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Short Version of the S2k clinical guideline

Rotator cuff tears

of the

German Society for Orthopaedics and Trauma Surgery e.V.



und

D-A-CH Association for Shoulder and Elbow Surgery e.V.

Society for Arthroscopy and Joint Surgery e.V.

Professional Association for Arthroscopy e.V.

German Rheumatism League Federal Association

German Society for Orthopaedics and Orthopaedic Surgery e.V.

German Society for Physiotherapy Sciences e.V.

German Society for Trauma Surgery e.V.

Society for Orthopaedic-Traumatologic Sports Medicine e.V.

Association for Physiotherapy e.V.

German Association for Physiotherapy e.V.



DVSE

Deutsche Vereinigung für Schulter- und Ellenbogenchirurgie e. V.



AGA

Gesellschaft für Arthroskopie
und Gelenkchirurgie



Gesellschaft für Orthopädisch-
Traumatologische Sportmedizin



**Berufsverband
für Arthroskopie e.V.**



Deutsche Gesellschaft für
Physiotherapiewissenschaft

Deutsche RHEUMA-LIGA

• GEMEINSAM MEHR BEWEGEN •



Deutscher Verband für
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Table of contents

EDITOR	2
TABLE OF CONTENTS	3
WHAT`S NEW?	3
THE MOST IMPORTANT RECOMMENDATIONS AT A GLANCE	4

What`s new?

The S2e guideline rotator cuff from 2017 has been completely revised as an S2k guideline. The number of participating specialist societies has been increased to a total of eleven. Current developments and findings from the literature were taken into account, particularly in the chapters on conservative and surgical treatment and rehabilitation. A high level of consensus was achieved in many recommendations and statements.

The most important recommendations at a glance

The recommendations of the guideline are listed below. Strong recommendations are highlighted in bold.

No.	Text of recommendation
1.1 Definition/Terminology	
1.	A partial lesion of the rotator cuff is only present if the tendon is NOT fully severed. Any full-thickness transection of the tendon is to be described as a complete lesion of the tendon, even if it does not affect the entire width of the tendon.
1.2 Etiology/Pathogenesis	
2.	The etiology of rotator cuff lesions cannot be attributed solely to mechanical causes such as impingement. Rather, the development must be seen as a multifactorial process.
2.1 Prevalence of complete rotator cuff ruptures	
3.	The prevalence of rotator cuff lesions shows a clear association with advancing age.
4.	Clinical scores show no significant differences in the presence of asymptomatic lesions compared to intact rotator cuffs. A clinical loss of function appears to represent the transition to symptomatic lesions, particularly in the presence of pain.
2.2 Prevalence of partial rotator cuff ruptures	
5.	The subscapularis tendon lesion rarely occurs in isolation, but is often associated with other rotator cuff lesions (e.g. lesions of the supraspinatus tendon) and frequently with lesions of the long biceps tendon (LHB). Combined partial lesions of the supraspinatus and subscapularis tendon occur frequently in the context of lesions of the pulley system in anterosuperior impingement.
3. Classification	
6.	We recommend the following classifications to categorize rotator cuff lesions: Intraoperative/morphologic Subscapularis: Lafosse et al. Supraspinatus: Bateman et al. Supraspinatus partial thickness lesions: Snyder et al/Ellman et al. Pulley lesions: Habermeyer et al. Imaging MRI SSP: Patte et al. MRI FI (fatty infiltration): Fuchs et al. CT SSP: Goutallier et al.

7.	The following scores can be used to assess the clinical extent of rotator cuff lesions: Simple scoring systems with purely subjective parameters: - Visual Analogue Scale (VAS): pain rating on visual analog scale from 1-10 - Subjective shoulder value (SSV): subjective assessment of the percentage “value” of one's own shoulder. - Quick Dash (Disabilities of the arm, shoulder and hand) score Assessment systems (for collecting scientific data) with subjective and objective parameters: - Constant Score: 100 pt. score with objective and subjective parameters - American Shoulder and Elbow Surgeons (ASES) score: score with subjective and objective parameters to record pain and function
5.1 Basic Diagnostics	
8.	An X-ray image in 3 planes can be considered as a basic native radiological diagnosis. The relevant images are an image in anteroposterior (ap) projection, an axial image and an outlet image.
5.2 Further diagnostics	
9.	Sonography is an examiner-dependent examination method that can be used for initial diagnostics and in the follow-up treatment of conservative and surgical measures if the appropriate expertise is available.
10.	In the absence of contraindications, we recommend the native MRI examination for further diagnosis of rotator cuff lesions in acute injuries, chronic lesions (>3-6 months of symptoms) and planned operations.
11.	Intra-articular contrast imaging using MRI or CT can be considered in individual cases.
12.	We suggest to image the sagittal plane of the MRI far enough medial so that the muscle atrophy can be assessed accordingly.
6.1 Drug Therapy	
13.	The treatment of rotator cuff lesions involves the use of non-steroidal anti-inflammatory drugs (NSAIDs) to reduce inflammation and pain, both systemically and locally.
6.2 Physiotherapy and Self-exercises	
14.	Physiotherapy is the basis of conservative treatment of rotator cuff lesions. The aim is to improve mobility, strength and proprioception through targeted exercises.
6.3 Infiltrations	
15.	Therapy with local injection of cortisone in addition to basic physiotherapy can help to reduce pain and improve function in the short term, but can damage the tendon structure in the long term.

