

Arthroscopic reconstruction of supra / infraspinatus tendon including Pitch-Patch Augmentation

This surgical intervention includes suturing the superior (supraspinatus) and upper posterior (infraspinatus) tendon of the rotator cuff back on to the humeral head. This is often accomplished by use of an anchor fixation with double-row suture. The anchors are inserted into the bone. The threads hanging on the posterior end are used to suture the tendon to the bone. Afterwards, the bone needs to adhere to the tendon. In order to ensure that this can happen, the individual healing phases of bones/tendons have to be taken into account during the recovery process. For this reason, the patient is given a cushion which brings the arm into an abduction angle of 30 to 40°. This way, the pressure on the suture is relieved and the blood circulation in the wound area improves.

Introduction on the use of the therapy brochure

The objective of follow-up treatments after performing surgery on a shoulder is the rehabilitation and full recovery of functionality in every life and for leisure activities.

This is accomplished on the basis of the physiological knowledge of wound healing as well as anatomical conditions. Due to the capability of operated tissue to adapt to strain, pressure or different functions, the active participation of the patient in the healing process is of crucial importance. We, as treating professionals consult and support the convalescing patient in this process.

The following guidelines show the treatment framework. We have divided it into three phases using the colours red, orange and green.

Red

In this early phase, the recently operated tissue is in an acute state of inflammation. Swelling and pain management is the main focus. Any movement that causes pain should be avoided since this slows down the healing process. Therefore, the immobilisation of the affected structure is of vital importance. In order to get patients to participate in the following therapies, they must be carefully informed so that they can understand the meaning and purpose of immobilisation. Uncontrolled activities leading to new lesions will delay the healing process and bring about risks of the pain becoming chronic. Different measures to relieve pain and decrease the swelling help to prepare the patient for the next phase.

Orange

Once the operated structures have reached a certain resistance to tearing (10 to 30%), strain can be applied on them in a careful manner. Depending on the structures of the operated connective tissue, flexibility, strength and coordination are improved. By using a varied, target-oriented therapy, natural movement patterns can be practiced. The main goal here continues to be the achievement of a best possible pain-free shoulder (and not maximum joint flexibility!).

Green

During the late phase of recovery, the patient goal is to regain full functionality of the operated shoulder. At the same time, correct preventive measures are used to avoid a recurrence of the injury. The design of this phase greatly depends on the requirements and physical condition of the patients and thus, varies widely when it comes to length and intensity. According to the principles of the rehabilitation protocol, the therapist will create a programme with the patient that enables them to deal with activities in everyday life and to perform sports activities. After completing the therapy, the patient will have knowledge of how they can maintain the mechanical strength of their shoulder and which preventive measures they should apply in the future.

Physiotherapeutic measures

WEEK 1

- No mobilisation of the shoulder (neither active nor passive)
- Instructions for active mobilisation of shoulder girdle, elbow and hand (↑metabolism)
- Lymphatic drainage (↓swelling, ↓tone of sympathetic nervous system)
- Massage for tension relief in surrounding structures (shoulder girdle, neck)
- Analgesic measures (application of cold, electrotherapy and others)
- Tips on appropriate behaviour in activities of daily living (ADL's) (putting on clothes or removing them, position in bed, etc.)
- Temporary adduction allowed, minimise risk of tearing!



WEEK 2 to 6

- Proceed as in week 1
- Recommended, start with passive mobilisation from 40 degrees upwards as pain allows.
- Splint up to 40° degrees until pain threshold
- No active movement
- Light exercises to stabilise shoulder girdle



Information and tips for patients

WEEK 1

- Wearing abduction cushion (reduces tendon tensile loading by 1/3)
- Occasionally, the cushion can be removed briefly (for hygienic reasons)
- Positioning in bed supported by cushions and towels in shoulder and arm area is recommended. Head end should be in high position.
- Daily movements of shoulder girdle, elbow and hand (instructions given by physiotherapist)

Movement exercises:



- Cold-pack for pain relief as required
- A balanced, healthy, vitamin-rich diet, drinking lots of water as well as getting lots of rest are helpful to keep the inflammation parameters low and support the healing process. In general, it is recommended to cut down on the meat and alcohol consumption.
- Smoking may also slow down the healing process.
- Pain management: With regard to medication please note the following: anti-inflammatory medication can inhibit the natural healing process. Pain is a warning signal and serves as protection from tissue damage. The intake of painkillers leads to a reduction of these warning signals. Change of medication and dose should be discussed with the treating physician.

