Providing Optimal Treatment through the use of EBM/MTUS

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What is Evidence-Based Medicine

“…the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.

…means integrating individual clinical expertise with the best available external clinical evidence from systematic research.”

What is Evidence-Based Medicine

“A set of principles and methods intended to ensure that to the greatest extent possible, medical decisions, guidelines, and other types of policies are based on and consistent with good evidence of effectiveness and benefit.”


How Many Contemporary Medical Practices Are Worse Than Doing Nothing or Doing Less?

• Almost half of the established medical practices that are tested are found to be no better than a less expensive, simpler, or easier therapy or approach

The Downside of EBM

- What about the doctor’s clinical judgment?
- What about new or experimental procedures?
- In many areas of medicine, there are no treatment guidelines; and where there are, they are often unreliable, conflicting and incomplete
- Even where there are well established guidelines, they are written for the average patient - What if you are not average?
- Often written by people who are not disinterested
- Misused and misinterpreted by UR companies paid by payers

MEEAC

- § 9792.26. The MTUS regulations created a Medical Evidence Evaluation Advisory Committee (MEEAC), which reviews the latest medical evidence and advises the division about incorporating new evidence-based guidelines into its MTUS
- MEEAC's recommendations are advisory in nature and do not constitute scientifically based evidence
• All treatment in California must be consistent with the MTUS (LC §5307.27) which is presumptively correct as a matter of law (LC §4604.5 (a))

MTUS = AUTHORIZATION for TREATMENT AND/OR TESTING

THE MTUS IS THE UNIFYING THEORY OF RELATIVITY IN THE NEW SYSTEM BUT YOU MUST KNOW CLEARLY HOW IT IS APPLIED

Medical Treatment Utilization Schedule

• Doctors in California's workers' compensation system are required to provide evidence-based medical treatment
• That means they must choose treatments scientifically proven to cure or relieve work-related injuries and illnesses
• Text of Regulation and MTUS
  http://www.dir.ca.gov/dwc/DWCPPropRegs/MTUS_Regulations/MTUS_Regulations.htm
Labor Code Section 4610.5(c)(2)

- (2) "Medically necessary" and "medical necessity" mean medical treatment that is reasonably required to cure or relieve the injured employee of the effects of his or her injury and based on the following standards, which shall be applied in the order listed, allowing reliance on a lower ranked standard only if every higher ranked standard is inapplicable to the employee's medical condition:
  - (A) The guidelines [i.e., the MTUS] adopted by the administrative director pursuant to Section 5307.27.
  - (B) Peer-reviewed scientific and medical evidence regarding the effectiveness of the disputed service.
  - (C) Nationally recognized professional standards.
  - (D) Expert opinion.
  - (E) Generally accepted standards of medical practice.
  - (F) Treatments that are likely to provide a benefit to a patient for conditions for which other treatments are not clinically efficacious.

Report Writing

- Physician needs to provide a clear, legible and concise history and physical examination followed by diagnoses and then recommendations for EBM medical care
- Problems:
  - Boilerplate report especially with electronic medical record (EMR)
  - No EBM statement to support request
  - Flood of overlapping treatment requests
  - No documentation to support past efficacy for request
Medical Reporting

• The medical reporting should contain documentation that the injured worker
  – Is educated about and understands the diagnoses and that
  – The goals of treatment are:
    • Less discomfort
    • Improved ADL function
    • Staying at or returning to work
  – Goals will/have been met to justify prescribed treatment
• Request for treatment support by MTUS / EBM

Getting to YES

• A “bullet-proof” report would be one that clearly shows how the injured worker is appropriate for treatment that meets MTUS/EBM Guidelines and, when possible, clearly indicates the negative ramifications of not receiving the recommended treatment
Documentation

• History, physical findings, tests and imaging studies support diagnosis and treatment request
• Report should list red flags that demand treatment
• Report should document functional improvement

Documentation

• Report should document progression of treatment
  – Simple/conservative to complex/invasive
  – Document timeline (how many weeks have passed?)
• Report should note failure of lower level of treatment to date
  – Should distinguish 1\textsuperscript{st} 2\textsuperscript{nd} 3\textsuperscript{rd} 4\textsuperscript{th} line treatment options
Documentation is #1

• It doesn’t really matter where the prescription is in the process – UR, IMR, or expedited hearing – every treatment request must be properly documented, fully substantiating the need for the treatment
• Treatment request absent adequate documentation = Denial
• Getting it right in the first place is the only viable strategy
  – Requesting physician
  – UR needs to get it right

IMR Decisions*

• Denial if too early, simple diagnosis (sprain, etc.) no conservative treatment, no red flags, negative physical exam, test will not alter treatment course
  – No EBM support for request in report
• Approval if delayed recovery, neurological deficit, chronic condition, conservative treatment didn’t help, + physical findings
  – Good EBM support for request in report

*Opinion based on my review of IMR decisions
**Functional Restoration Medically Necessary**

- A functional restoration approach is medically necessary and has not yet been provided to cure or relieve the effects of the industrial injury
  - Surgery, PT, acupuncture, chiropractic, injections, medications, have been ineffective
  - Medications despite escalation have not proven effective and are in fact disabling
  - There is a documented sleep disturbance and sexual dysfunction
  - Weight gain is noted with an increased BMI
  - There is evidence of reversible deconditioning
  - There is evidence of psychological consequences with anger, fear of reinjury, maladaptive coping, mood disturbance, depression, irritability, emotional distress and somatic preoccupation

**IW Meets FR Criteria and is Onboard**

- IW is not a candidate for surgery or other invasive interventions; or wishes to avoid additional options of surgery due to fear of complications or further delays in recovery
- There is documented loss of functional ability with medically reasonable potential for improved performance and functional capacity
- IW has reasonable expectations and is committed to full participation to meet the goals of increased function, medication reduction/optimization, self-sufficiency, and return to life activities including work, MMI status and case resolution
Getting to YES with UR & IMR

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This document is meant to help physicians and others better serve injured workers through understanding how to provide requests for treatment that meets evidence-based medicine guidelines leading to authorization for medical care. While not foolproof, if physicians follow the directions below they can avoid most authorization denials through UR and IMR. This does involve a little extra work at the front end, but it saves having to deal with and respond to denials of care which only clog up the physician’s office and take up time while leaving the injured worker patient without needed medical care.

The Rules

- Doctors in California's workers' compensation system are required to provide evidence-based medical treatment.
- All treatment in California must be consistent with the MTUS (LC §5307.27) which is presumptively correct as a matter of law (LC §4604.5 (a)).
  - Requests that are inconsistent with the MTUS = Denial / Non-Certified.
- The physician can go down the right hierarchy when the MTUS does not address the treatment request, does not adequately consider unique treatment requests, or where there is stronger and more up-to-date scientific evidence to support the request.
- Text of Medical Treatment Utilization Schedule Regulations (MTUS):
  http://www.dir.ca.gov/dwc/DWCPropRegs/MTUS_Regulations/RegulationsFinalClean.pdf
- The physician must choose treatments scientifically proven to cure or relieve work-related injuries and illnesses.
- §9792.25. Presumption of Correctness, Burden of Proof and Strength of Evidence
  https://www.dir.ca.gov/t8/9792_25.html
  - (a) The MTUS is presumptively correct on the issue of extent and scope of medical treatment and diagnostic services addressed in the MTUS for the duration of the medical condition.
  - The presumption is rebuttable and may be controverted by a preponderance of scientific medical evidence establishing that a variance from the schedule is reasonably required to cure or relieve the injured worker from the effects of his or her injury.
  - (b) For all conditions or injuries not addressed by the MTUS, authorized treatment and diagnostic services shall be in accordance with other scientifically and evidence-based medical treatment guidelines that are nationally recognized by the medical community.
  - (c)(1) For conditions or injuries not addressed or at variance by either subdivisions (a) or (b) above or where a recommended medical treatment or diagnostic service covered under subdivision (b) is at variance with another treatment guideline also covered under subdivision (b), ACOEM's strength of evidence rating methodology is used.
    - Evidence-base: Insufficient – Limited – Moderate - Strong
Labor Code Section 4610.5(c)(2) as revised by SB863:
  - (2) "Medically necessary" and "medical necessity" mean medical treatment that is reasonably required to cure or relieve the injured employee of the effects of his or her injury and based on the following standards, which shall be applied in the order listed, allowing reliance on a lower ranked standard only if every higher ranked standard is inapplicable to the employee's medical condition:
    - (A) The guidelines adopted by the administrative director pursuant to Section 5307.27.
    - (B) Peer-reviewed scientific and medical evidence regarding the effectiveness of the disputed service.
      - (http://www.ncbi.nlm.nih.gov/pubmed/)
    - (C) Nationally recognized professional standards.
      - ACOEM, ODG, Others (see http://www.guideline.gov/)
    - (D) Expert opinion.
    - (E) Generally accepted standards of medical practice.
    - (F) Treatments that are likely to provide a benefit to a patient for conditions for which other treatments are not clinically efficacious.

Overview of MTUS:

For many body parts (see below), the MTUS uses the ACOEM 2004 2nd Edition although all Chapters have been updated. If the 2004 Chapter does not provide the most accurate and up to date scientific evidence based medicine supported request for treatment, consider #2 - #7 hierarchy above.

- The updated ACOEM Chapters can be purchased at
- Many Guidelines including ACOEM and prior ODG versions can be obtained free at http://www.guideline.gov/

CA DWC Medical Treatment Utilization Schedule (MTUS)
https://www.dir.ca.gov/dwc/MTUS/MTUS_RegulationsGuidelines.html

- **Neck and Upper Back Complaints**
  - Acupuncture Medical Treatment Guidelines
  - Postsurgical treatment Guidelines

- **Shoulder Complaints**
  - Chronic Pain Medical Treatment Guidelines
  - Postsurgical treatment Guidelines

- **Elbow Disorders**
  - ACOEM 10 (Revised 2007)
  - Acupuncture Medical Treatment Guidelines
  - Chronic Pain Medical Treatment Guidelines
  - Postsurgical treatment Guidelines
Report Writing

- Physician needs to provide a clear, legible and concise history and physical examination followed by diagnoses and then recommendations for evidence-based medicine (EBM) medical care.
- Timely submitted reports will help expedite proposed treatment and avoid unnecessary delays unrelated to the UR process.
- Avoid boilerplate paragraphs especially with an electronic medical record (EMR).
- State how the medical treatment is supported by the MTUS or how you request is supported by another medical standard and why every standard ranked higher in the hierarchy (see hierarchy above) is inapplicable to the injured worker’s medical condition.
- Walk the UR or IMR Reviewer through the treatment course and documented how the treatment request meets the MTUS or EBM standards.
- The medical reporting must contain documentation that the injured worker is educated about and understands the diagnoses and additionally should note specific goals to be achieved and documented with treatment which include:
- Less discomfort
- Improved activities of daily living function
  - Improved sleep
  - Increased ADLs such as cleaning the house, mowing the lawn, etc.
- Staying or returning to work

**Post-UR & IMR Denial**

- If there has already been a UR denial, discuss how the Utilization Reviewer erred in the analysis.
- What documentation or evidence or report did the Utilization Reviewer miss or not consider.
- Learn from your UR mistakes - If the UR physician has pointed out legitimate errors in your reporting, correct the deficiency prior to IMR.

