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DISTAL BICEPS TENDON REPAIR

Rehabilitation Protocol

General Information after Elbow Surgery

- Bandage:** Your arm is placed in an above-elbow plaster splint to keep your repair protected and allow it to heal. A sling will be provided to carry the weight of the cast when you are vertical. **Between 10-14 days** after your surgery, your stitches/staples will be removed and a collar and cuff will be recommended.
- Bathing:** You must keep your plaster splint dry until your stitches are removed. You may shower by placing the arm inside a large plastic bag and securing it with a tie above the elbow to prevent the arm from getting wet. If you are taking a bath, do not immerse the operated arm in water.
- Dressing:** Loose fitting clothing and button up, short-sleeved shirts are ideal. Put your operated arm through the arm-hole first, followed by your non-operated arm. During the time you are instructed to wear the collar and cuff, it should be worn over your clothes.
- Driving:** During the time you have the splint and sling, and later when instructed to wear the collar and cuff for protection, you should not drive. You will not safely be able to use your operated side for assistance while in the splint or collar and cuff.
- Ice:** To help reduce pain and swelling, especially after exercises, apply an ice pack to your elbow for 15 minutes at a time. Wait at least 1 hour between applications. Do not apply heat to the operated area.
- Sleeping:** During the time you have been instructed to wear the collar and cuff for protection, it should also be worn at night. You should sleep on your back (preferably) or your non-operated side. When sleeping on your back, place a pillow under your operated arm and elbow to support it. When sleeping on your non-operated side, place a pillow across your chest to support your operated arm.
- Splint/Sling:** You will be shown how to remove/apply the sling before you leave hospital. The sling may also be used during showers after the splint has been removed, so that the collar and cuff stays dry for everyday use.

Distal Biceps Tendon Repair

Procedure

The torn distal biceps tendon was repaired to its normal attachment site on the proximal radius (forearm bone) to restore the symmetry and appearance of the biceps muscle, decrease pain, and improve the strength of your elbow. Two incisions were made to repair the tendon; one at the front of your elbow to retrieve the tendon, and the second at the back of your forearm to re-attach to its normal bump (tuberosity) on the radius bone. The tendon repair must be protected from excessive stretching or forceful movements until it heals (a minimum of 6 weeks).

You must wear the initial plaster splint or the subsequent collar and cuff for protection for a total of 6 weeks after surgery. How far you extend your elbow will be restricted for the first 6 weeks after surgery. Lifting of heavy objects or resisted exercises should be avoided during this time.

Return to contact sports or heavy work is restricted until 5-6 months after surgery.

Expected Outcome

Results are dependent on the length of time between the initial injury and the date of surgery.

The majority of patients report excellent pain relief, high satisfaction with the appearance of the biceps, and improvements in strength comparable to pre-injury levels, especially if the injury was to the dominant arm. Slight restrictions at the end range of forearm rotation may persist.

Protocol

The following is a rehabilitation protocol that has been specifically designed to provide you and your therapist with guidelines and basic instructions to help restore your elbow's range of motion and strength.

You should make an appointment to see a registered physiotherapist or occupational therapist within 2 weeks after your surgery to follow this rehabilitation protocol.

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| <p>Note:</p> <ul style="list-style-type: none">• If more than one procedure was performed during your surgery, the most conservative rehabilitation protocol of the procedures performed should be followed.• This protocol is a general guideline. There may be variations specific to each patient. Please refer to the surgeon and/or therapy referral for any variation.• Your therapist may decide to slightly change or add to the protocol to address your specific needs while still achieving the same goals.• This protocol was developed in conjunction with the Outpatient Rehabilitation Department of St. Joseph's Health Centre. |
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(Revised February 2019)

Distal Biceps Tendon Repair Rehabilitation Protocol

There are 4 phases to the rehabilitation protocol:

PHASE I (Protection): 0 - 2 Weeks after Surgery

The arm is placed in an above-elbow plaster splint immediately after the surgery. This keeps the elbow in neutral forearm rotation and 90° of elbow flexion.

Neck and Hand Exercises – these exercises help to regain and maintain full mobility of your neck and the joints above and below the operated elbow.

PHASE II (Controlled Motion): 2 - 6 Weeks after Surgery

A collar and cuff is recommended to support your arm, and gentle passive range of motion is initiated.

Passive Range of Motion Exercises- these exercises involve using the other arm to gently move the relaxed operated arm and prevent elbow stiffness. Movements should be **done gently and with minimal pain**. No forceful movements or stretching should be performed.

