



## DISPLAY 26-12

# Activation Exercises for Trapezius and Serratus Anterior Based on EMG Analysis

### Exercises for Upper Trapezius

- Shoulder shrug (Figure 26-22)<sup>153,155</sup>

### Exercises for Middle Trapezius

- Prone arm lift with arm overhead (Self-Management 26-2, Level IV B)<sup>148,155</sup>
- Prone horizontal extension with lateral rotation (Self-Management 26-2, Level IV A)<sup>148,155</sup>

### Exercises for Lower Trapezius

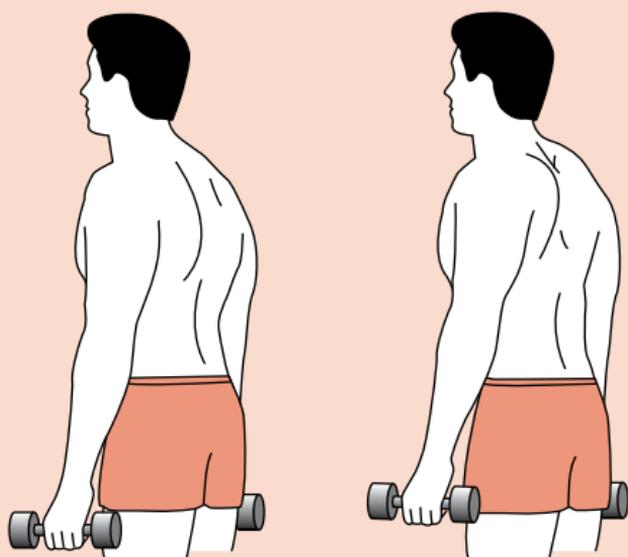
- Prone arm lift with arm overhead (Self-Management 26-2, Level IV B)<sup>155</sup>
- Prone shoulder lateral rotation at 90-degree abduction (Self-Management 26-1)<sup>154,155</sup>
- Prone horizontal extension with lateral rotation (Self-Management 26-2, Level IV A)<sup>153,155</sup>

### Exercises for Serratus Anterior

- NOTE: In general, exercises that create upward rotation of the scapula were found to produce much more EMG activity in the serratus anterior than straight scapular protraction exercises.<sup>150,153,155</sup>
- Shoulder abduction in the plane of the scapula (Fig. 26-8) above 120 degrees (Display 26-7)<sup>148,155</sup>
- Diagonal exercise with a combination of flexion, horizontal flexion, and external rotation (Table 16-1)<sup>155</sup>

### Exercises for simultaneous activation of the trapezius and serratus anterior

- Prone arm lift with arm overhead (Self-Management 26-2, Level IV B)<sup>155</sup>
- Shoulder abduction in the plane of the scapula (Fig. 26-8)<sup>155</sup>



**FIGURE 26-22.** Shoulder shrug.