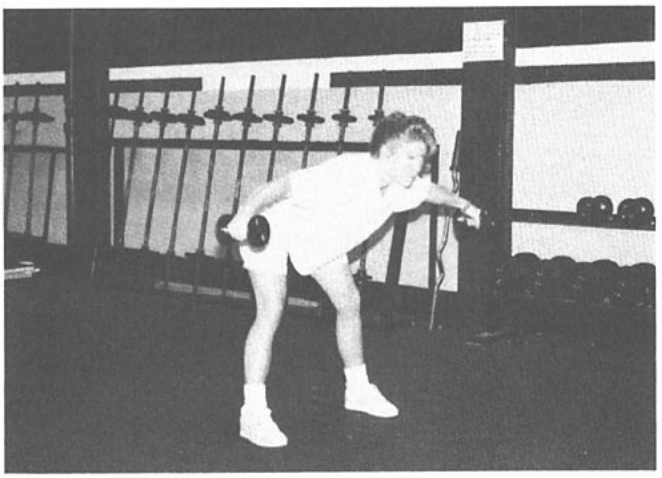

**Figure 2. The Ascent with Head Up**

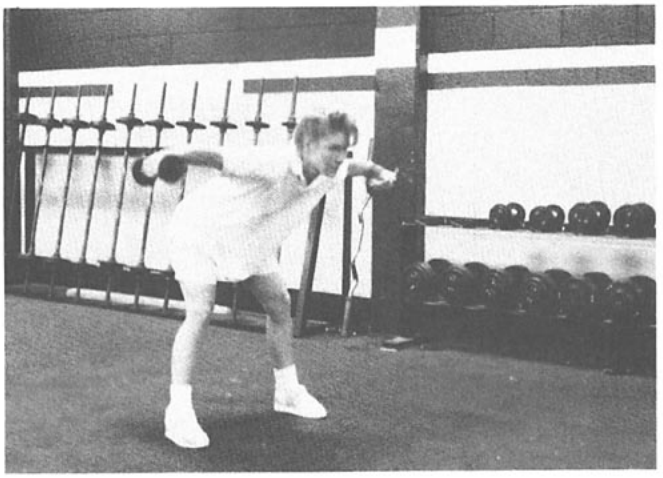

**Figure 3. End of Ascent Phase with Head Up**

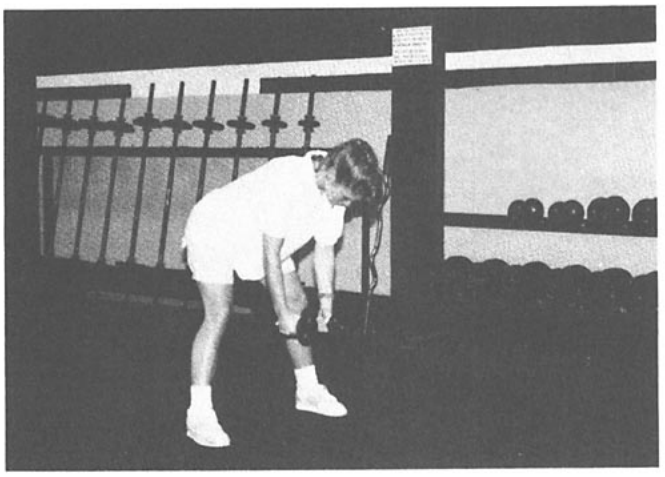

**Figure 4. Ending Position with Head in Neutral Position**

# Execution Checklist for Bent-over Raise Dumbbell Exercise

**Starting Position**

- ☐ Shoulder-width stance, knees slightly bent throughout execution of the exercise.
- ☐ Overhand grip with palms facing together.
- ☐ Trunk is flexed; torso is slightly above horizontal.
- ☐ Torso is "tight."
- ☐ Head is up (viewing mirror) or in neutral position.
- ☐ Arms are extended toward ground.

**Ascent**

- ☐ Dumbbells are moved away from the body.
- ☐ Elbows are slightly bent throughout the movement.
- ☐ Control the dumbbells throughout the movement. Do not use jerky movements.
- ☐ "Squeeze" the shoulder blades together.
- ☐ Pause momentarily at the top of the lift.
- ☐ Legs and back are stationary; work on the shoulders and upper back.
- ☐ Inhale during the ascent phase of the lift.

**Descent**

- ☐ Dumbbells are lowered to the starting position in a slow, controlled manner.
- ☐ Weights should not "crash" at the end of the movement.
- ☐ Maintain stable trunk position.
- ☐ Exhale during the descent phase.

**Note:** during execution of the lift, the athlete should be able to peripherally view the dumbbells. Arms should not be extended back toward the hips.

stimulated with quick movements. These receptors simply initiate nerve impulses that create contraction or resistance in the stretched muscle. Slow movements associated with flexibility exercise are essential if the soft tissues are to be lengthened to a point where ROM training effects can occur.

4. **Hold the stretch position.** Appropriate sensory mechanisms can be stimulated by holding a stretch position for a minimum of 10 seconds. Particular proprioceptors are stimulated when the athlete assumes a static stretch position for 10 to 60 seconds. Golgi tendon organs (GTOs) act as tension sensors, and can be responsible for initiating sensory impulses resulting in reduced resistance to stretched soft tissue. These proprioceptors simply serve to inhibit muscle contraction in the stretched tissue. This relaxation phenomenon does not result when a stretch is performed in quick succession (1, 8).

Relaxation should be considered while moving into a stretch and during the final position. Breathing procedures can be of benefit in promoting relaxation. Therefore, a light exhalation in moving toward the position to be held and a low level inhalation at the terminal position can assist in relaxing soft tissue.

5. **Stretch within anatomical limits.** There is reason to believe that stretching procedures associated with painful maneuvers are unjustified. The cliche "no pain, no gain" is certainly inappropriate and has no relevance in an effective flexibility program. In fact, muscle spindles (proprioceptors) acting as tissue length sensors can fire when pain is experienced during a stretch. This results in contraction rather than relaxation of the involved muscle. Stretch to a point of tension, not pain. It is important, however, to increase tension at the musculotendinous junction where the GTOs are located. These tendon organs must be distorted in shape in order to sense tension. Pain, however, will stimulate muscle spindles (creating resistance) and will not involve the GTOs (contraction inhibitors).

Realizing that some joints have anatomical limitations will not only improve the effectiveness of a stretching program, but will add to safety. The elbow and knee joints, for example, should not be placed into hyperextension. Normal ROM within anatomical limitations, however, is appropriate and needed for all joints.

6. **Stretch all areas of the body.** Flexibility is specific to a joint. You cannot generalize the flexibility of one joint to all areas of the body, nor is there a single ROM exercise that can enhance flexibility for every joint (10). Therefore, it is essential that a flexibility program incorporate a variety of stretching exercises. These exercises should be leveled at all joints in order to provide comprehensive flexibility outcomes. ROM exercise can be viewed as effective for improving motor performance in a particular skill and/or sport, but should also be thought of as a means of elevating personal fitness.

### Most Effective Stretching Technique

Contemporary modified proprioceptive neuromuscular facilitation (PNF) stretching techniques can provide greater increases in ROM than conventional techniques such as passive, static and ballistic stretching. Both acute PNF investigations (2, 4, 5, 6) and PNF training studies (9, 11, 12, 13) provide data pointing to the significant improvements in ROM with the use of PNF stretching techniques when compared to conventional techniques. Articles in future issues of the **NSCA Journal** will focus on PNF stretching techniques.

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