**Explanation of the Request for Initial Authorization**

- The report should contain an explanation that the request/prescription for treatment is to achieve and will result in a positive outcome (and therefore be efficacious) by way of less pain and improved activities of daily living - ADLs (including SAW/RTW) which are measured and documented at the next visit.
- The report should clearly state that the prescription/request is supported by MTUS or whatever scientific article or guidelines you are using and is supported by evidence-based medicine or is otherwise justified.
- A “bullet-proof” report would be one that clearly shows how the injured worker is appropriate for treatment and, when possible, clearly indicates the negative ramifications of not receiving the recommended treatment.
- Even if the prescription/recommendation doesn’t quite fit the guidelines; make sure further details are provided with regards to your request. For example: While the patient has attempted PT in the past without lasting benefit and the prescription is in excess of what guidelines recommend for this diagnosis, previous PT notes show care consisted primarily of passive modalities. Current PT will consist of (list active therapies) that should have a much greater chance of creating functional gains and thus should be considered for this specific patient. The more patient specific the treatment plan can be, the easier the argument can become to move outside of guidelines which are often based on averages.

**Explanation of the Request for Additional/Continued Treatment Authorization**

- To justify additional or continued treatment you will have to clearly document how the initial similar treatment resulted in a positive outcome (less pain, increased ADLs, etc.) and why additional similar care will further result in a further benefit.

**Documentation is #1**

- It doesn’t really matter where you are in the process – UR, IMR, or expedited hearing – every treatment request must be properly documented, fully substantiating the need for the treatment. A treatment request absent adequate documentation = UR or IMR Denial. Getting it right in the first place is the only viable strategy.

**Documentation Specifics**

- Note progression of treatment: Simple/conservative to complex/invasive.
• Document timeline (how many weeks have passed?).
• Note failure/lack of improvement with lower level of treatment to date.
• Distinguish 1st, 2nd, 3rd, and 4th, line treatment options.
• Document history, physical findings, tests and imaging studies support diagnosis and treatment request.
• List red flags that demand treatment and risks associated with denial of care.
• Document functional improvement.
• Use the MTUS / ODG / ACOEM Guideline as a Checklist: If the prescription/requested is supported in the guideline, describe how the injured worker meets the requirements for that treatment.

**IMR Denials and Approvals**

- Denial if too early in treatment course for the specific request without documentation in support of variance from the guidelines, simple diagnosis (sprain, etc.) does not warrant treatment request, no conservative treatment, no red flags, negative physical exam, test will not alter treatment course.
- Approval if delayed recovery, neurological deficit, chronic condition, conservative treatment didn’t help, positive physical findings.

**IMR Denial: Remains in effect for 12 months unless:**

- Has there been a substantial change in the patient’s condition - a change in the facts and/or clinical status?
- Was the IMR determination the result of a plainly erroneous expressed or implied finding of fact?
- If an IMR denial is in place, or other alternative treatment options?

The “secret” to avoiding UR & IMR denials is to follow the ACOEM 2004 Guidelines and if they are not adequate or up to date, to use other guidelines per the DWC MTUS hierarchy or to provide clearer justification otherwise for the request/prescription. See ACOEM 2004, Chapter 8, for full details. Pertinent summaries and algorithms from the ACOEM, 2004 2nd Edition are listed below.
Master Algorithm: ACOEM Guidelines for Care of Acute and Subacute Occupational Neck and Upper Back Complaints

Initial visit
- Work and medical history, focused physical examination (see Tables 8-2, 8-3, and 8-4).
- Red flags for potentially serious condition (see Table 8-1 and Algorithm 8-1)?
  - Yes
    - Red flags for cervical cord compromise?
      - No
      - Emergency imaging (see Algorithm 8-1).
      - Laboratory studies, imaging (see Algorithm 8-1).
      - Immediate consultation with surgeon.
    - Yes
      - Special consultation.
  - No
    - Modify activities and work.
    - Red flags for fracture, tumor, infection?
      - No
      - Return to activities.
      - If unresolved, reassess with interval history and brief physical exam (see Algorithm 8-2).
      - Reassure, discuss, educate patient of therapeutic exercises, and modify work as needed.
      - If unresolved, reassess with detailed history, physical exam.
      - Specialized studies, if indicated (see Algorithm 8-3 and Table 8-7).
      - Relief.
      - Pain assessment if indicated (see Chapter 8).
      - Positive.
      - Specialized advice if needed (see Algorithms 8-3 and 9-4).
      - Psychological consultation.
      - Unresolved, refer to a conservative spine specialist (see Algorithm 8-5).
  - Yes
    - Red flags for fracture, tumor, infection?
      - No
      - Laboratory studies, imaging (see Algorithm 8-1).
      - Immediate consultation with surgeon.
      - Special consultation.
      - Specialized studies, if indicated (see Algorithm 8-3 and Table 8-7).
      - Relief.
      - Pain assessment if indicated (see Chapter 8).
      - Positive.
      - Psychological consultation.
      - Unresolved, refer to a conservative spine specialist (see Algorithm 8-5).
### Summary of Recommendations and Evidence

See Table 8-8.

**Table 8-8. Summary of Recommendations for Evaluating and Managing Neck and Upper Back Complaints**

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and physical exam</td>
<td>Basic history and exam (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of cancer infection (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of significant trauma (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neurologic exam (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication (See Chapter 3)</td>
<td>Acetaminophen (C)</td>
<td>Muscle relaxants (C)</td>
<td>Use of opioids for more than 2 weeks (C)</td>
</tr>
<tr>
<td></td>
<td>NSAIDs (B)</td>
<td>Opioids, short course (C)</td>
<td></td>
</tr>
<tr>
<td>Physical treatment methods</td>
<td></td>
<td>Physical manipulation for neck pain early in care only (B)</td>
<td>Traction (B)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At-home applications of heat or cold (D)</td>
<td>TENS (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Radio-frequency neurotomy (C)</td>
<td>Other modalities (D)</td>
</tr>
<tr>
<td>Injections</td>
<td>Epidural injection of corticosteroids to avoid surgery (D)</td>
<td>Facet injection of corticosteroids (D)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Botulinum toxin (dystonia only) (B)</td>
<td>Diagnostic blocks (D)</td>
<td></td>
</tr>
<tr>
<td>Rest and immobilization</td>
<td>1 or 2 days' partial bed rest for severe pain (D)</td>
<td>Bed rest longer than 1 or 2 days (B)</td>
<td>Cervical collar more than 1 or 2 days</td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity and exercise</td>
<td>Maintenance of activity levels while recovering (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Office instruction on exercises after initial pain decreases (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low-stress conditioning and aerobic exercises to avoid debilitation (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detection of neurologic abnormalities</td>
<td>EMG to clarify nerve root dysfunction in cases of suspected disk herniation preoperatively or before epidural injection (D)</td>
<td>SEP's if spinal stenosis or myelopathy suspected (D)</td>
<td>EMG for diagnosis of nerve root involvement if findings of history, physical exam, and imaging study are consistent (D)</td>
</tr>
<tr>
<td>Radiography</td>
<td>Initial studies when red flags for fracture, or neurologic deficit associated with acute trauma, tumor, or infection are present (D)</td>
<td></td>
<td>Routine use in first 4 to 6 weeks if red flags are absent (D)</td>
</tr>
<tr>
<td>Other imaging procedures</td>
<td>MRI or CT to evaluate red-flag diagnoses as above (D)</td>
<td>Imaging before 4 to 6 weeks in absence of red flags (C, D)</td>
<td>Preoperative diskography (D)</td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Surgical considerations</td>
<td>Careful preoperative education of the patient regarding expectations, complications, and short- and long-term sequelae of surgery (D) Indications clear for failed conservative treatment and history, exam, and imaging consistent for specific lesion (D)</td>
<td></td>
<td>Diskectomy or fusion without conservative treatment 4 to 6 weeks minimum (D) Diskectomy or fusion for nonradiating pain or in absence of evidence of nerve root compromise (D)</td>
</tr>
</tbody>
</table>

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).
C = Limited research-based evidence (at least one adequate scientific study of patients with neck and upper back disorders).
D = Panel interpretation of information not meeting inclusion criteria for research-based evidence.
* Should be obtained in following circumstances: injury above clavicle; patient unreliable due to substance abuse, head, or multiple trauma, or mental illness; midline vertebral pain on palpation; new neurologic deficits of the upper or lower extremities or bowel or bladder dysfunction.
**Initial Visit**

Workers with potentially work-related neck or upper back complaints and no underlying serious conditions (see Algorithm 8-1).

Does patient require help relieving symptoms?

- Yes
  - Provide assurance and education about neck and upper back problems.
  - Recommend comfort options based on risk/benefits and patient preferences (see Table 8-5).

- No
  - Recommend activity and work alterations to decrease symptoms (see Table 8-6). Review daily activities, including work, and encourage return to full activity (including modified or full work) as soon as possible. Recommend specific neck and upper back exercise within limits of pain.

Symptoms improved?

- Yes
  - Return to full activity.

- No

**Follow-up Visits**

Change in symptoms?

- Yes
  - Review history and physical exam.

  - Any red flags?
    - No
      - Provide assurance that recovery is expected. Recommend exercise/activity to avoid debilitation and reduce risk of recurrence (see Table 8-6). Begin muscle-conditioning exercises after a few weeks. Support return to modified work and daily activities.
    - Yes
      - Reasonable return to work and activity at 4-6 weeks?