Elbow extension: restricted to 45°.

Forearm Rotation: full rotation between supination and pronation is allowed while the elbow is maintained at 90° of flexion.

PHASE III (Progressive Motion): 6 - 12 Weeks after Surgery

Use of the collar and cuff may be discontinued.
Range of motion may be progressed to full extension.

Active Assisted Range of Motion Exercises – these exercises involve using the operated arm with help from the other arm to initiate movement. Movements should be done gently and with minimal pain.

Active Range of Motion Exercises – these exercises involve using the operated arm without help from the other arm to move through the available range of motion.

PHASE IV (Strengthening & Function): 12+ Weeks after Surgery

Strengthening is initiated with resistance and progressed through functional activities. Full range of motion is restored with end range passive stretches, as necessary.

Resistive Strengthening Exercises – strengthening is progressed using light resistance with weights or elastic bands.

Passive End Range of Motion Exercises – these exercises involve applying gentle force to the operated arm at the end range of extension, pronation and supination.

Functional Exercises – these exercises incorporate your work and functional demands.

PHASE I (Protection): 0 - 2 Weeks after Surgery

Perform the following exercises during Phase I, 3 times a day.

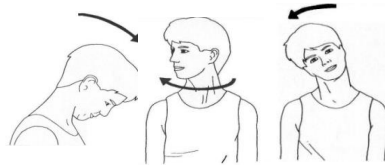
NECK, ELBOW AND HAND EXERCISES

Hold each exercise for 5 seconds and repeat 10-20 repetitions

Neck

Start with chin tucked.

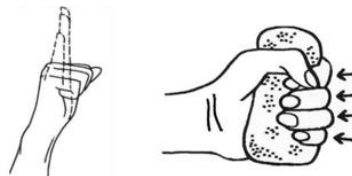
Move your head forward and back to starting position, turn your head side to side, and tilt your head side to side.



Hand

Gently open and close your hand.

Gently squeeze a soft sponge.



PHASE II (Controlled Motion): 2 - 6 Weeks after Surgery

You may remove your collar and cuff to perform the exercises in this Phase.

Perform the following exercises in Phase II, 3 times a day.

For each of the following exercises: Hold for 5 seconds. Repeat 10-20 times

PASSIVE RANGE OF MOTION EXERCISES

These movements involve using your unaffected arm to gently move the **relaxed** operated arm through the specified range of motion.

No forceful movements or stretching should be performed to try to increase range. Range of motion is restricted as follows.

Elbow Flexion/Extension With Extension Restriction

Gently bend and straighten the elbow to a maximum of **45° extension**.

Extension limited to 45°



Forearm Pronation/Supination

Place your forearm on a table for support and position your elbow at 90°. Keep your elbow firmly against the side of your body.

Gently rotate your forearm by moving the palm to face up and then face down.

Supination



Pronation



PHASE III (Progressive Motion): 6 -12 Weeks after Surgery

Perform the following exercises during Phase III, 3 times a day.

For each of the following exercises: Hold 5 seconds. Repeat 10-20 repetitions.

ACTIVE-ASSISTED RANGE OF MOTION EXERCISES

These exercises involve using the operated arm with assistance from the other arm. **No forceful movements or stretching should be performed.**

Elbow Flexion/Extension

Gradually progress extension (straightening) by 15° each week until full extension.



Forearm Pronation/Supination

With the elbow flexed to 90°, gently rotate your forearm, from palm up to palm down positions, with the assist of non-operated hand.



ACTIVE RANGE OF MOTION EXERCISES

Once you are comfortable, you can progress to performing range of motion, through its available range, with your operated arm with the assistance of non-operated side. You may start to use your arm for gentle functional activities (bathing, dressing and eating).

PHASE IV (Strengthening & Function): 12+ Weeks after Surgery

During Phase IV, you may progress to combined movements of elbow flexion/supination and elbow extension/pronation. At 12 weeks light resistance with weights or elastic bands may be added, when full range of motion at the elbow is achieved.

Perform the following exercises during Phase IV, 2 times a day.

RESISTIVE STRENGTHENING EXERCISES

For each of the following exercises: Hold 5 seconds. Repeat 10-20 times.

ELBOW STRENGTHENING

Elbow Flexion

Sitting/standing, step on the exercise band to fix band to the floor

Slowly bend your elbow, hold for a count of 5 seconds.

