

# Treatment Tips for Treating Low-Level Clients



## Low Level Client with Hypotonicity

### Goals:

- Increase proximal and distal AROM and strength
- Improve motor control
- Initiate/facilitate/reinforce independent grasp and release

### Major Focus: Increase recruitment of the weak agonist

### Treatment Suggestions:

#### 1. Ball Placement

If the client's shoulder is very weak and he or she has difficulty consistently positioning the hand in the correct relationship to the ball (1/3rd of the ball protruding from the web space), or he or she bumps the ball around the table while trying to grasp it, you may need to "tee up" the ball (stabilize on table) at first until the shoulder is stronger.

In addition, you may also want to provide hand-over-hand assistance with grasp and release. Be sure to position the client's hand over the ball so that 1/3 of the ball is outside the web space. Have the client experience repeated success with grasping and releasing the ball with your assistance. As the client progresses, start to provide less assistance until independence is achieved.

#### 2. Shoulder Program

- Have the client use a crate that is low enough for repeated success, but high enough to be challenging. The major emphasis is repetitions so increased strength can be achieved. In the beginning, the client may be able to only perform 20 or 30 reps. If necessary, modify the crate height (lower the crate) to increase the repetition count.
- Performing grasp and release to the contralateral side (humeral adduction and IR) is typically easier for the low-level client. To advance, have the client attempt to grasp and release to the ipsilateral side. The exercise will require the client to have some abduction and ER.
- As the shoulder strength improves, it will be important to re-evaluate the client's movement deficits so appropriate exercises can be administered.

#### 3. Biceps Program

- Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). While maintaining grasp, the client should flex the elbow to 45 degrees and return to neutral. Have the client maintain grasp while relaxing the elbow flexors during the descent. The client should straighten the elbow as much as possible and release the ball onto the table; there is no specific target. As the client improves, increase the elbow flexion active range of motion (i.e., 0-90, 0-120 etc.).
- Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). Maintain grasp and perform 0-45 degrees of elbow flexion. Have the client maintain grasp while relaxing the elbow flexors. The client should straighten the elbow as much as possible and release the ball in a small 4-6" tube on table. As the client improves, increase the elbow flexion (i.e., 0-90, 0-120 etc.).
- Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). Maintain grasp and perform 0-45 degrees of elbow flexion. Have the client maintain grasp while relaxing the elbow flexors. The client should straighten the elbow as much as possible and release the ball into a crate on floor or chair on the ipsilateral side. As the client improves, increase the elbow flexion (i.e., 0-90, 0-120 etc.).

#### 4. Strengthen Flexors

Increase the resistance of the springs on the *SaeboFlex* to strengthen finger and thumb flexors.

#### 5. Combine Other Treatment Modalities

- Consider the *SaeboGlide* or *SaeboMAS* for shoulder/elbow strengthening.
- Consider electrical stimulation before/after/during Saebo treatment.

## Low Level Client with Hypertonicity:

### Goals:

- Increase proximal and distal AROM and strength
- Improve motor control
- Decrease hypertonicity
- Initiate volitional isolated multi-joint movement
- Initiate/facilitate/reinforce independent grasp and release

### Major Focus: Teach the client how to “shut off” his or her tone

### Treatment Suggestions:

1. Train the client to bring the hand back to his or her side in between grasp and release reps to “reset” and allow the upper limb (shoulder, biceps and finger flexors) to relax.
2. Keep the ball placement very close to the client’s body so that he or she does not have to reach out far (i.e., less proximal exertion = less biceps spasticity). Less proximal exertion creates less shoulder and elbow flexion and therefore less tone is produced.
3. If the client’s shoulder is very weak and he or she has difficulty consistently positioning the hand in the correct relationship to the ball (1/3rd of the ball protruding from the web space), or he or she bumps the ball around the table while trying to grasp it, you may need to “tee up” the ball (stabilize on table) at first until the shoulder is stronger.