        - Yes
          - Return promptly as tolerated to full activities. Implement preventive measures as appropriate.

        - No
          - Go to Algorithm 8-3

        - Recurrence of symptoms?
          - Yes
            - Return to Algorithm 8-1

          - No
            - Go to Algorithm 8-3
Algorithm 8-3. Evaluation of Slow-to-recover Patients with Occupational Neck or Upper Back Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to neck or upper back symptoms not improving over 4-6 weeks (see Algorithm 8-2).

- Neurologic symptoms in upper extremities that limit work abilities?
  - No
  - Primary neck symptoms.
    - Evaluate for specific suspected conditions, ESR, AP/lateral x-rays, bone scan.
      - Test results positive?
        - Yes
          - Age-related changes only?
            - No
              - Evaluate as indicated.
              - Exit Algorithm
            - Yes
              - Go to Algorithm 8-5
        - No
          - Go to Algorithm 8-4
  - Yes
    - Significant radiating arm symptoms > 4-6 weeks?
      - No
        - Go to Algorithm 8-2 (follow-up visits)
      - Yes
        - Obvious level of nerve root dysfunction on exam?
          - No
            - EMG
          - Yes
            - Evidence of nerve root dysfunction on EMG?
              - No
                - Consult conservative surgeon or radiologist about possible imaging study to define nerve root compression.
              - Yes
                - Physiologic and anatomic evidence of nerve root dysfunction?
                  - No
                    - Go to Algorithm 8-5
                  - Yes
                    - Go to Algorithm 8-4
Workers limited by significant neck pain radiating to arm > 4-6 weeks, defined by physical examination, electrophysiologic evidence, and imaging study (see Algorithm 8-3).

Primary treating physician reviews test results with patient and discusses surgery versus other treatment. Short- and long-term risks, benefits, and patient values and preferences should be carefully considered.

Does patient desire surgery to correct anatomic defect?

Yes

Are physical limitations lessening?

Yes

Refer to conservative surgeon for specific recommendations based on expected short- and long-term outcomes.

Surgery performed?

Yes

Postoperative care and rapid reconditioning.

No

Go to Algorithm 8-5

No
Algorithm 8-5. Further Management of Occupational Neck and Upper Back Complaints

Workers with neck-related activity limitations > 4-6 weeks, but < 3 months duration following special studies or surgery (see Algorithms 8-3 and 8-4).

Assure patient. Establish safe exercise plan to build tolerance for intended activity.

Return to work activity.

Yes

Recovery?

No

Does patient require help with comfort to tolerate increasing work activity and exercise?

Yes

Recommended comfort options (see Table 8-5), considering risk/benefit related to exercise.

No

Is patient overcoming activity intolerance?

Yes

Further questions about diagnosis?

No

Review history, physical findings, and results of special testing.

Yes

Return to Algorithm 8-3 or seek consultation.

Is patient convinced he/she will be able to tolerate intended work activity?

Yes

Help patient consider options.

No

Is patient seeking information about options?

Yes

Point out that neck symptoms rarely prevent individuals from seeking information. Ask if other factors could be involved.

No

Address specific issues or arrange for psychosocial and/or job evaluation, and/or formal neck and/or upper back rehabilitation program.

Continue to encourage daily exercise to maximize work activity tolerance and reduce recurrence.

Recovery?

Yes

Return to work activities.
Master Algorithm. ACOEM Guidelines for Care of Acute and Subacute Occupational Shoulder Complaints

Initial visit

- Work and medical history, focused physical examination (see Table 9-2).
  - No

  - Red flags for potentially serious condition (see Table 9-1 and Algorithm 9-1)?
    - Discuss, educate, reassure, manage pain (see Table 9-3 and Algorithm 9-2).
      - Prescribe activity (see Table 9-4).
        - Return to activities.
        - Modify activities and work.

  - Reassure, discuss, educate, prescribe therapeutic exercise, and modify work as needed (see Table 9-4).

7 days

If unresolved, reassess with detailed history, physical exam.

4-6 weeks

Specialized studies, if indicated (see Table 9-5).

- Positive.
  - Yes
  - Pain assessment if indicated (see Chapter 6).
    - Positive.
      - Psychological consultation.

- No
  - Specialized advice, if needed (see Algorithms 9-3 and 9-4).

6-8 weeks

If unresolved, evaluation by conservative shoulder specialist (see Algorithm 9-5).
### Summary of Recommendations and Evidence

See Table 9-6.

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and physical exam</td>
<td>Focused history and exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Search for red flags (e.g., for tumor, infection, angina) (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Patient education regarding condition or disorder, expectations of treatment, side effects, etc. (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication (See Chapter 3)</td>
<td>Acetaminophen (C)</td>
<td>Opioids, short course (C)</td>
<td>Use of opioids for more than 2 weeks (C), Muscle relaxants (D)</td>
</tr>
<tr>
<td></td>
<td>NSAIDs (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical treatment methods, activities and exercise</td>
<td>Maintain activities of other parts of body while recovering (D)</td>
<td>At-home applications of heat or cold packs to aid exercises (D)</td>
<td>Passive modalities by a therapist (unless accompanied by teaching the patient exercises to be carried out at home) (D)</td>
</tr>
<tr>
<td></td>
<td>Maintain passive range of motion of the shoulder with pendulum exercises and wall crawl (D)</td>
<td>Short course of supervised exercise instruction by a therapist (D)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Treat initially with strengthening or stabilization exercises for impingement syndrome, rotator cuff tear, instability, and recurrent dislocation (C, D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Injections</td>
<td>Two or three sub-acromial injections of local anesthetic and cortisone preparation over an extended period as part of an exercise rehabilitation program to treat rotator cuff inflammation, impingement syndrome, or small tears (C, D) Diagnostic lidocaine injections to distinguish pain sources in the shoulder area (e.g., impingement) (D)</td>
<td></td>
<td>Prolonged or frequent use of cortisone injections into the sub-acromial space or the shoulder joint (D)</td>
</tr>
<tr>
<td>Rest and immobilization</td>
<td>Brief use of a sling for severe shoulder pain (1 to 2 days), with pendulum exercises to prevent stiffness in cases of rotator cuff conditions (D) Three weeks use, or less, of a sling after an initial shoulder dislocation and reduction (C) Same for AC separations or severe sprains (D)</td>
<td></td>
<td>Prolonged use of a sling only for symptom control (D)</td>
</tr>
<tr>
<td>Detection of physiologic abnormalities</td>
<td>Rarely, nerve conduction time of the suprascapular nerve for cases of severe cuff weakness unaccompanied by signs of a rotator cuff tear (D)</td>
<td></td>
<td>EMG or NCV studies as part of a shoulder evaluation for usual diagnoses (D)</td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Radiography</td>
<td></td>
<td>For acute AC joint separations, stress films (views of both shoulders, with and without patient holding 15-lb weights) (D)</td>
<td>Routine radiographs for shoulder complaints before 4 to 6 weeks of conservative treatment (D)</td>
</tr>
<tr>
<td>Other imaging procedures</td>
<td>MRI for preoperative evaluation of partial-thickness or large full-thickness rotator cuff tears (C, D)</td>
<td>Arthrography for preoperative evaluation of small full-thickness tears (C)</td>
<td>Routine MRI or arthrography for evaluation without surgical indications (D) Ultrasonography for evaluation of rotator cuff (C)</td>
</tr>
<tr>
<td>Surgical considerations</td>
<td>Anterior repair for recurrent dislocation after 2 to 3 dislocations (D)</td>
<td>Bone scan for detection of AC joint arthritis (D)</td>
<td>Anterior repair for initial shoulder dislocation (C)</td>
</tr>
<tr>
<td></td>
<td>Resection of outer clavicle for chronic disabling AC joint pain after conservative care of acute separation (C)</td>
<td></td>
<td>Acute repair of AC separation (C)</td>
</tr>
<tr>
<td></td>
<td>Rotator cuff repair after firm diagnosis is made and rehabilitation efforts have failed (D)</td>
<td></td>
<td>Acute repair of rotator cuff tears, except for massive acute tears (C)</td>
</tr>
<tr>
<td></td>
<td>Capsular shift surgery for disabling instability (D)</td>
<td></td>
<td>Surgery for recurrent dislocation of instability before rehabilitation efforts (C)</td>
</tr>
<tr>
<td></td>
<td>Subacromial decompression after failure of non-operative care (C)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).
C = Limited research-based evidence (at least one adequate scientific study of patients with shoulder disorders).
D = Panel interpretation of information not meeting inclusion criteria for research-based evidence.
Algorithm 9.1. Initial Evaluation of Occupational Shoulder Complaints

1. Workers with < 3 months activity intolerance due to shoulder symptoms potentially related to occupational injury or exposure.

2. Focused medical and work histories and physical examination to search for red flags (see Table 9-1). Examination includes testing for range of motion, strength and stability, and impingement.

3. Are there any red flags?

   - Yes: Proceed to:
     - Red flags for cardiac disease.
     - Red flags for shoulder fracture.
     - Red flags for cancer or infection.
     - Red flags for non-surgical problems.

   - No: Proceed to:
     - CBC, ESR in patients with cancer or infection. Plain-film radiographs may be negative. Consider joint aspiration or consultation.

4. In absence of red flags, diagnostic testing is generally not helpful in the first 4-6 weeks.

5. Evidence of serious disease?

   - Yes: Arrange appropriate treatment or consultation.
   - No: Evidence of non-shoulder medical problems causing shoulder complaints?