6.4 Platelet-Rich Plasma	
16.	In comparative studies, there is no clear advantage of PRP over cortisone for partial ruptures of the rotator cuff, although there may be a tendency towards better results.
6.5 Stem cell Infiltration	
17.	Stem cell therapy is to be considered experimental; there are no reliable studies on the effectiveness on treatment of rotator cuff lesions.
7.1 Indication/Time of Surgery	
18.	We do not recommend surgical treatment for asymptomatic rotator cuff lesions.
19.	We recommend the prompt treatment of acute tears, especially of the subscapularis tendon, and tears without signs of humeral head cranialization and advanced atrophy, as delayed reconstruction of acute rotator cuff lesions leads to tendon retraction, fatty degeneration and atrophy of the rotator cuff muscles and there is a chance of finding healthier tissue with better healing potential during reconstruction.
20.	Histology can be performed to differentiate between acute/chronic (accident vs. disease).
7.4 Most common surgical procedures	
21.	The minimally invasive arthroscopic surgical technique shows equally good clinical results compared to the open and mini-open technique.
22.	The advantages of the arthroscopic procedure are a lower level of pain in the immediate postoperative period and a significantly lower complication rate compared to open surgical techniques.
23.	We recommend to select the surgical procedure depending on the surgeon's experience, the pathology and the patient's wishes. Due to the limited surgical access, we recommend the usage of the suture anchor technique as the standard procedure for arthroscopic techniques, as transosseous arthroscopic techniques are not established.
24.	We recommend to aim for the tendon-to-bone healing, as the functional results are better with successful tendon-to-bone healing.
25.	We recommend the application of the suture configuration according to the surgeon's experience, depending on the pathology, the rupture morphology and the size of the rupture. We recommend aiming for a reconstruction that is as tension-free as possible.
26.	There is no clear recommendation for additive acromioplasty in rotator cuff reconstruction. In the case of a subacromial spur, we suggest to perform the additional subacromial decompression.
27.	A very limited AC-joint-resection (max. 1 shaver width / approx. 6 mm) can be performed in the case of clinically preoperative symptomatic ACG osteoarthritis (caution: instability). We do not recommend resection of the AC-joint for asymptomatic AC-joint-arthritis.

28.	We recommend selecting the indication for tenotomy/tenodesis of the long biceps tendon (LBS) depending on the patient's age, functional requirements and the pathology present.
29.	We suggest attempting the partial reconstruction of the rotator cuff if complete reconstruction of the tendon(s) is not possible. Debridement alone without reconstruction is more likely to be performed in older patients with low functional requirements to reduce pain.
30.	The data on superior capsular reconstruction for massive rotator cuff tears is unclear. No general recommendation is made.
31.	The data on augmentation with a long biceps tendon for massive rotator cuff tears is unclear. No general recommendation is made.
32.	The data on the implantation of a subacromial spacer for massive rotator cuff tears is unclear. No general recommendation is made.
33.	For posterosuperior rotator cuff lesions, the latissimus dorsi and lower trapezius muscle transfers are available. The superiority of one procedure is not given.
34.	The data on latissimus dorsi/teres major transfer for reverse shoulder arthroplasty is unclear. No general recommendation is given.
7.5 Additive processes	
35.	There is no clear advantage on the additional use of PRP in the surgical treatment of rotator cuff lesions. No general recommendation is made.
36.	The data on the standard use of human skin matrix grafts in rotator cuff reconstructions is unclear. Use may need to be evaluated in individual cases, but a general recommendation is not given.
37.	We do not recommend the use of cross-linked porcine small intestine submucosa xenografts for rotator cuff reconstruction.
9 Rehabilitation	
38.	We recommend to individually determine the duration of immobilization in general and of wearing the orthosis at night in particular by the surgeon according to the stability of the reconstruction and should be between 3 and 6 weeks.
39.	Early passive mobilization has no long-term disadvantages compared to late mobilization, while too aggressive passive or active mobilization can lead to an increased re-tear-rate.
40.	We suggest manual therapy as part of the physiotherapeutic follow-up treatment.
41.	As part of the physiotherapeutic follow-up treatment, we recommend to perform the training therapy, either alone or in combination with self-exercise programs.
42.	CPM therapy can be used as part of early follow-up treatment.
43.	Cryotherapy can be used in the early postoperative phase to reduce pain.
44.	Transcutaneous electrical nerve stimulation (TENS) and/or pulsed magnetic field therapy can be used in the early postoperative phase to reduce pain.

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The AWMF records and publishes the guidelines of the specialist societies with the greatest possible care - nevertheless, the AWMF cannot accept any responsibility for the accuracy of the content. **The manufacturer's instructions must always be observed, particularly with regard to dosage information!**

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