Post-operative rehabilitation after rotator cuff tear surgery or shoulder arthroplasty: Inpatient or outpatient care?

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OBJECTIVES

- To help doctors make the right decision when prescribing physiotherapy after rotator cuff surgery or shoulder arthroplasty by enabling them to assess whether the patient should be hospitalised in order to receive post-operative rehabilitation.
- To specify what information needs to be exchanged between the surgeon and the physiotherapist in order to implement the patient’s rehabilitation, regardless of where it is performed.


KEY POINTS

- Rehabilitation is recommended for all patients after shoulder arthroplasty or rotator cuff surgery, regardless of the surgical technique proposed (grade C).
- After shoulder arthroplasty, the proposal should be made to the patient to be hospitalised in a physical and rehabilitation medicine (PRM) department.
- Surgery for shoulder rotator cuff tears does not generally require hospitalisation for follow-up care and rehabilitation in patients for whom physiotherapy is indicated.
- Rehabilitation after rotator cuff surgery can take the form of self-rehabilitation (grade C) only when certain conditions are met (figure 1).
REFERRAL CRITERIA

Patient referral after shoulder surgery for rotator cuff tears or arthroplasty

Surgery for shoulder rotator cuff tears

- No complex surgical procedure
- No complications
- No comorbidities
- No isolation

Shoulder arthroplasty

Propose hospitalisation in a post-operative rehabilitation or post-acute medical care centre or department

Discharge criteria:
- No fever
- Pain controlled by level 1 or 2 analgesics
- Patient understands and takes account of risks prior to healing
- Functional independence for daily activities (personal hygiene, dressing, meals, movement)

No

Primary purpose of hospitalisation is rehabilitation

Return home is feasible:
- Home care has been arranged if independence for daily activities has not been achieved safely
- Transport has been arranged to physiotherapy venue, or professionals are available for home visits

No

Self-rehabilitation criteria:
- Rotator cuff surgery
- Patient agrees, understands and masters the programme
- Pain controlled by level 1 or 2 analgesics
- Medical and surgical follow-up specified and known to patient

No

Extend stay in surgical dept while organising outpatient treatment and home care in order to meet discharge criteria

No

Rehabilitation programme supervised by a physiotherapist in outpatient setting (home, individual practice or technical support centre)

Yes

Rehabilitation programme supervised by a physiotherapist during hospitalisation in specialist rehabilitation centre (PRM dept)

No

Propose hospitalisation in post-acute medical care department depending on primary purpose of treatment

Yes

Patient agrees and available bed in PRM

No

Patient agrees and available bed in post-acute medical centre

Yes

Results maintained through ongoing self-mobilisation by the patient alone

Figure 1. Criteria for rehabilitation and for referring the patient to outpatient or rehabilitation centre care.
**INDICATIONS AND REHABILITATION PROGRAMMES**

**Indications for post-operative rehabilitation**

- For all patients after rotator cuff surgery or shoulder arthroplasty.
- In the form of a rehabilitation programme supervised by a physiotherapist, including training in self-mobilisation, or in the form of self-rehabilitation performed by the patient alone with medical and surgical follow-up, only if certain conditions are met (see figure 1).
- Rehabilitation techniques used, in accordance with the medical prescription: massage, cryotherapy, balneotherapy, manual mobilisation and self-mobilisation, technical aids and environmental adaptations should be combined with therapeutic patient education and chosen on the basis of the treatment goals agreed on with the patient after clinical assessment.

They should be adjusted to the patient’s individual characteristics and personal goals, the surgical technique, the postoperative arm support device (sling or thoracobrachial orthosis), any intraoperative or postoperative complications, and the stage of rehabilitation.