   - Yes: Go to Algorithm 9-2
   - No: Exit Algorithm
Algorithm 9.2. Initial and Follow-up Management of Occupational Shoulder Complaints

**Initial Visit**

- Workers with potentially work-related shoulder complaints and no serious underlying conditions (see Algorithm 9-1).
- Provide assurance and education about shoulder problems.
- Does patient require help relieving symptoms?
  - Yes
    - Recommend comfort options based on risk/benefit and patient preferences (see Table 9-3).
  - No
    - Recommend activity and work alterations to decrease symptoms (see Table 9-4). Review daily activities, including work, and encourage return to full activity (returning modified or full work) as soon as possible. Encourage mobilization and strengthening exercises within limits of symptoms.
- Symptoms improved?
  - Yes
    - Return to activities.
  - No

**Follow-up Visits**

- Change in symptoms?
  - Yes
    - Review history and physical exam.
  - No
- Provide assurance that recovery is expected. Recommend exercise/activity to avoid deconditioning and reduce risk of recurrence (see Table 9-4). Begin muscle conditioning exercises after a few weeks. Support return to modified work and daily activities.
- Any red flags?
  - Yes
    - Return to Algorithm 9-1
  - No
    - Reasonable return to work and activity at 4-6 weeks?
      - Yes
        - Recurrence of symptoms?
          - Yes
            - Return promptly as tolerated to full activities. Implement preventive measures as appropriate.
          - No
            - Return to Algorithm 9-1
      - No
  - Go to Algorithm 9-3

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Algorithm 9-3. Evaluation of Slow-to-recover Patients with Occupational Shoulder Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to shoulder symptoms not improving over 4-6 weeks (see Algorithm 9-2)

- Passive range of motion greater than active range?
  - No
  - Shoulder laxity?
    - Yes
      - Refer for stabilization exercises
    - No
      - Adequate stabilization exercises?
        - Yes
          - Refer for specific suspected conditions, e.g., recurrent dislocation or shoulder instability.
        - No
          - Consultation results positive?
            - No
              - Go to Algorithm 9-5
            - Yes
              - Go to Algorithm 9-4
  - Yes
    - Clarify anatomy with MRI.
      - MRI positive for rotator cuff tear or impingement?
        - Yes
          - Refer for possible corticosteroid injection or surgical repair.
        - No
          - Go to Algorithm 9-4
**Algorithm 9-4. Surgical Considerations for Patients with Anatomic and Physiologic Evidence of Shoulder Instability, Complete Rotator Cuff Tear, or Impingement Syndrome Coupled with Persistent Complaints**

Workers with activity limitation due to documented shoulder instability, rotator cuff tear, impingement, or AC separation persisting > 4-6 weeks (see Algorithm 9-3).

Primary care clinician reviews test results with patient and discusses short- and long-term risks, benefits, complications, and side effects.

Does patient desire surgery to correct anatomic defect?

- **Yes**
  - Is activity intolerance decreasing with muscle strengthening?
    - **Yes**
      - Refer to conservative surgeon for specific recommendation and discussion based on expected evidence-based short- and long-term outcomes.
    - **No**
      - Surgery performed?
        - **Yes**
          - Postoperative care and rapid reconditioning.
        - **Go to Algorithm 9-6**

- **No**
Algorithm 9-5. Further Management of Occupational Shoulder Complaints

Workers with shoulder-related activity limitations > 4-6 weeks, but < 3 months duration following special studies or surgery (see Algorithms 9-3 and 54).

Assure patient. Establish safe exercise plan to build tolerance for intended activity.

Return to work activity

Yes

Recovery?

No

Does patient require help with comfort to tolerate increasing work activity and exercise?

Yes

Recommend comfort options (see Table 9-3), considering risks/benefits related to exercise.

No

Is patient overcoming activity intolerance?

Yes

Review history, physical findings, and results of special testing.

No

Further questions about diagnosis?

Yes

Return to Algorithm 9-3 or seek consultation.

No

Is patient convinced he/she will be able to tolerate intended work activity?

Yes

Help patient consider options.

No

Point out that shoulder symptoms rarely prevent individuals from seeking information and/or formal shoulder rehabilitation program.

Is patient seeking information about options?

Yes

Address specific issues or arrange for job and/or psychosocial evaluation, and/or formal shoulder rehabilitation program.

No

Continue to encourage daily exercise to maximize work activity tolerance and reduce recurrence.

Recovery?

Yes

Return to work activity.
Summary Tables: Recommendations and Evidence

Table 1 summarizes the recommendations from the Evidence-based Practice Elbow Panel for diagnostic testing for elbow disorders. Table 2 is a summary of recommendations for managing these disorders. Table 3 summarizes the recommendations for using ergonomic interventions and return-to-work programs. The recommendations are based on critically appraised higher quality research evidence and on expert consensus observing First Principles when higher quality evidence was unavailable or inconsistent. The reader is cautioned to utilize the more detailed indications, specific appropriate diagnoses, temporal sequencing, prior testing or treatment, and contraindications that are elaborated in more detail for each test or treatment in the body of this guideline in using these recommendations in clinical practice or medical management. These recommendations are not simple "yes/no" criteria, and the evidence supporting them is in nearly all circumstances developed from typical patients, not unusual situations or exceptions.

Recommendations are made under the following categories:

- Strongly Recommended, "A" Level
- Moderately Recommended, "B" Level
- Recommended, "C" Level
- Insufficient-Recommended (Consensus-based), "I" Level
- Insufficient-No Recommendation (Consensus-based), "I" Level
- Insufficient-Not Recommended (Consensus-based), "I" Level
- Not Recommended, "C" Level
- Moderately Not Recommended, "B" Level
- Strongly Not Recommended, "A" Level
<table>
<thead>
<tr>
<th>Test</th>
<th>Recommendation(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antibodies</strong></td>
<td>Antibody levels to evaluate and diagnose patients with elbow pain that have reasonable suspicion of rheumatological disorder – <strong>Recommended, Insufficient Evidence (I)</strong>. Antibody levels as a screen to confirm specific disorders (e.g., rheumatoid arthritis) – <strong>Strongly Recommended, Evidence (A)</strong></td>
</tr>
<tr>
<td><strong>Elbow Arthroscopy</strong></td>
<td>Arthroscopy to evaluate and diagnose patients with elbow pain that have suspicion of intraarticular body, and other subacute or chronic mechanical symptoms – <strong>Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>Arthroscopy for diagnosing acute elbow pain – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>Arthroscopy for diagnosis or treatment in acute, subacute, or chronic patients with osteoarthrosis in the absence of a remediable mechanical defect such as symptomatic loose body – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>Arthroscopy with chondroplasty for treatment of osteoarthrosis – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td><strong>Bone Scans</strong></td>
<td>Bone scanning for select use in acute, subacute or chronic elbow pain to assist in the diagnosis of osteonecrosis, neoplasms and other conditions with increased polyostotic bone metabolism, particularly where there is more than one joint to be evaluated – <strong>Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>Bone scanning for routine use in elbow joint evaluations – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td><strong>Computerized Tomography (CT)</strong></td>
<td>Routine CT for evaluation of acute, subacute, or chronic elbow pain – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>CT for evaluating patients with osteonecrosis or following traumatic dislocations or arthroplasty-associated recurrent dislocations – <strong>Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>CT for those with need for advanced imaging but have contraindications for MRI – <strong>Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td></td>
<td>Helical CT for select patients with acute, subacute or chronic elbow pain in whom advanced imaging of bony structures is thought to be potentially helpful – <strong>Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td><strong>C-Reactive Protein, Erythrocyte Sedimentation Rate, and Other Non-Specific Inflammatory Markers</strong></td>
<td>Erythrocyte sedimentation rate and other inflammatory markers for screening for inflammatory disorders or prosthetic sepsis with reasonable suspicion of inflammatory disorder in patients with subacute or chronic elbow pain – <strong>Recommended, Insufficient Evidence (I)</strong>. Ordering of a large, diverse array of anti-inflammatory markers without targeting a few specific disorders diagnostically is not recommended.</td>
</tr>
<tr>
<td><strong>Electromyography and Nerve Conduction Studies (Electrodiagnostic Studies [EDS])</strong></td>
<td>EDS to assist in the diagnosis of subacute or chronic peripheral nerve entrapments, including ulnar neuropathies, radial neuropathies and median neuropathies – <strong>Recommended, Insufficient Evidence (I)</strong>. Quality EDS to assist in securing a firm diagnosis for those patients without a clear diagnosis – <strong>Recommended, Insufficient Evidence (I)</strong>. EDS as one of two methods to attempt to objectively secure a diagnosis prior to surgical release – <strong>Recommended, Insufficient Evidence (I)</strong>. EDS for initial evaluation of most patients as it does not change the management of the condition – <strong>Not Recommended, Insufficient Evidence (I)</strong></td>
</tr>
<tr>
<td>Method</td>
<td>Recommendation</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Magnetic Resonance Imaging (MRI)**        | NRI for diagnosing osteonecrosis – **Recommended, Insufficient Evidence (I)**  
NRI for routine evaluation of acute, subacute, or chronic elbow joint pathology, including degenerative joint disease – **Not Recommended, Insufficient Evidence (I)**  
NRI for evaluation of biceps tendinosis or ruptures – **Recommended, Insufficient Evidence (I)**  |
| **X-rays**                                  | X-rays for evaluation of acute, subacute or chronic elbow pain – **Recommended, Insufficient Evidence (I)**  
X-rays to rule out osteomyelitis or joint effusion in cases of significant septic olecranon bursitis – **Recommended, Insufficient Evidence (I)**  
X-rays that include at least 2-3 views to diagnose elbow fractures – **Recommended, Insufficient Evidence (I)**  
X-rays that include at least 2-3 views for elbow dislocation to rule-out fractures – **Recommended, Insufficient Evidence (I)**  
For elbow sprains, x-rays that include at least 2-3 views to rule-out fractures – **Recommended, Insufficient Evidence (I)**. Repeat x-rays after reduction are also recommended.  
X-rays for biceps tendinosis or ruptures – **Recommended, Insufficient Evidence (I)**  |
| **Single Proton Emission Computed Tomography (SPECT) and Positron Emission Tomography (PET)** | SPECT and PET for diagnosing acute, subacute or chronic elbow pain – **Not Recommended, Insufficient Evidence (I)**  |
| **Ultrasound**                              | Diagnostic ultrasound for the evaluation and diagnosis of biceps tendinosis or ruptures – **Recommended, Insufficient Evidence (I)**  
Diagnostic ultrasound for the evaluation and diagnosis of other elbow disorders, including osteonecrosis, osteoarthritis, dysplasia, and fractures – **No Recommendation, Insufficient Evidence (I)**  
Diagnostic ultrasound for the evaluation and diagnosis of ulnar neuropathies at the elbow – **No Recommendation, Insufficient Evidence (I)**  |
| **Gram Stain and Culture and Sensitivity**  | Aspiration of the fluid and analyses including Gram stain and culture and sensitivity to determine infection for olecranon bursitis – **Recommended, Insufficient Evidence (I)**  |
### Table 2. Summary of Recommendations for Managing Elbow Disorders

