

Exercise Progression: base on EMG evidence

Rotator Cuff Musculature

| Supraspinatus | | | Infraspinatus | | | Subscapularis | | |
|--|----|----|--|----|----|--------------------------------------|----|-----|
| Exercise | Mn | Sd | Exercise | Mn | Sd | Exercise | Mn | Sd |
| Supine PROM ¹¹ | 1 | 6 | Forward bow ¹¹ | 2 | 2 | Scaption in water slow ¹⁰ | 2 | 1 |
| Side-lying Elevation ⁸ | 2 | 6 | Water scaption slow ¹⁰ | 2 | 2 | Scaption slow ¹⁰ | 6 | 2 |
| Prayer position ¹⁶ | 2 | 2 | Towel slide ¹¹ | 4 | 6 | Scaption fast ¹⁰ | 7 | 2 |
| T-band Supine ⁸ | 2 | 6 | Prayer ¹⁶ | 4 | 3 | Scaption in H2O fast ¹⁰ | 11 | 4 |
| Wash Cloth press-up, hands close ¹¹ | 3 | 7 | Scapular protraction on ball ¹¹ | 4 | 5 | Forward punch ⁹ | 27 | 35 |
| Supine press-up ¹¹ | 4 | 8 | Supine PROM ¹¹ | 4 | 4 | Forward punch ⁶ | 33 | 27 |
| In water scaption slow ¹⁰ | 4 | 4 | Dusting ⁸ | 5 | 4 | Abduction ¹⁵ | 50 | 44 |
| Scapular protraction on ball ¹¹ | 5 | 9 | Side-lying Elevation ⁸ | 7 | 8 | IR low ⁶ | 50 | 23 |
| Forward bow ¹¹ | 5 | 6 | WC press-up, hands close ¹¹ | 7 | 5 | Flexion ¹⁵ | 52 | 42 |
| Quadruped position ¹⁶ | 6 | 10 | Rope/ Pulley ⁸ | 7 | 5 | IR at side ⁹ | 52 | 32 |
| Dusting ⁸ | 7 | 8 | T-bar ⁸ | 8 | 8 | IR mid ⁶ | 53 | 40 |
| Wedge press-up ¹¹ | 8 | 11 | T-band Supine ⁸ | 9 | 6 | Military Press ¹⁵ | 56 | 48 |
| Rope/ Pulley ⁸ | 9 | 9 | Wedge press-up ¹¹ | 9 | 7 | IR high ⁶ | 58 | 38 |
| T-bar elev. Standing ⁸ | 9 | 9 | Supine press-up ¹¹ | 9 | 5 | Dynamic hug ⁶ | 58 | 32 |
| Tripod position ¹⁶ | 10 | 11 | Wall Taps ⁸ | 9 | 7 | Diagonal PNF ⁶ | 60 | 34 |
| Ball Rolls on wall ⁸ | 11 | 10 | WC press-up, hands apart ¹¹ | 11 | 14 | Scaption IR ¹⁵ | 62 | 33 |
| Pointer position ¹⁶ | 12 | 13 | T-bar Ecc ⁸ | 11 | 8 | Rowing narrow grip ⁹ | 64 | 40 |
| Wall Walk | 13 | 9 | Quadruped ¹⁶ | 11 | 8 | Elevation ⁹ | 67 | 70 |
| Push-up position ¹⁶ | 14 | 14 | Land scaption slow ¹⁰ | 11 | 6 | Overhead medicine ball toss | 71 | |
| Water scaption fast ¹⁰ | 17 | 15 | Wall Walk ⁸ | 12 | 10 | Rowing middle grip ⁹ | 88 | 57 |
| Push-up feet elevated position ¹⁶ | 18 | 16 | Active Elevation ⁸ | 13 | 10 | Retraction ⁹ | 98 | 103 |
| Active Elevation ⁸ | 19 | 12 | Ipsilateral shoulder flexion ¹¹ | 13 | 11 | Push up plus ⁶ | 12 | 22 |
| Sh elev. onto step with ball ¹¹ | 21 | 16 | Ball Rolls ⁸ | 14 | 11 | | | |
| ER sidelying | 25 | | Standing press-up | 14 | 6 | | | |
| One arm push-up position | 29 | 20 | On land scaption fast ¹⁰ | 15 | 4 | | | |
| Standing press-up 1# | 29 | 18 | Ipsilateral step-up with ball and step | 18 | 19 | | | |
| Shoulder shrug (elevation) ⁹ | 31 | 20 | Shoulder shrug (elevation) ⁹ | 18 | 9 | | | |
| Seated rowing wide grip | 39 | 16 | Water scaption fast ¹⁰ | 21 | 16 | | | |