Return to starting position.



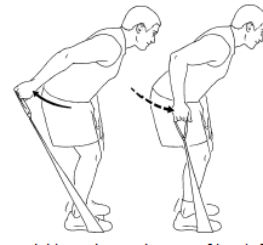
Elbow Extension

Starting from a leaning forward position, with your foot standing on exercise band.

Extend your elbow, by reaching back.

Hold for a count of 5 seconds.

Return to starting position.



Elbow Pronation and Supination

Sitting with forearm supported and elbow flexed at 90°

Holding an object or small weight, start turning to palm down.

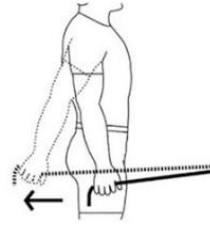
Slowly return to palm up position.



Low Row

Starting, beginning with your arm at your side. Think about squeezing your shoulder blades together through the entire movement, bringing arms slight backward.

Slowly bring your arm back to the start position.



Seated Row

Start with your elbows bent 90° by your side. Pull your arms backward against resistance while concentrating on keeping your shoulders down and squeezing your shoulder blades together.



External Rotation

Keep your elbow at your side and flexed to 90°. Rotate your arm outward against resistance. Slowly return to starting position.



Internal Rotation

Keep your elbow at your side and flexed to 90°. Rotate your arm inward against resistance. Slowly return to starting position.

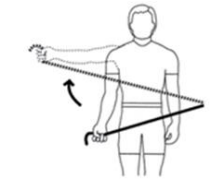


Forward Elevation in the Scapular Plane

Lift your operated arm away from your side, to about shoulder level.

Keep the plane of your arm movement about 30° in front of the plane of your body.

Slowly return to starting position.



PASSIVE END RANGE OF MOTION EXERCISES

Follow the same instructions as for the Active Range of Motion Exercises, but the force applied at end-range will be controlled and gentle.

FUNCTIONAL EXERCISES

These exercises may be added to the protocol by your therapist to incorporate your specific work and/or functional demands. Return to heavy work contact sports restricted until 5-6 months after surgery.



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MODIFIED DISTAL BICEPS TENDON REPAIR

Rehabilitation Protocol

General Information after Elbow Surgery

- Bandage:** Your arm is placed in an above-elbow plaster splint to keep your repair protected and allow it to heal. A sling will be provided to carry the weight of the cast when you are vertical. **Between 10-14 days** after your surgery, your stitches/staples will be removed and a custom removable thermoplastic splint will be fabricated.
- Bathing:** You must keep your plaster splint dry until your stitches are removed. You may shower by placing the arm inside a large plastic bag and securing it with a tie above the elbow to prevent the arm from getting wet. The custom thermoplastic splint may get wet. It can be used in the shower and removed after the shower for drying. If you are taking a bath, do not immerse the operated arm in water.
- Dressing:** Loose fitting clothing and button up, short-sleeved shirts are ideal. Put your operated arm through the arm-hole first, followed by your non-operated arm. During the time you are instructed to wear the collar and cuff, it should be worn over your clothes.
- Driving:** During the time you have the splint and sling, and later when instructed to wear the collar and cuff for protection, you should not drive. You will not safely be able to use your operated side for assistance while in the splint or collar and cuff.
- Ice:** To help reduce pain and swelling, especially after exercises, apply an ice pack to your elbow for 15 minutes at a time. Wait at least 1 hour between applications. Do not apply heat to the operated area.
- Sleeping:** During the time you have been instructed to wear the collar and cuff for protection, it should also be worn at night. You should sleep on your back (preferably) or your non-operated side. When sleeping on your back, place a pillow under your operated arm and elbow to support it. When sleeping on your non-operated side, place a pillow across your chest to support your operated arm.
- Splint/Sling:** You will be shown how to remove/apply the sling before you leave hospital. The sling may also be used during showers after the splint has been removed, so that the collar and cuff stays dry for everyday use.

Modified Distal Biceps Tendon Repair

Procedure

Surgery after a torn distal biceps tendon is performed to restore the symmetry and appearance of the biceps muscle, decrease pain, and improve the strength of your elbow. This modified protocol is used if the distal biceps tendon repair to its normal attachment site on the proximal radius (forearm bone) could be achieved but with significant tension, if the surgery is a revision of a previous repair, or if a tendon graft was required. Two incisions were made to accomplish the surgery; one at the front of your elbow, and the second at the back of your forearm. The repair or reconstruction must be protected from excessive stretching or forceful movements until it heals (a minimum of 8 weeks).