<table>
<thead>
<tr>
<th>Elbow Disorder</th>
<th>Treatment with Evidence Rating/Recommendation Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Recommended</td>
</tr>
<tr>
<td>Contusion</td>
<td>Education (I)</td>
</tr>
<tr>
<td></td>
<td>NSAIDs (I)</td>
</tr>
<tr>
<td></td>
<td>Acetaminophen (I)</td>
</tr>
<tr>
<td></td>
<td>Ice (I)</td>
</tr>
<tr>
<td></td>
<td>Compression (I)</td>
</tr>
<tr>
<td></td>
<td>Range-of-motion exercises (I)</td>
</tr>
<tr>
<td></td>
<td>Avoidance of immobilization (I)</td>
</tr>
<tr>
<td>Lateral Epicondylalgia (Lateral Epicondylitis)</td>
<td>Restrict patient work to tasks that do not involve high-force, stereotypical hand gripping or pinching or use of high-amplitude vibrating hand-held tools (I)</td>
</tr>
<tr>
<td></td>
<td>Education (I)</td>
</tr>
<tr>
<td></td>
<td>NSAIDs for acute, subacute, or chronic lateral epicondylalgia (I)</td>
</tr>
<tr>
<td></td>
<td>Proton pump inhibitors for patients at substantially increased risk for gastrointestinal (GI) bleeding (A)</td>
</tr>
<tr>
<td></td>
<td>Misoprostol for patients at substantially increased risk for GI bleeding (A)</td>
</tr>
<tr>
<td></td>
<td>Sucralfate for patients at substantially increased risk for GI bleeding (B)</td>
</tr>
<tr>
<td></td>
<td>H2 blockers for patients at substantially increased risk for GI bleeding (C)</td>
</tr>
<tr>
<td></td>
<td>Patients with known cardiovascular disease or multiple risk factors for cardiovascular disease should have the risks and benefits of NSAID therapy for pain discussed (I)</td>
</tr>
<tr>
<td></td>
<td>Acetaminophen or aspirin as first-line therapy for patients with cardiovascular disease risk factors (A)</td>
</tr>
<tr>
<td></td>
<td>Acetaminophen for elbow pain, particularly for patients with contraindications for NSAIDs (I)</td>
</tr>
<tr>
<td></td>
<td>Topical NSAIDs for acute, subacute, or chronic lateral epicondylalgia (B)</td>
</tr>
<tr>
<td>Medial Epicondylalgia (Medial Epicondylitis)</td>
<td>As there is almost no quality literature on medial epicondylalgia, treatment of this condition is by analogy to lateral epicondylalgia (see above) and should be considered &quot;Insufficient Evidence&quot; recommendations.</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Olecranon Bursitis</td>
<td>Education (I)</td>
</tr>
<tr>
<td></td>
<td>Soft padding of the elbow, soft elbow supports, and ace wraps (I)</td>
</tr>
<tr>
<td></td>
<td>Modifying activities to avoid direct pressure over the olecranon and allowing time to reabsorb the fluid (I)</td>
</tr>
<tr>
<td></td>
<td>Aspiration of a clinically infected or questionably infected bursa (I)</td>
</tr>
<tr>
<td></td>
<td>Surgical drainage (I)</td>
</tr>
<tr>
<td></td>
<td>Surgical resection of the bursa for chronic bursitis with recurrent drainage (I)</td>
</tr>
<tr>
<td>Elbow Fractures, Including Non-displaced Radial Head Fractures</td>
<td>NSAIDs: and acetaminophen to control pain (I)</td>
</tr>
<tr>
<td></td>
<td>Elbow slings for non-displaced and occult radial head fractures (I)</td>
</tr>
<tr>
<td></td>
<td>Casts for non-displaced and occult radial head fractures (I)</td>
</tr>
<tr>
<td></td>
<td>Opioids for select patients with pain (I)</td>
</tr>
<tr>
<td></td>
<td>Surgical fixation for displaced elbow fractures (I)</td>
</tr>
<tr>
<td></td>
<td>Education, usually by physical or occupational therapists for select patients needing education after cast removal (I)</td>
</tr>
<tr>
<td></td>
<td>Physical or occupational therapy for select patients with functional disabilities, or those unable to return to work after cast removal (I)</td>
</tr>
<tr>
<td></td>
<td>Routine referral for physical or occupational therapy after cast removal for elbow fracture of otherwise healthy patients who are able to return to work (I)</td>
</tr>
</tbody>
</table>
| Elbow Dislocations | Education (1)  
|                   | NSAIDs and acetaminophen (1)  
|                   | Opioids for select patients with pain (1)  
|                   | Posterior elbow splint and slings (1)  
|                   | Anesthetic with or without opioid, intraarticular injection(s) either pre-reduction or post-reduction for pain management (1)  
|                   | General anesthesia to facilitate reduction in select patients (1)  
|                   | Surgery to repair elbow joints that either recurrently dislocate or are otherwise unstable after dislocation(s) (1) |
| Elbow Sprains | Education (1)  
|                | NSAIDs and acetaminophen (1)  
|                | Opioids for select patients with pain from severe elbow sprains (1)  
|                | Slings (1) |
| Biceps Tendinosus (or Tendinitis) and Tears/Ruptures | Education (1)  
|           | NSAIDs and acetaminophen (1)  
|           | Opioids for select patients with pain from moderately severe to severe biceps tendinosis, particularly with nocturnal sleep disruption. Post-operative patients are also candidates (1)  
|           | Slings and splints for biceps tendinosis, ruptures, and post-operative patients (1)  
|           | Range-of-motion transitioning to strengthening exercises for biceps tendinosis, ruptures, and post-operative patients (1)  
|           | Surgical repair of distal biceps rupture (1) |
| Triceps Tendinosus (or Tendinitis) and Tears/Ruptures | There are no quality studies for this disorder, thus treatment by analogy to biceps tendinosis and tears/ruptures is recommended (see above) |
| Ulnar Neuropathies at the Elbow (including Condylar Groove-Associated Ulnar Neuropathy and Cubital Tunnel Syndrome) | Removal from job tasks with repeated or sustained elbow hyperflexion (1)  
|          | Education (1)  
|          | Patients should be taught to sleep with elbows extended rather than flexed (1)  
|          | Patients should avoid hyperflexed (≥ 90°) elbow postures at work or during avocational activities (1)  
|          | Exercise for rehabilitation of patients with post-operative ulnar neuropathy at the elbow with significant deficits (1)  
|          | NSAIDs and acetaminophen for postoperative pain management of ulnar neuropathy-related pain (1)  
|          | Limited use of opioids for a few days to a couple weeks for select patients who have undergone recent ulnar neuropathy surgery, particularly if complications have occurred (1)  
|          | Nonsurgical elbow splinting or bracing for acute, subacute, or chronic ulnar neuropathies at the elbow (1)  
|          | Ultrasound for acute, subacute, or chronic ulnar neuropathies (1)  
|          | Exercises for acute, subacute, or chronic ulnar neuropathy at the elbow (1)  
|          | Oral injections (condylar groove or cubital tunnel) of glucocorticosteroids for acute, subacute, or chronic ulnar neuropathies at the elbow (1)  
|          | Other vitamins for acute, subacute, or chronic ulnar neuropathies (1)  
|          | Lidocaine patches for acute, subacute, or chronic ulnar neuropathies with pain (1)  
|          | Topically administered ketamine for acute, subacute, or chronic ulnar neuropathies (1)  
|          | NSAIDs and acetaminophen as a primary treatment for acute, subacute, or chronic ulnar neuropathies at the elbow (1)  
|          | Routine use of opioids for acute, subacute, or chronic ulnar neuropathies at the elbow (1)  
|          | Pyridoxine for routine treatment of acute, subacute, or chronic ulnar neuropathies in patients without vitamin deficiencies (1)  
|          | Magnets for management of pain for acute, subacute, or chronic ulnar neuropathies (1)  
|          | Low-level laser therapy (1)  |
### Simple decompression for patients who fail non-operative treatment for subacute or chronic ulnar neuropathies or patients who have emergent or urgent indications (e.g., acute compression due to fracture, arthritis or compartment syndrome with unrelenting symptoms of nerve impairment). (C)

Anterior subcutaneous transposition for patients who fail non-operative treatment for subacute or chronic ulnar neuropathies or patients who have emergent or urgent indications (e.g., acute compression due to fracture, arthritis or compartment syndrome with unrelenting symptoms of nerve impairment). (I)

Medial epicondylectomy for patients who fail non-operative treatment for subacute or chronic ulnar neuropathies or patients who have emergent or urgent indications (e.g., acute compression due to fracture, arthritis or compartment syndrome with unrelenting symptoms of nerve impairment). (I)

<table>
<thead>
<tr>
<th>Radial Nerve Entrapment (Including Radial Tunnel Syndrome)</th>
<th>In the absence of quality evidence for treatment of these radiculopathies, it is recommended that the treatments for ulnar neuropathy at the elbow (see above) be used to infer treatment for radial neuropathies.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronator Syndrome (Median Neuropathies in the Forearm)</td>
<td>In the absence of quality evidence for treatment of these radiculopathies, it is recommended that the treatments for ulnar neuropathy at the elbow (see above) be used to infer treatment for median neuropathies.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>subacute, or chronic ulnar neuropathies with pain (I)</th>
<th>Acupuncture for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biofeedback for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
<td>Manipulation and mobilization for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
</tr>
<tr>
<td>Massage for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
<td>Soft tissue massage for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
</tr>
<tr>
<td>Iontophoresis for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
<td>Phonophoresis for acute, subacute, or chronic ulnar neuropathies at the elbow (I)</td>
</tr>
</tbody>
</table>

for acute, subacute, or chronic ulnar neuropathies (I)
### Table 11-4. Methods of Symptom Control for Forearm, Wrist, and Hand Complaints

#### RECOMMENDED

**Nonprescription Medications**
- Acetaminophen (safest)
- NSAIDs (aspirin, ibuprofen) (secondary choice)

**Physical Modalities**
- Adjust or modify workstation, job tasks, or work hours and methods
- Stretching
- Specific hand and wrist exercises for range of motion and strengthening
- At-home local applications of cold packs first few days of acute complaints; thereafter, applications of heat packs
- Aerobic exercise to maintain general conditioning
- Initial and follow-up visits for education, counseling, and evaluating home exercise

**Prescribed Pharmaceutical Methods**

#### OPTIONS

<table>
<thead>
<tr>
<th>Ligament/Tendon Strain</th>
<th>Tendinitis/Tenosynovitis</th>
<th>DeQuervain’s Syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit motion that causes pain</td>
<td>Limit motion of inflamed structures</td>
<td>Limit motion of inflamed structures with wrist and thumb splint</td>
</tr>
<tr>
<td></td>
<td>Injections of lidocaine and corticosteroids</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trigger Finger</th>
<th>Carpal Tunnel Syndrome</th>
<th>Ganglion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection of lidocaine and corticosteroids</td>
<td>Splinting of wrist in neutral position at night &amp; day</td>
<td>Corticosteroid injection</td>
</tr>
<tr>
<td></td>
<td>Injections of lidocaine and corticosteroids</td>
<td>Aspiration</td>
</tr>
</tbody>
</table>

#### Nonspecific Hand or Wrist Pain

None
## Summary of Recommendations and Evidence

See Table 11-7.