WEEK 2 to 6

- Continue as in week 1
- Pendulum exercises
- Starting from week 2, use of exercise bike is allowed (↑blood circulation)
- Starting from week 3 use of recreational use of hot tubs/spas is allowed
- Use of splint at 40 degrees as pain allows but not exceeding the pain threshold
- Use of bio oil. Protection of scar from sunlight

Home exercises:



Physiotherapeutic measures

WEEK 7 to 11

- 15 – 20% tear resistance
- Massage
- Analgesic measures (additional application of heat allowed)
- Start of active and assistive mobilisation with transition to active mobilisation without additional strain on pain free area. Otherwise, free range of motion.
- Exercises for control and engagement of musculature near tendon or for centering of the shoulder joint (e.g. Muscle-Balance)
- Passive manual joint techniques (grade I – II)
- Exercises for stabilising the shoulder girdle with light weights

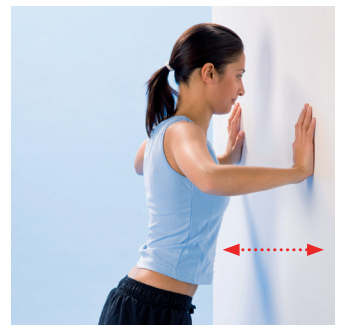
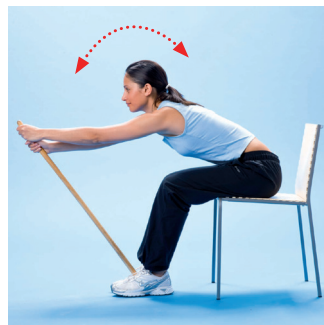
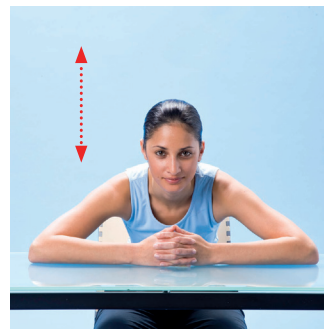
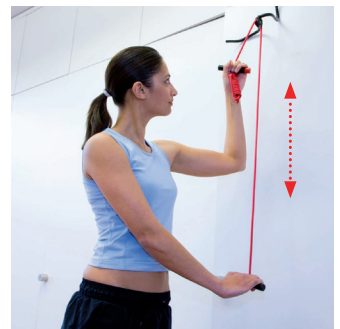


Information and tips for patients

WEEK 7 to 11

- Gradual shift from cushion to arm sling. Wearing sling in public until week 12 (“sling as a reminder”). At home without sling starting from week 8.
- No strain on arm and shoulder.
- Free movement as long as pain-free
- Driving a car is permitted as long as no cushion is used
- Repetitive activities such as jogging (even if pain-free) not yet allowed

Home exercises:



Physiotherapeutic measures

STARTING FROM WEEK 12

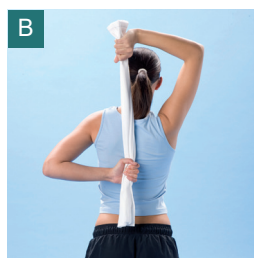
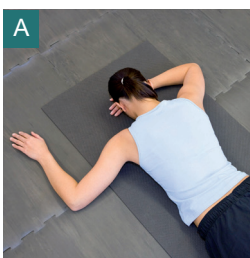
30 – 40% tear resistance (i.e. tissue adheres without tearing)

- Massages as required
- Analgesic measures if still required
- Manual joint techniques (grade I – II)
- Developing strength:

Progression: from closed to open kinetic chain exercises
 Progression: ↑strength endurance ↑elasticity ↑sports-specific training

Coordination training: strength exercises: 1 – 8
 Mobilisation exercises: A + B

Examples of strength and mobilisation exercises:



Information and tips for patients

STARTING FROM WEEK 12

- Strain on the arm is allowed in a pain free zone
- Sports activities after consultation with the surgeon

Physiotherapeutic measures

The “physiotherapeutic measures” of these follow-up directives are designed to give you a guideline through the wide range of therapeutic measures.

The selection of exercises is based on principles of the regeneration of connective tissue. They are intended to show you the degree of movement and strain while performing your exercises in the respective recovery phase. Of course, the exercise selection is not complete and should be complemented by your own suggestions from other therapy and healing concepts. To a large extent, we have avoided specific detail of therapeutic concepts to be employed. A bespoke approach will be the result of the experience and training of the Physiotherapist. This programme is the result of our experience through the recent years. We continually seek to integrate new insights into our work and will adjust our measures accordingly.

Our objective continues to be the fulfilment of our patients’ requirements regarding the recovery of their shoulder and to support them on their way to full functionality in accordance with their everyday and sports-related activities. Should you have only little experience with the follow-up treatment of patients after a surgical intervention on their shoulder, please don’t hesitate to contact us. If you have different experiences and insights we would be grateful to hear more about them.

Carol Meyer, Thomas Schweizer – Physiotherapie Klinik Im Park (clinic of physiotherapy)

Information and tips for patients

Pain is a warning signal.

Each shoulder surgery constitutes a unique combination of age and general health condition of the patient, the extent of the surgery, the time between a possible accident and the surgical intervention and so on. Therefore, these guidelines of recovery are to be applied with care. Depending on the specific situation, the follow-up treatment has to be adjusted individually.

However, you as the patient should know that during the recovery period pain should be avoided. Thus, you can answer potential questions regarding the recovery yourself: If something hurts, it is not beneficial to your healing process. Therefore, if you are unsure or experience any pain, I recommend you to get in touch with your surgeon or your treating physician.

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