Additional file 6: Exercises illustrations

**Upper Body— Level 1**

a → Elastic band  
b → Elastic Tubing

### Seated row

Movement will be performed one arm at a time. Patient holds the elastic tubing with the hand and rows back as far as possible.

### Seated chest press

Movement will be performed both arms at the same time. The patient starts by sitting on a chair with theraband wrapped behind the patient’s upper back. From this position the patient slides both hands back as far as comfortably possible, being sure to feel resistance. The patient presses the band forward until the arms are straight out in front of him/her before returning to the starting position.
Upper Body—Level 1

a —> Elastic band  b —> Elastic Tubing

Seated Elbow Flexion

Movement will be performed both arms at the same time. The patient will step on the middle of the band with both feet, trapping it under the arches and holding each end of the band with the palms facing the body. The patient will then slide the hands down the band until the arms are extended, keeping the wrists straight and bending the elbows, moving the hands as close to the shoulders as comfortably possible. The patient will then return to the starting position, keeping the back straight and trying not to bend forward.

Seated elbow extension

Movement will be performed one arm at a time. Initially, the patient will sit on one end of the band, holding the other end with opposite hand. Keeping the body straight, the patient will grasp the band close to the exercising shoulder. The patient will then begin the exercise by pulling the band down and away from the body. The hand is then returned to the original position to complete the exercise. The patient will be instructed to tuck in the stomach.
Upper Body—Level 2

\[a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing}\]

Row (Standing up)\(^b\):

Movement will be performed with both arms at the same time. The patient holds the handle of a tube with the middle of the tube anchored to a stable object. The patient then moves backward placing tension on the tube. He/she pulls the elastic tubing from a position in front of the body with the arms extended until the elbows are behind the body line as far back as possible. The patient should concentrate on bringing both scapulae together.

Standing up chest press\(^a\):

Movement will be performed with both arms at the same time. The patient starts with theraband wrapped behind the patient’s upper back. From this position the patient slides both hands back as far as comfortably possible, being sure to feel resistance. The patient presses the band forward until the arms are straight out in front of him/her before returning to the starting position.
**Upper Body—Level 2**

\[a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing}\]

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**Shoulder flexion (Standing up)**:

Movement will be performed one arm at a time. Taking the end of the theraband by hand and attaching the other end to a support. Starting with arms extended and fists in neutral grip. Raising the arm and keeping the elbow extended forward until the movement is completed at shoulder height. The patient will then return to the starting position.

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**Shoulder extension (Standing up)**:

Movement will be performed one arm at a time. The patient will be standing up facing the support, with one end in the hand that will perform the movement and the other end attached to the support. The patient will pull the band away from the support until the end of the range. The patient will then return to the starting position.
Lower Body—Level 1

\[ a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing} \]

**Knee extension (Seated)**:

Movement will be performed one leg at a time, seated on a chair. The elastic band wrapped around the ankle of the exercising leg with the end held against the ground by the hind leg of the chair, grasping the side of the chair with the hands fused to maintain stability.

**Hamstring curl (Seated)**:

Movement will be performed one leg at a time. The patient will sit on the edge of a chair and place the middle of a tube around the ankle just above the heel. The end of the tube will be anchored to the opposite wall, bending the knee from 10 to 20 degrees with the tube under tension. In performing the movement, the patient will bend the knee as much as possible, dragging the foot across the floor. Then the patient will raise the foot and slowly straighten the knee to return to the starting position.
Lower Body— Level 1

\[ a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing} \]

**Leg press (Lying down)**

Movement will be performed one leg at a time. The patient lies down on his/her back with the middle of a theraband around the arch of the foot, bending the knee toward the chest, while holding the other end of theraband in both hands with elbows bent. The patient should then straighten the knee while trying to keep the back from arching, then for the eccentric phase, the knee should be flexed to the initial position.

**Hip flexion (Lying down)**

Movement will be performed one leg at a time. Lying down on a sturdy table or mat, the patient will attach the elastic tubing to the ankle of the exercising leg, keeping the back straight and flexing the hip against the resistance of the band. Return to the starting position.
Lower Body—Level 1

\[ \text{a} \rightarrow \text{Elastic band} \quad \text{b} \rightarrow \text{Elastic Tubing} \]

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**Ankle plantar flexion (Lying down)**

Movement will be performed one leg at a time. The patient lies down with the legs straight. The length of the band divided in half and placed on the ball of the foot. The patient holds the end of each side of the band next to the hip. The band is pulled while the patient is in a dorsiflex position to create tension. The patient then performs an ankle plantar flexion and returns to the starting position during the eccentric part of the exercise.
Lower Body—Level 2

\[ a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing} \]

**Sitting down and getting up from the chair**:  
The patient sits down with feet at hip width, the middle of a theraband under both feet and the end of the band in each hand with arms extended downward at the sides, pulling the band to produce tension. In order to perform the exercise, the patient stands up from the chair and lowers to the starting position, touching the seat lightly before standing up the next time.

**Knee flexion (Standing up)**:  
Movement will be performed one leg at a time. The patient will stand up with both hands on a handrail and one end of a tube tied to the ankle while standing up. The patient bends the knee against resistance of elastic tubing and returns to the starting position.
**Lower Body—Level 2**

a  $\rightarrow$ Elastic band  b  $\rightarrow$ Elastic Tubing

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**Leg press (Seated)**

Movements will be performed one leg at a time. The patient will sit down on a chair, wrapping the middle of the resistance band around the arch of the foot while holding the ends of the band. The exercise will begin by bringing the knee to chest level and pulling in on the band to create tension. The patient will then extend the leg against the resistance of the band until it is straight. Finally, the patient will let the leg return to the starting position.

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**Hip abduction with elevation (Lying down)**

The hip bilateral abduction movement will be performed with the patient lying down on a sturdy surface or floor with a resistance band wrapped just above the knees. The hips and knees will be bent and the feet flat on the surface/floor. The patient will then abduct the legs moving the knees as far apart as possible and return to the starting position, keeping the hips elevated throughout the movement.
Lower Body—Level 2

\[ a \rightarrow \text{Elastic band} \quad b \rightarrow \text{Elastic Tubing} \]

**Ankle dorsiflexion (Seated)**

Movement will be performed on one leg at a time. The patient will wrap the middle of the band around the instep of the foot. The band is then held against the floor by the opposite foot and the end is run upward to the opposite knee. The patient will then raise the foot attempting to point the toes toward the ceiling and then return to the starting position.