### Table 11-7. Summary of Recommendations for Evaluating and Managing Forearm, Wrist, and Hand Complaints

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and physical</td>
<td>Basic history, focused exam, and search for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>exam</td>
<td>red flags (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Patient education regarding prevention, diagnosis,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>diagnosis, prognosis, and expectations of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>medical treatment (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication (See</td>
<td>Acetaminophen (C)</td>
<td>Opioids, short course (C)</td>
<td>Use of opioids for more than 2 weeks (C)</td>
</tr>
<tr>
<td>Chapter 3)</td>
<td>NSAIDs (B)</td>
<td>Rarely, corticosteroids (C)</td>
<td></td>
</tr>
<tr>
<td>Physical treatment</td>
<td>Instructions for home exercises</td>
<td>At-home applications of heat or cold packs (D)</td>
<td>Passive modalities</td>
</tr>
<tr>
<td>methods</td>
<td></td>
<td></td>
<td>TENS units (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Biofeedback (D)</td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td>Injections</td>
<td>Injection of corticosteroids into carpal tunnel in mild or moderate cases of CTS after trial of splinting and medication (C) Initial injection into tendon sheath for clearly diagnosed cases of DeQuervain's syndrome, tenosynovitis, or trigger finger (D)</td>
<td>Initial injection of corticosteroids in moderate cases of tendinitis (D)</td>
<td>Repeated or frequent injection of corticosteroids into carpal tunnel, tendon sheaths, ganglia, etc. (D)</td>
</tr>
<tr>
<td>Rest and immobilization</td>
<td>Splinting as first-line conservative treatment for CTS, DeQuervain's, strains, etc. (C)</td>
<td>Prolonged splinting (leads to weakness and stiffness) (D) Prolonged post-operative splinting (C)</td>
<td></td>
</tr>
<tr>
<td>Activity and exercise</td>
<td>Stretching Aerobic exercise Maintaining strength and mobility of all remaining body parts while recovering from wrist problems (C)</td>
<td></td>
<td>Reduced general activities while recovering (D)</td>
</tr>
<tr>
<td>Detection of neurologic abnormalities</td>
<td>NCV for median (E) or ulnar (C) impingement at the wrist after failure of conservative treatment</td>
<td>Routine use of NCV or EMG in diagnostic evaluation of nerve entrapment or screening in patients w/o symptoms (D) Use of vibrometry for screening (C)</td>
<td></td>
</tr>
<tr>
<td>Radiography</td>
<td>Plain films for suspected scaphoid fractures, repeat films in 7-10 days (D)</td>
<td>Limited bone scan to detect fractures if clinical suspicion exists (C)</td>
<td>Routine use for evaluation of forearm, wrist, and hand (D)</td>
</tr>
<tr>
<td>Other imaging procedures</td>
<td>Use of arthrography, MRI, or CT scans prior to history and physical examination by a qualified specialist (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------</td>
<td>----------</td>
<td>-----------------</td>
</tr>
</tbody>
</table>
| Surgical considerations  | Early surgical intervention for severe CTS confirmed by NCV may be indicated (B)  
|                          | Tendinitis (DeQuervain's), ganglion, or trigger finger referral to surgeon only after patient education and conservative treatment, including splinting and injection, have failed (C, D) |          |                 |
| Psychosocial factors     | Consider counseling for severe hand injuries (D)  
|                          | Awareness by treating practitioner of interplay between physical, economic, and psychological factors in patients with MSDs (C, D) |          |                 |

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).  
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).  
C = Limited research-based evidence (at least one adequate scientific study of patients with forearm, wrist, or hand disorders).  
D = Reviewer or consensus interpretation of evidence not meeting inclusion criteria for research-based evidence.
Algorithm 11-2. Initial and Follow-up Management of Occupational Forearm, Wrist, and Hand Complaints

**Initial Visit**

Workers with hand, wrist or forearm potentially work-related complaints and no serious underlying conditions (see Algorithm 11-1).

- Provide assurance and education about forearm, hand, or wrist problems.
  - Does patient require help relieving symptoms?
    - Yes → Recommend comfort options based on risk/benefit and patient preferences (see Table 11-3).
    - No → Recommend activity and work restrictions to decrease symptoms (see Table 11-4). Review daily activities (including work) and encourage return to full activity (including modified or full work) as soon as possible. Encourage aerobic exercise within limits of symptoms.
  - Symptoms improved?
    - Yes → Return to full activities.
    - No → Change in symptoms?
      - Yes → Review history and physical exam.
      - No → Provide assurance that recovery is expected. Recommend activities to avoid exacerbation and prevent recurrences (see Table 11-4). Support return to modified work and daily activities. Begin muscle-conditioning exercises after a few weeks.

**Follow-up Visits**

- Has reasonable activity tolerance returned within 4-6 weeks?
  - Yes → Recurrence of symptoms?
    - Yes → Return to Algorithm 11-1
    - No → Go to Algorithm 11-3
  - No → Return to normal activities, job duties, and preventive measures.

- Any red flags?
  - Yes → Review history and physical exam.
  - No → Provide assurance that recovery is expected. Recommend activities to avoid exacerbation and prevent recurrences (see Table 11-4). Support return to modified work and daily activities. Begin muscle-conditioning exercises after a few weeks.
Algorithm 11.3. Evaluation of Slow-to-recover Patients with Occupational Forearm, Wrist, and Hand Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to hand or wrist symptoms not improving over 4-6 weeks (see Algorithm 11.2).

- Neurologic symptoms in forearm, wrist, or hand? (Yes/No)
  - Yes
    - Primary nonneurologic symptoms? (Yes/No)
      - Yes:
        - Evaluate for specific suspected conditions, e.g., strain versus tendinitis.
      - No
        - Examine results positive? (Yes/No)
          - Yes: Exit Algorithm
          - No: Go to Algorithm 11.5
    - No
      - Significant (e.g., limiting work ability) symptoms present > 4-6 weeks? (Yes/No)
        - Yes: Go to Algorithm 11.2
        - No: Objective site of nerve dysfunction on physical exam? (Yes/No)
          - No
            - Nerve conduction velocity studies (Yes/No)
              - Yes
                - Evidence of nerve dysfunction on NCV? (Yes/No)
                  - Yes: Consult to further define nerve compression.
                  - No: Go to Algorithm 11.4
              - No
                - Go to Algorithm 11.5
          - Yes
            - Physiologic and anatomic evidence of nerve compression? (Yes/No)
              - Yes: Go to Algorithm 11.4
              - No: Go to Algorithm 11.5
Algorithm 11-4. Surgical Considerations for Patients with Anatomic and Physiologic Evidence of Nerve Root Compression and Persistent Forearm, Wrist, and Hand Symptoms

Workers with activity limitation due to specific documented nerve compression persisting 4-6 weeks (see Algorithm 11-3).

Primary care clinician reviews test results with patient and discusses short- and long-term risks, benefits, complications, and side effects.

Does patient desire surgery to correct anatomic defect?

Yes

Is activity intolerance decreasing with muscle stretching and strengthening?

Yes

No

Refer to conservative orthopedist or hand surgeon for specific recommendations and discussion based on expected evidence-based short- and long-term outcomes.

Surgery performed?

Yes

Postoperative care and rapid reconditioning

Go to Algorithm 11-5

Forearm, Wrist, and Hand Complaints 277
Algorithm 11-5. Further Management of Occupational Forearm, Wrist, and Hand Complaints

Workers with forearm-, wrist-, or hand-related activity limitations > 4-6 weeks, but < 3 months duration following special studies or surgery (see Algorithms 11-3 and 11-4)

Assure patient. Establish safe exercise plan to build tolerance for intended activity.

Progressive return to normal work activity. Yes

Recovery?

No

Does patient require help with comfort to tolerate increasing work activity and exercise? Yes

Recommend comfort options (see Table 11-3), considering risks/benefits related to exercise.

No

Is patient overcoming activity intolerance? Yes

Review history, physical findings, and results of special testing.

No

Further questions about diagnosis? Yes

Return to Algorithm 11-3 or seek consultation

No

Is patient convinced he/she will be able to tolerate intended work activity? Yes

Help patient consider options.

No

Point out that forearm/hand/wrist symptoms rarely prevent individuals from seeking information. Ask if other factors could be involved

Is patient seeking information about options? Yes

No

Address specific issues or arrange for job or psychosocial evaluation

Continue to encourage daily exercise to maximize work activity tolerance and reduce recurrence

Recovery?

Yes

Return to normal work activities

No
Master Algorithm. ACOEM Guidelines for Care of Acute and Subacute Occupational Low Back Complaints

1. Initial visit
   - Work and medical history, focused physical examination (see Tables 12-2, 12-3, and 12-4).
   - Red flags for potentially serious condition (see Table 12-1)?
     - No
     - Discuss, educate, reassure, manage pain (see Table 12-5). Prescribe activity (see Table 12-6).
     - Modify activities and work.
     - Return to usual activities.
     - If unresolved, reassess with interval history and brief physical exam (see Algorithm 12-2).
       - Measure, discuss, educate, prescribe therapeutic exercise, and modify work as needed (see Table 12-5).
     - 7 days
       - Emergency studies (see Algorithm 12-3).
       - Emergent referral.
       - Imaging, lab studies (see Algorithm 12-1).

2. 4-6 weeks
   - If unresolved, reassess with detailed history, physical exam
     - Special studies, if indicated (see Algorithm 12-3 and Table 12-6).
     - Pain assessment if indicated (see Chapter 9).
     - Positive
       - Yes
       - Specialized advice (see Algorithms 12-3 and 12-4).
         - Psychological consultation.
     - No
       - Specialized advice (see Algorithms 12-3 and 12-4).