You must wear the initial plaster splint and the subsequent splint for protection for a total of 8 weeks after surgery. How far you extend your elbow will be restricted for the first 8 weeks after surgery. Lifting of heavy objects or resisted exercises should be avoided during this time.

Return to contact sports or heavy work is restricted until 6-9 months after surgery.

Expected Outcome

Results are dependent on the length of time between the initial injury and the date of surgery.

The majority of patients report excellent pain relief, high satisfaction with the appearance of the biceps, and improvements in strength comparable to pre-injury levels, especially if the injury was to the dominant arm. Slight restrictions at the end range of forearm rotation may persist.

Protocol

The following is a rehabilitation protocol that has been specifically designed to provide you and your therapist with guidelines and basic instructions to help restore your elbow's range of motion and strength.

You should make an appointment to see a registered physiotherapist or occupational therapist within 2 weeks after your surgery to follow this rehabilitation protocol.

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| <p>Note:</p> <ul style="list-style-type: none">• If more than one procedure was performed during your surgery, the most conservative rehabilitation protocol of the procedures performed should be followed.• This protocol is a general guideline. There may be variations specific to each patient. Please refer to the surgeon and/or therapy referral for any variation.• Your therapist may decide to slightly change or add to the protocol to address your specific needs while still achieving the same goals.• This protocol was developed in conjunction with the Outpatient Rehabilitation Department of St. Joseph's Health Centre. |
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(Revised April 2019)

Modified Distal Biceps Tendon Repair Rehabilitation Protocol

There are 4 phases to the rehabilitation protocol:

PHASE I (Protection): 0 - 2 Weeks after Surgery

The arm is placed in an above-elbow plaster splint immediately after the surgery. This keeps the elbow in neutral forearm rotation and 90° of elbow flexion.

Neck and Hand Exercises – these exercises help to regain and maintain full mobility of your neck and the joints above and below the operated elbow.

PHASE II (Controlled Motion): 2 - 8 Weeks after Surgery

A custom removable thermoplastic splint is recommended to support your arm, and gentle passive range of motion is initiated.

Passive Range of Motion Exercises - these exercises involve using the other arm to gently move the relaxed operated arm and prevent elbow stiffness. Movements should be **done gently and with minimal pain**. No forceful movements or stretching should be performed.

Elbow extension: restricted to 75° from 2-4 weeks and gradually increase 15° extension every 2 weeks.

Forearm Rotation: full rotation between supination and pronation is allowed while the elbow is maintained at 90° of flexion.

PHASE III (Progressive Motion): 8 - 16 Weeks after Surgery

Use of the thermoplastic splint is weaned then discontinued.

Range of motion in extension restricted to 60° initially and progressed over the period of this phase.

Active Range of Motion Exercises – these exercises involve using the operated arm without help from the other arm to move through the available range of motion.

PHASE IV (Strengthening & Function): 16+ Weeks after Surgery

Strengthening is initiated with resistance and progressed through functional activities. Full range of motion is restored with end range passive stretches, as necessary.

Resistive Strengthening Exercises – strengthening is progressed using light resistance with weights or elastic bands.

Passive End Range of Motion Exercises – these exercises involve applying gentle force to the operated arm at the end range of extension, pronation and supination.

Functional Exercises – these exercises incorporate your work and functional demands.

PHASE I (Protection): 0 - 2 Weeks after Surgery

Perform the following exercises during Phase I, 3 times a day.

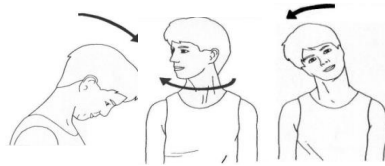
NECK, ELBOW AND HAND EXERCISES

Hold each exercise for 5 seconds and repeat 10-20 repetitions.

Neck

Start with chin tucked.

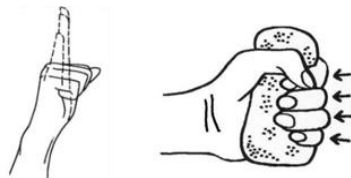
Move your head forward and back to starting position, turn your head side to side, and tilt your head side to side.



Hand

Gently open and close your hand.

Gently squeeze a soft sponge.



PHASE II (Controlled Motion): 2 - 8 Weeks after Surgery

You may remove your custom thermoplastic splint to perform the exercises in this Phase.