**Rehabilitation programmes**

<table>
<thead>
<tr>
<th>Rehabilitation stage</th>
<th>Primary objectives</th>
<th>Indications</th>
<th>Expected outcomes and end criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative</td>
<td>Inform</td>
<td>Planned surgery</td>
<td>Restoration of subnormal ranges of motion, Patient’s adaptation to postoperative conditions</td>
</tr>
<tr>
<td></td>
<td>Restore passive mobility</td>
<td>Preoperative stiffness</td>
<td></td>
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<tr>
<td></td>
<td>Learn to perform self-mobilisation</td>
<td>All patients</td>
<td>Subnormal passive mobility gradually improving</td>
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<tr>
<td>Initial postoperative</td>
<td>Restore passive mobility</td>
<td>All patients</td>
<td></td>
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<tr>
<td>Immediately following the intervention</td>
<td>Solicit contraction of unrepaired muscles</td>
<td>All patients</td>
<td></td>
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<tr>
<td>Duration depends on the anatomical</td>
<td>Supervise clinical evolution (support device, pain, complications)</td>
<td>All patients</td>
<td></td>
</tr>
<tr>
<td>structures repaired (surgical decision)</td>
<td></td>
<td>All patients</td>
<td></td>
</tr>
<tr>
<td>Secondary postoperative</td>
<td>Wean off wearing arm support device</td>
<td>All patients</td>
<td>Pain-free passive and active ranges of motion in a physiological pattern, resulting in functional independence, bearing in mind the patient’s context and goals, Stop at the end of the 4th month at the latest, unless there are complications</td>
</tr>
<tr>
<td>From the end of the period of</td>
<td>Restore active mobility against gravity</td>
<td>All patients</td>
<td></td>
</tr>
<tr>
<td>relative immobilisation, with the</td>
<td>By 3 months restore arm function for all sedentary activities of daily living,</td>
<td>All patients</td>
<td></td>
</tr>
<tr>
<td>surgeon’s or PRM specialist’s agreement to start</td>
<td>excluding resistance activities</td>
<td>All patients</td>
<td></td>
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<tr>
<td>active work</td>
<td></td>
<td>All patients</td>
<td></td>
</tr>
<tr>
<td>Tertiary postoperative</td>
<td>Gradually restore previous physical and working activities, including load-bearing</td>
<td>Only if resuming previous activities</td>
<td>Resumption of the working, sport or leisure activity is possible, No further progress in muscle functions or movement-related functions, Stop at the end of the 6th month at the latest</td>
</tr>
<tr>
<td>After the end of the 4th month in</td>
<td>activities, including load-bearing activities</td>
<td>demands maximum physical fitness</td>
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<tr>
<td>cases of tendon repair</td>
<td>Readjust the patient to stress and specific work or sport-related movements</td>
<td>All patients</td>
<td></td>
</tr>
</tbody>
</table>

**Medical and surgical follow-up**

- By the surgeon or the PRM doctor in collaboration with:
  - primary care general practitioner and any doctors who were monitoring the patient before the operation
  - specialist in medicine and health in the workplace if patient agrees and if severe, lasting effects on working life are likely after rehabilitation programme ends.
Clinical assessment and monitoring by the physiotherapist

- Depending on the prescription, the following elements of the International Classification of Functioning, Disability and Health (ICF) should be taken into account in monitoring the patient, based on validated tools if possible:
  - body functions and body structures (pain, functions of the skin, sensory functions, functions of the joints and bones, muscle functions, movement functions, functions of the cardiovascular and respiratory systems, general signs suggesting complications)
  - activities, participation and quality of life before and after the operation, in connection with the patient's personal goals (e.g. DASH self-report outcome measure, grade B).

- The surgeon or PRM specialist should be consulted when:
  - pain is not controlled, is increasing or is reappearing although the patient is complying with the prescribed medication
  - the global passive ranges of motion of the shoulder at 6 weeks are less than 90° elevation in the plane of the scapula or show a deficit of more than 30° in lateral rotation compared with the opposite side, and are making no further progress
  - global active antigravity elevation at 3 months is less than 90° and making no further progress
  - the joint is unstable (clinically detectable subluxation or luxation following arthroplasty)
  - signs of secondary complications (fever, inflammation phenomena, oedema of the hand, neurological signs, weeping or opening of the surgical scar, etc.) appear.

INFORMATION TO BE EXCHANGED BY PROFESSIONALS

It is recommended that:

- the prescribing doctor send the physiotherapist the prescription and other information needed to implement the treatment safely:
  - date and type of the surgical intervention, particularly the structures repaired
  - duration of relative immobilisation with the arm support device
  - what movements are forbidden and for how long
  - timetable for implementing passive, active and active resistive mobilisation

- the physiotherapist send a summary of the updated physiotherapy diagnostic assessment:
  - to the colleague in charge of carrying out outpatient care
  - to the doctor or surgeon for each surgical or medical consultation connected with the rehabilitation postoperative care.

Model documents (prescription, follow-up letter, summary of diagnostic assessment and DASH questionnaire) are appended to the guideline.