3. 6-8 weeks
   - If unresolved, evaluation by low back specialist (see Algorithm 12-8).
### Summary of Evidence and Recommendations

See Table 12-8.

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and physical exam</td>
<td>Basic history (B)</td>
<td>Pain drawing and visual analog scale (D)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of cancer or infection (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Signs of symptoms of cauda equina syndrome (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>History of significant trauma (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychosocial history (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Straight- and crossed-leg raising tests (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focused neurologic exam (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Patient education about low back symptoms (B)</td>
<td>Back school in nonoccupational settings (C)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Back school in occupational settings (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication (See Chapter 3)</td>
<td>Acetaminophen (C)</td>
<td>Opioids, short course (C)</td>
<td>Using opioids for more than 3 weeks (C)</td>
</tr>
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<td></td>
<td>NSAIDs (B)</td>
<td>Muscle relaxants (C)</td>
<td>Oral corticosteroids (C)</td>
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<td></td>
<td>Phenytoin (C)</td>
<td>Cocaine (E)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Antidepressants (C)</td>
</tr>
<tr>
<td>Physical treatment methods</td>
<td>Manipulation of low back during first month of symptoms without radiculopathy (C)</td>
<td>Manipulation for patients with radiculopathy (C)</td>
<td>Manipulation for patients with undiagnosed neurologic deficits (D)</td>
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<tr>
<td></td>
<td>Relaxation techniques (D)</td>
<td>At-home applications of local heat or cold to low back (D)</td>
<td>Prolonged course of manipulation (longer than 4 weeks) (D)</td>
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<tr>
<td></td>
<td>At-home applications of local heat or cold to low back (D)</td>
<td>Shoe insoles (C)</td>
<td>Traction (B)</td>
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<tr>
<td></td>
<td>Shoe insoles (C)</td>
<td>In occupational setting, corset for prevention (C)</td>
<td>TENS (C)</td>
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<tr>
<td></td>
<td>In occupational setting, corset for prevention (C)</td>
<td></td>
<td>Biofeedback (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Shoe lifts (D)</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>Corset for treatment (D)</td>
</tr>
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<td>-------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Injections</td>
<td>Epidual cortisol steroid injections for radicular pain, to avoid surgery (C)</td>
<td>Epidual injections for back pain without radiculopathy (D)</td>
<td>Trigger-point injections (C)</td>
</tr>
<tr>
<td></td>
<td>Needle acupuncture (D)</td>
<td></td>
<td>Ligamentous injections (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Facet joint injections (C)</td>
</tr>
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<td>Bed rest</td>
<td>Bed rest for 2 days for severe radiculopathy (D)</td>
<td>Bed rest for more than 2 days (B)</td>
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</tr>
<tr>
<td>Activities and exercise</td>
<td>Temporary avoidance of activities that increase mechanical stress on spine (D)</td>
<td>Back-specific exercise machines (D)</td>
<td>Therapeutic stretching of back muscles (D)</td>
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<td></td>
<td>Gradual return to normal activities (B)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Low stress aerobic exercise (C)</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Conditioning exercises for trunk muscles after 2 weeks (C)</td>
<td></td>
<td></td>
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<tr>
<td>Detection of</td>
<td>If no improvement after 1 month, consider:</td>
<td>EMG for clinically obvious radiculopathy (D)</td>
<td></td>
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<tr>
<td>physiologic</td>
<td>Bone scan (C)</td>
<td></td>
<td>Surface EMG and F-wave tests (C)</td>
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<tr>
<td>abnormalities</td>
<td>Needle EMG and H-reflex tests to clarify nerve root dysfunction (C)</td>
<td></td>
<td>Thermography (C)</td>
</tr>
<tr>
<td></td>
<td>SEP’s to assess spinal stenosis (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiographs of</td>
<td>When red flags for fracture are present (C)</td>
<td>Routine use during first month of symptoms in absence of red flags (B)</td>
<td></td>
</tr>
<tr>
<td>lumber spinal</td>
<td>When red flags for cancer or infection are present (C)</td>
<td>Routine oblique views (B)</td>
<td></td>
</tr>
<tr>
<td>Imaging</td>
<td>CT or MRI when cause isara, tumor, infection, or fracture are strongly</td>
<td>Myelography or CT myelography for preoperative planning if MRI is</td>
<td>Using imaging test before 1 month in absence of red flags (B)</td>
</tr>
<tr>
<td></td>
<td>suspected and plain film radiographs are negative (C)</td>
<td>unavailable (D)</td>
<td>Diskography or CT diskography (C)</td>
</tr>
<tr>
<td></td>
<td>MRI test of choice for patients with prior back surgery (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assure quality criteria for imaging tests (B)</td>
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</table>
### Table 12-8 (continued)

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
</table>
| Surgical considerations | Discuss surgical options with patients with persistent and severe sciatica and clinical evidence of nerve root compromise if symptoms persist after 4-6 weeks of conservative therapy (B)  | Chymopapain, used after ruling out allergic sensitivity, acceptable but less efficacious than discectomy to treat herniated disk (C) | Disk surgery in patients with back pain alone, no red flags, and no nerve root compression (D)  
Surgery for spinal stenosis within the first 3 months of symptoms (D)  
Surgery for spinal stenosis when justified by imaging test rather than patient’s functional status (D)  
Spinal fusion in the absence of fracture, dislocation, complications of tumor, or infection (C) |
| Psychosocial factors  | Social, economic, and psychological factors can alter patient’s response to symptoms and treatment (B) | Referral for evaluation prior to surgical intervention (C)                                                                                                                                               | Referral for extensive evaluation and treatment prior to exploring patient expectations or psychosocial factors (D) |

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).  
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).  
C = Limited research-based evidence (at least one adequate scientific study of patients with low back complaints).  
D = Panel interpretation of information not meeting inclusion criteria for research-based evidence.
Algorithm 12-1. Initial Evaluation of Occupational Low Back Complaints

Workers with <3 months activity intolerance due to low back pain and/or back-related leg symptoms related to occupational injury or exposure.

Focused medical and work histories and physical examination to search for red flags (see Table 12-1). Examination includes neurologic screening and straight-leg-raising test and crossed SLR tests.

Red flags for distinguishing or neglecting abdominal aneurysm.

Red flags for spinal fracture.

Red flags for cancer, infection.

Red flags for cauda equina syndrome or rapidly progressing neurologic deficit.

Any red flags?

No

Plain-film radiography of lumbosacral spine. If negative after 10 days and fracture still suspected or multiple sites of pain, obtain spiral CT. Obtain consultation if result is positive or ambiguous.

CBC, ESR, UA.* in cancer or infection, plain-film radiography may be negative. Consider bone scan. Consultation if studies positive.

Immediate consultation for studies and care.

In absence of red flags, diagnostic testing is not helpful in the first 4-6 weeks.

Evidence of spondiasis disease?

No

Evidence of nonspinal problems causing back complaints?

No

Arrange appropriate treatment or consultation.

Go to Algorithm 12-2

Yes

Yes

Exit Algorithm

*Including Bence-Jones protein, if protein positive.
Algorithm 12-2. Initial and Follow-up Management of Occupational Low Back Complaints

Initial Visit

Workers with potentially work-related low-back complaints and no serious underlying conditions (see Algorithm 12-1).

Provide assurance and education about back problems.

Does patient require help relieving symptoms?

Yes

Recommend comfort options based on risk/benefit and patient preferences (see Table 12-5).

No

Review daily activities, including work, and encourage return to full activity (including modified or full work) as soon as possible (see Table 12-6). Encourage low-stress aerobic exercise within limits of symptoms.

Symptoms improve?

Yes

Progressive return to full activities.

No

Follow-up Visits

Change in symptoms?

Yes

Review history and physical exam.

No

Provide assurance that recovery is expected. Recommend activities to avoid exacerbation and prevent recurrences (see Table 12-6). Support return to modified work and daily activities. Begin muscle-conditioning exercises after a few weeks.

Has reasonable activity tolerance returned within 4-6 weeks?

Yes

Symptom recurrence?

Yes

Return to Algorithm 12-1

No

Any red flags?

No

Go to Algorithm 12-3

Return to normal activities, job duties, and preventive measures.

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Algorithm 12-3. Evaluation of Slow-to-recover Patients with Occupational Low Back Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to low back symptoms not improving over 4-6 weeks (see Algorithm 12-3)

- Neurologic symptoms in lower limbs?
  - Yes
  - Significant (e.g., limiting work ability) spasticity present > 4-6 weeks?
    - No
    - Go to Algorithm 12-2 (follow-up visits)
    - Yes
    - Obvious level of nerve root dysfunction on physical exam?
      - No
      - EMG (may include SEPs after age 50)?
        - Yes
        - Evidence of nerve dysfunction on EMG/SEPs?
          - Yes
          - Consult and/or choose imaging study to define nerve root compression.
          - Go to Algorithm 12-5
        - No
      - Physiologic and anatomic evidence of nerve root compression?
        - Yes
        - Go to Algorithm 12-4
        - No
  - No
  - Primarily low back symptoms?
    - Evaluate for specific suspected conditions, e.g., AP lateral x-rays, CBC, ESR, bone scan.
    - Test results positive?
      - No
      - Age-related changes only?
        - No
        - Go to Algorithm 12-5
        - Yes
        - Evaluate as indicated.
      - Yes
      - Exit Algorithm
    - No
    - Go to Algorithm 12-6

Algorithm 12-4. Surgical Considerations for Patients with Anatomic and Physiologic Evidence of Nerve Root Compression and Persistent Low Back Symptoms

Workers with activity limitation due to specific documented nerve root impingement persisting > 4-6 weeks (see Algorithm 12-3).

Primary care clinician reviews patient's test results with patient and discusses short- and long-term risks, benefits, complications, side effects.

Does patient desire surgery to correct anatomic defect?

Yes

Is activity intolerance decreasing?

Yes

No

Refer to conservative surgeon for specific recommendations and discussion based on expected evidence-based short- and long-term outcomes.

Surgery performed?

Yes

No

Post-surgical care and rapid reconditioning.

Go to Algorithm 12-5
## Summary of Recommendations and Evidence

See Table 13-6.