Perform the following exercises in Phase II, 3 times a day.

For each of the following exercises: Hold for 5 seconds. Repeat 10-20 times.

PASSIVE RANGE OF MOTION EXERCISES

These movements involve using your unaffected arm to gently move the **relaxed** operated arm through the specified range of motion.

No forceful movements or stretching should be performed to try to increase range. Range of motion is restricted as follows.

Elbow Flexion/Extension With Extension Restriction

Gently bend and straighten the elbow to a maximum of **75° extension from 2-4 weeks.**

Gradually increase 15° to the extension limit every **2 weeks.**



Extension limited

Forearm Pronation/Supination

Place your forearm on a table for support and position your elbow at 90°. Keep your elbow firmly against the side of your body.

Gently rotate your forearm by moving the palm to face up and then face down.

Supination



Pronation



PHASE III (Progressive Motion): 8 - 16 Weeks after Surgery

Perform the following exercises during Phase III, 3 times a day.
At 8 weeks you may slowly discontinue the use of your splint.

For each of the following exercises: Hold 5 seconds. Repeat 10-20 repetitions.

ACTIVE RANGE OF MOTION EXERCISES

Once you are comfortable, you can progress to performing range of motion, through its available range, with your operated arm without the assistance of non-operated side. You may start to use your arm for gentle functional activities (bathing, dressing and eating).

No forceful movements or stretching should be performed.

Elbow Flexion/Extension

Gradually continue to progress extension limit (straightening) by 15° every two weeks.



Forearm Pronation/Supination

With the elbow flexed to 90°, gently rotate your forearm, from palm up to palm down positions, with the assist of non-operated hand.



PHASE IV (Strengthening & Function): 16+ Weeks after Surgery

During Phase IV, you may progress to combined movements of elbow flexion/supination and elbow extension/pronation. At 16 weeks light resistance with weights or elastic bands may be added, when full range of motion at the elbow is achieved.

Perform the following exercises during Phase IV, 2 times a day.

RESISTIVE STRENGTHENING EXERCISES

For each of the following exercises: Hold 5 seconds. Repeat 10-20 times.

ELBOW STRENGTHENING

Elbow Flexion

Sitting/standing, step on the exercise band to fix band to the floor.

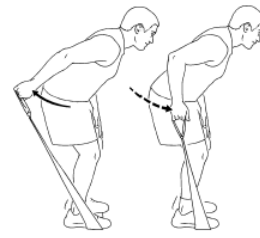
Slowly bend your elbow, hold for a count of 5 seconds.
Return to starting position.



Elbow Extension

Starting from a leaning forward position, with your foot standing on exercise band.

Extend your elbow, by reaching back.
Hold for a count of 5 seconds.
Return to starting position.



Elbow Pronation and Supination

Sitting with forearm supported and elbow flexed at 90°

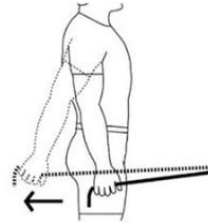
Holding an object or small weight, start turning to palm down.
Slowly return to palm up position.



Low Row

Starting, beginning with your arm at your side. Think about squeezing your shoulder blades together through the entire movement, bringing arms slightly backward.

Slowly bring your arm back to the start position.



Seated Row

Start with your elbows bent 90° by your side. Pull your arms backward against resistance while concentrating on keeping your shoulders down and squeezing your shoulder blades together.



External Rotation

Keep your elbow at your side and flexed to 90°. Rotate your arm outward against resistance. Slowly return to starting position.



Internal Rotation

Keep your elbow at your side and flexed to 90°. Rotate your arm inward against resistance. Slowly return to starting position.

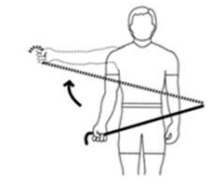


Forward Elevation in the Scapular Plane

Lift your operated arm away from your side, to about shoulder level.

Keep the plane of your arm movement about 30° in front of the plane of your body.

Slowly return to starting position.



PASSIVE END RANGE OF MOTION EXERCISES

Follow the same instructions as for the Active Range of Motion Exercises, but the force applied at end-range will be controlled and gentle.

FUNCTIONAL EXERCISES

These exercises may be added to the protocol by your therapist to incorporate your specific work and/or functional demands. Return to heavy work contact sports restricted until 6-9 months after surgery.