In addition, you may also want to provide hand-over-hand assistance with grasp and release. Be sure to position the client’s hand over the ball so that 1/3 of the ball is outside the web space. Have the client experience repeated success with grasping and releasing the ball with your assistance. As the client progresses, start to provide less assistance until independence is achieved.

### 4. Shoulder Program

- a. Have the client use a crate that is low enough for repeated success, but high enough to be challenging. The major emphasis is repetitions so increased strength can be achieved. In the beginning, the client may be able to only perform 20 or 30 reps. If necessary, modify the crate height (lower the crate) to increase the repetition count.
- b. Performing grasp and release to the contralateral side (humeral adduction and IR) is typically easier for the client. However, please note that tone in the hand may initially increase with horizontal adduction and internal rotation. You may need to adjust the *SaeboFlex* for this increased tone (i.e., shorten the bead line or switch to a stronger spring).

c. To further challenge the client, have him or her attempt to grasp and release to the ipsilateral side. The exercise will require the client to have some abduction and ER.

d. Remember to have the client fully relax at the shoulder, elbow and fingers before the next repetition.

e. As the shoulder strength improves and tone reduces, it will be important to re-evaluate the client’s movement deficits so appropriate exercises can be administered.

### 5. Biceps Program

a. Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). While maintaining grasp, the client should flex the elbow to 45 degrees and return to neutral. Have the client maintain grasp while relaxing the elbow flexors during the descent. The client should straighten the elbow as much as possible and release the ball onto the table; there is no specific target. As the client improves, increase the elbow flexion active range of motion (i.e., 0-90, 0-120 etc.).

b. Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). Maintain grasp and perform 0-45 degrees of elbow flexion. Have the client maintain grasp while relaxing the elbow flexors. The client should straighten the elbow as much as possible and release the ball in a small 4-6” tube on table. As the client improves, increase the elbow flexion (i.e., 0-90, 0-120 etc.).

c. Have the client grasp the ball from the table-top with assistance if needed (stabilize ball or hand-over-hand). Maintain grasp and perform 0-45 degrees of elbow flexion. Have the client maintain grasp while relaxing the elbow flexors. The client should straighten the elbow as much as possible and release the ball into a crate on floor or chair on the ipsilateral side. As the client improves, increase the elbow flexion (i.e., 0-90, 0-120 etc.).

6. The above elbow tasks challenges the client to begin to control different UE muscle groups independently. The client will learn how to relax or shut off one flexor group (i.e., biceps) while sustaining flexion in the hand (i.e., grasping the foam ball).

7. Clients with severe hypertonicity have a difficult time firing the finger flexors while relaxing the elbow flexors. Teach the client to grasp the ball without simultaneously firing the elbow flexors. For example, in a standing position with the elbow straight have the client grasp the ball from the table.

If you notice the biceps activated during the initial grasp (i.e., elbow flexion), pause and verbally cue the client to avoid elbow flexion when squeezing. This process will take repeated attempts before success is seen.

#### **8. Gentle Squeeze**

Clients with severe hypertonicity have a difficult time learning to shut off or relax their finger flexors; they tend to “crush” the ball. Teach the client to avoid over-gripping when squeezing. The lighter the client squeezes the ball, the easier it is for him or her to release. Teach the client to envision the ball as an egg. When squeezing the ball, cue the client to activate the finger flexors slowly and very softly to not break the egg.

#### **9. Grade the Recruitment**

Decrease the resistance of the springs on the SaeboFlex to practice grading the recruitment of the finger and thumb flexors. With a lighter spring, the client will be required to generate minimal recruitment of the finger and thumb flexors. The lighter the squeeze, the less effort required to relax.

#### **10. Reps, Reps, Reps**

Emphasize numerous repetitions for grasp and release. In order to decrease hypertonicity, the client will have to perform hundreds of reps. If the target (i.e., crate) is too high for the client and he or she is unable to achieve numerous reps, then lower the target.

#### **11. Combine Other Treatment Modalities**

- a. Consider the *SaeboGlide* or *SaeboMAS* for shoulder/elbow strengthening.
- b. Consider electrical stimulation before/after/during Saebo treatment.