| Supraspinatus | | | Infraspinatus | | | Subscapularis | | |
|--|----|----|---|----|----|---------------|--|--|
| Scaption in ER (thumb up) | 41 | 12 | Wall slide ¹¹ | 24 | 16 | | | |
| Overhead medicine ball toss ³ | 41 | | Overhead medicine ball (Decel) ³ | 25 | | | | |
| Forward punch with elastic tubing ⁹ | 49 | 84 | Seated rowing wide grip ⁹ | 31 | 15 | | | |
| Prone ER at 90° ² | 50 | | Overhead medicine ball (Accel) | 31 | | | | |
| Scaption ER (90-120°) ¹⁴ | 53 | | Tripod ¹⁶ | 37 | 26 | | | |
| Scaption in ER (thumb up) ¹⁵ | 64 | 28 | Pointer ¹⁶ | 42 | 33 | | | |
| PHA thumb forward 100° ² | 64 | | Push-up ¹⁶ | 44 | 31 | | | |
| Flexion ¹⁵ | 67 | 14 | ER arm at side ⁹ | 47 | 27 | | | |
| Scaption in IR (thumb down) ¹⁵ | 74 | 33 | Scaption IR to ER (90-120°) ¹⁴ | 49 | | | | |
| PHA @ 100°, (thumb up) ² | 78 | | Push-up feet elevated ¹⁶ | 52 | 32 | | | |
| Scaption IR to ER (30-60°) ¹⁴ | 79 | | Push up (hands together) ¹⁵ | 54 | 31 | | | |
| Military press ¹⁵ | 80 | 48 | PHA thumb to head 100° ² | 55 | | | | |
| | | | Scaption ER ¹⁵ | 60 | 21 | | | |
| | | | Scaption IR to ER(30-60°) ¹⁴ | 60 | | | | |
| | | | | | | | | |
| | | | Flexion ¹⁵ | 66 | 15 | | | |
| | | | PHA IR ¹⁵ | 74 | 32 | | | |
| | | | Abduction ¹⁵ | 74 | 23 | | | |
| | | | PHA 100° ER ² | 78 | | | | |
| | | | | | | | | |
| | | | PER ² | 80 | | | | |
| | | | | | | | | |
| | | | ER on side ¹⁵ | 85 | 26 | | | |
| | | | One arm push-up ¹⁶ | 86 | 56 | | | |
| | | | PHA ER ¹⁵ | 88 | 25 | | | |

Exercise Progression: Scapular Musculature and Middle Deltoid

| Serratus Anterior | | | Lower Trapezius | | | Medial Deltoid | | |
|--|----|----|--|----|----|--|----|----|
| Exercise | Mn | Sd | Exercise | Mn | Sd | Exercise | Mn | Sd |
| Supine PROM ¹¹ | 2 | 2 | WC press-up, hands close ¹¹ | 1 | 1 | Water scaption slow ¹⁰ | 2 | 2 |
| Forward bow ¹¹ | 5 | 4 | Can press-up, supine ¹¹ | 1 | 1 | Prayer ¹⁶ | 2 | 4 |
| Towel slide ¹¹ | 6 | 3 | WC press-up, hands apart ¹¹ | 1 | 2 | Forward bow ¹¹ | 2 | 1 |
| Dusting ⁸ | 7 | 4 | Dusting ⁸ | 1 | 1 | Supine PROM ¹¹ | 3 | 1 |
| T-band Supine ⁸ | 11 | 6 | T-band Supine ⁸ | 1 | 2 | Land scaption slow ¹⁰ | 6 | 3 |
| Side-lying Elevation ⁸ | 11 | 7 | Can press-up, elevated on wedge ⁸ | 2 | 1 | Quadruped ¹⁶ | 6 | 6 |
| WC press-up, hands close ¹¹ | 11 | 6 | Supine PROM ¹¹ | 2 | 2 | Towel slide ¹¹ | 7 | 4 |
| Rope/ Pulley ⁸ | 13 | 5 | Forward bow ¹¹ | 2 | 2 | WC press-up, hands apart ¹¹ | 7 | 3 |
| Ipsilateral step-up, no ball ¹¹ | 15 | 5 | Scapular protraction with UE on ball ¹¹ | 3 | 4 | Scapular protraction on ball ¹¹ | 7 | 4 |
| T-bar ⁸ | 17 | 6 | Towel slide ¹¹ | 3 | 5 | WC press-up, hands close ¹¹ | 7 | 3 |
| Can press-up, supine ¹¹ | 17 | 8 | Ball Rolls ¹¹ | 5 | 4 | Land scaption fast ¹⁰ | 10 | 5 |
| Sh elev. onto step with ball ¹¹ | 18 | 6 | Wall Walk ⁸ | 7 | 5 | Side-lying Elevation ⁸ | 10 | 6 |
| Wall Walk ⁸ | 19 | 4 | Side-lying Elevation ⁸ | 8 | 5 | Can press-up, supine ¹¹ | 11 | 4 |
| Ball Rolls ¹¹ | 22 | 7 | Can press-up, standing ¹¹ | 9 | 5 | T-band Supine ⁸ | 11 | 5 |
| Active Elevation ⁸ | 23 | 7 | Rope/ Pulley ⁸ | 9 | 7 | Tripod ¹⁶ | 12 | 10 |
| Wall Taps ⁸ | 25 | 9 | T-bar ⁸ | 10 | 10 | Dusting ⁸ | 13 | 7 |
| Unilateral Shrug ⁷ | 27 | 17 | T-bar Ecc ⁸ | 12 | 9 | Water scaption fast | 17 | 13 |
| Standing press-up ¹¹ | 29 | 13 | Ipsilateral step-up with ball and step ¹¹ | 13 | 6 | Pointer ¹⁶ | 18 | 10 |
| Shoulder shrug (elevation) ⁹ | 30 | 24 | Wall slide ¹¹ | 18 | 11 | Rope/ Pulley ⁸ | 22 | 9 |
| Arm elevation in line with lower trap ⁷ | 43 | 17 | Wall Taps ⁸ | 19 | 9 | ipsilateral step-up, no ball | 22 | 7 |
| Forward punch ⁹ | 49 | 14 | Active Elevation ⁸ | 19 | 8 | Wall Walk ⁸ | 23 | 6 |
| Bilat. Protraction ⁷ | 53 | 28 | ER sidelying ¹ | 27 | | Wall slide ¹¹ | 23 | 9 |
| ER at 90° Abd. ⁷ | 57 | 22 | Diagonal (flex, horiz.flex, ER) ⁷ | 39 | 15 | Ipsilateral shoulder flexion ¹¹ | 24 | 10 |
| Push up hands apart ¹³ | 57 | 36 | Prone ER at 90 ¹ | 40 | | T-bar ⁸ | 24 | 9 |
| Unilat. shoulder press ⁷ | 62 | 19 | Unilateral row ¹³ | 45 | 17 | T-bar Ecc ⁸ | 25 | 9 |
| Knee push up plus (top to plus) ⁵ | 72 | 27 | Scaption < 80 ⁷ | 50 | 21 | Ball Rolls ⁸ | 25 | 8 |
| Push up plus ¹³ | 80 | 38 | Horiz. Abduction ¹³ | 56 | 24 | Step-up with ball ¹¹ | 25 | 10 |

| Serratus Anterior | | | Lower Trapezius | | | Medial Deltoid | | |
|--|-----|----|--|----|----|--|----|----|
| Military press ¹³ | 82 | 36 | Flexion ¹³ | 60 | 18 | Wall Taps ⁸ | 29 | 9 |
| Scaption ¹³ | 91 | 52 | Scaption ¹³ | 60 | 22 | Standing press-up ¹¹ | 31 | 11 |
| Scaption in ER ⁵ | 92 | 29 | Scaption above 120° ¹² | 61 | 19 | Push-up ¹⁶ | 31 | 16 |
| Serratus anterior punch ⁵ | 94 | 31 | Horiz. Abduction w/ ER ¹³ | 63 | 41 | Active Elevation ⁸ | 32 | 8 |
| Scaption > 120° ⁷ | 96 | 24 | Rowing ¹³ | 67 | 50 | Push-up feet elevated ¹⁶ | 37 | 15 |
| Flexion ¹³ | 96 | 45 | Abduction ¹³ | 68 | 53 | One arm push-up ¹⁶ | 46 | 20 |
| Abduction ¹³ | 96 | 53 | Horiz. Abduction with ER ⁷ | 74 | 21 | Abduction ¹⁵ | 64 | 13 |
| Diagonal (Flex, hor.flex, ER) ⁷ | 100 | 24 | ER at 90° Abd ⁷ | 79 | 21 | Scaption ER ¹⁵ | 72 | 13 |
| Push up plus (top to plus) ⁵ | 104 | 38 | Arm elevation in line with lower trap ⁷ | 97 | 16 | Rowing ¹⁵ | 72 | 20 |
| Dynamic hug ⁵ | 109 | 31 | | | | Military press ¹⁵ | 72 | 24 |
| | | | | | | Flexion ¹⁵ | 73 | 16 |
| | | | | | | PHA ER ¹⁵ | 79 | 20 |
| | | | | | | PHA IR ¹⁵ | 80 | 23 |
| | | | | | | Scaption IR ¹⁵ | 83 | 13 |
| | | | | | | Scaption IR to ER (30-120°) ⁴ | 85 | |

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