**Table 13-6. Summary of Recommendations for Evaluating and Managing Knee Complaints**

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History</td>
<td>Basic history, with careful search for mechanism of injury (C, D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical exam</td>
<td>Focused physical exam, including ligament testing and careful search for any swelling (C, D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Patient education. Full disclosure of diagnostic accuracy, prognosis, and expectations of treatment (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication</td>
<td>Acetaminophen. Aspirin (C, D)</td>
<td>Opioids for severe pain NSAIDs (C, D)</td>
<td>Use of opioids for more than 2 weeks (C, D)</td>
</tr>
<tr>
<td>Physical treatment</td>
<td>Nonoperative rehabilitation for medial collateral ligament injuries (C, D)</td>
<td></td>
<td>Passive modalities without exercise program (D)</td>
</tr>
<tr>
<td></td>
<td>Short postoperative rehabilitation for ACL repair prior to home exercise program (D)</td>
<td></td>
<td>Manipulation (D)</td>
</tr>
<tr>
<td></td>
<td>Conservative treatment for selected ruptures of the ACL (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exercises for cases of anterior knee pain or ligament strain (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirations and injections</td>
<td>Aspiration of tense acute effusions (D)</td>
<td>Repeated aspirations or corticosteroid injections (D)</td>
<td>Aspiration through infected area (D)</td>
</tr>
<tr>
<td>Rest and immobilization</td>
<td>Short period of immobilization after acute injury to relieve symptoms (C)</td>
<td>Functional bracing as part of a rehabilitation program (D)</td>
<td>Prophylactic braces (D)</td>
</tr>
<tr>
<td></td>
<td>Prolonged bracing for ACL deficient knee (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity and exercise</td>
<td>Stretching</td>
<td></td>
<td>Excessive rest (may lead to generalized debilitation) (D)</td>
</tr>
<tr>
<td></td>
<td>Aerobic exercise</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximal activity of other body parts while recovering from knee injury (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detection of neurologic abnormalities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiography</td>
<td>Plain-film radiographs for suspected red flags (C)</td>
<td>Plain-film radiographs for tense herniates (C)</td>
<td>Routine radiographic film for most knee complaints or injuries (C)</td>
</tr>
<tr>
<td>Imaging</td>
<td>MRI study to determine extent of ACL tear preoperatively (C)</td>
<td></td>
<td>MRI for ligament collateral tears (C)</td>
</tr>
<tr>
<td>Surgical considerations</td>
<td>Arthroscopic meniscectomy or repair for severe mechanical symptoms and signs or serious activity limitations if MRI findings are consistent for meniscal tear (C, D)</td>
<td>ACL reconstruction before rehabilitation has been attempted (C, D)</td>
<td>Surgical repair of isolated MCL ruptures (D)</td>
</tr>
<tr>
<td></td>
<td>ACL repair for symptomatic instability (i.e., serious activity limitation if results of Lachman and pivot-shift tests and MRI are positive (C, D)</td>
<td></td>
<td>Immediate surgical reconstruction of all ACL tears on basis of MRI findings without physical findings confirming diagnosis or worker's compensation claims requiring high knees performance (D)</td>
</tr>
</tbody>
</table>

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).
C = Limited research-based evidence (at least one adequate scientific study of patients with knee complaints).
D = Fair interpretation of information not meeting inclusion criteria for research-based evidence.
Algorithm 13.1: Initial Evaluation of Occupational Knee Complaints

Workers with < 3 months activity intolerance due to knee symptoms potentially related to occupational injury or exposure.

Focused medical and work histories and physical examination to search for red flags (see Table 13-1).

Any red flags?

Yes

Red flags for fracture or dislocation.

Plain-film radiography of knee. If after 10 days fracture still suspected, repeat plain-film radiograph, spiral CT if still unclear, but highly suggestive signs and symptoms.

Red flags for infection or inflammation.

CBC, ESR. In cases of effusion, tap and analyze for WBC, bacteria, etc., gram stain and culture. In cases of cancer or infection, plain-film radiograph may be negative. Consider bone scan for infection in younger patients. Consultation indicated if studies positive.

Red flags for neurologic or vascular compromise.

Immediate consultation for special studies and care is indicated.

No

Evidence of serious disease?

Yes

Evidence of knee problems causing knee complaints?

Yes

Go to Algorithm 13-2

No

Arrange appropriate treatment or consultation

Exit Algorithm
Algorithm 13-2. Initial and Follow-up Management of Occupational Knee Complaints

**Initial Visit**

Workers with potentially work-related knee complaints and no serious underlying conditions.

(see Algorithm 13-1).

- **Provide assurance and education about knee problems.**

- **Does patient require help relieving symptoms?**
  - Yes → **Recommend comfort actions based on risk factors and patient preferences** (see Table 13-3).
  - No → **Recommend activity alterations to decrease symptoms. Review daily activities, including work, and encourage return to full activity (including modified or full work) as soon as possible** (see Table 13-4). Encourage non-weight-bearing low-stress aerobic exercise within limits of symptoms.

- **Symptoms improving?**
  - No → **Return to activities.**
  - Yes → **Symptoms improving?**

**Follow-up Visits**

- **Changes in symptoms?**
  - Yes → **Review history and physical exam.**
  - No → **Provide assurance that recovery is expected. Recommend activities to avoid exacerbation and prevent recurrences (see Table 13-4). Support return to modified work and daily activities. Begin muscle-conditioning exercises after a few weeks.**

- **Has reasonable activity tolerance returned within four weeks?**
  - Yes
    - **Symptom recurrence?**
      - Yes
        - **Any red flags?**
          - Yes → **Return to normal activities, job duties, and preventive measures.**
          - No → **Go to Algorithm 13-3**
      - No → **Return to normal activities, job duties, and preventive measures.**
    - No → **Return to Algorithm 13-1**
Algorithm 13-3. Evaluation of Slow-to-recover Patients with Occupational Knee Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to knee symptoms not improving over 4-6 weeks (see Algorithm 13-2).

Significant inability to bear weight or ambulate > 4-6 weeks?

Yes

Locking or catching of knee?

Yes

Obtain MRI.

MRI positive for meniscus tear, or other internal derangement?*

Yes

Refer for evaluation and treatment.

Evaluate as indicated.

No

No

Primarily inflammatory or degenerative symptoms.

Evaluate for specific suspected conditions, tap effusions and analyze.

No

Test results positive?

Yes

Yes

Exit Algorithm

No

No

Go to Algorithm 13-5

Refer to orthopedist for treatment.

Objective evidence of ligament injury on physical exam?

Yes

Yes

Go to Algorithm 13-5

Obtain MRI.

Evidence of cruciate ligament tear, or other internal derangement on MRI?

No

No

Go to Algorithm 13-4

Refer to orthopedist for treatment.

*With highly accurate reader.
Algorithm 13-4. Surgical Considerations for Patients with Anatomic Evidence of Tom Meniscus or Ligament and Persistent Knee Symptoms

1. Patients with activity limitation due to specific documented internal derangement of knee persisting > 6-8 weeks (see Algorithm 13-3).
2. Primary care clinician reviews test results with patient and discusses short- and long-term risks, benefits, complications, and side effects.

3. Does patient desire surgery to correct anatomic defect?
   - No
   - Yes

4. Is activity intolerance decreasing with muscle strengthening?
   - Yes
   - No

5. Refer to conservative surgeon for specific recommendations and discussion based on expected evidence-based short- and long-term outcomes.

6. Surgery performed?
   - Yes
   - No

7. Postoperative care and rehabilitation.

Go to Algorithm 13-5
Master Algorithm, ACOEM Guidelines for Care of Acute and Subacute Occupational Ankle and Foot Complaints
# Summary of Recommendations and Evidence

See Table 14-6.

<table>
<thead>
<tr>
<th>Clinical Measure</th>
<th>Recommended</th>
<th>Optional</th>
<th>Not Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>History and physical exam</td>
<td>Basic history and physical exam, including evaluation of ability to bear weight, tenderness, and ligament stability (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient education</td>
<td>Patient education regarding diagnosis, prognosis, and expectations of treatment (D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication (See Chapter 3)</td>
<td>Acetaminophen (C) NSAIDs (B)</td>
<td>Opioids, short course (C) NSAID creams (D)</td>
<td>Use of opioids for more than 2 weeks (C)</td>
</tr>
<tr>
<td>Injections</td>
<td>For patients with point tenderness in the area of a heel spur, plantar fascitis, or Morton’s neuroma, local injection of lidocaine and corticosteroid solution (D)</td>
<td></td>
<td>Repeated or frequent injections (D)</td>
</tr>
<tr>
<td>Physical treatment methods</td>
<td>For acute injuries, at-home ice applications, range-of-motion and strengthening exercises, as taught by primary provider (D)</td>
<td>Pneumatic or pulse devices to reduce swelling (C) ESWT for plantar fasciitis (C) Coupled electrical stimulation or impulse compression for fracture (C)</td>
<td>Passive physical therapy modalities, except as initial aid prior to home exercises (D) Laser treatment (B)</td>
</tr>
<tr>
<td>Rest and immobilization (e.g., braces, supports)</td>
<td>For acute injuries, immobilization and weight bearing as tolerated, taping or bracing later to avoid exacerbation or for prevention (C)</td>
<td>Tension night splints for plantar fasciitis (B)</td>
<td>Prolonged supports or bracing without exercise (due to risk of dehiscence) (D)</td>
</tr>
<tr>
<td>Clinical Measure</td>
<td>Recommended</td>
<td>Optional</td>
<td>Not Recommended</td>
</tr>
<tr>
<td>------------------------</td>
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<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Activity and exercise</td>
<td>Stretching, Aerobic exercise, Maintenance of general activity to avoid debilitation (C), Early mobilization of patients with ankle sprain (C)</td>
<td>Full activity in presence of swelling and other signs of acute trauma (D)</td>
<td></td>
</tr>
<tr>
<td>Detection of physiologic abnormalities</td>
<td></td>
<td></td>
<td>Electrical studies for routine foot and ankle problems without clinical evidence of carpal tunnel syndrome or other entrapment neuropathies (D)</td>
</tr>
<tr>
<td>Radiography</td>
<td>Plain-film radiographs only for patients with acute ankle injuries who have signs identified in Ottawa Criteria ankle rules (B) Further evaluation if radiographic films show ankle effusion &gt; 13 mm anteriorly (C)</td>
<td></td>
<td>Routine plain-film radiographs for ankle injuries (B) Routine radiographic films for soft-tissue diagnosis (D)</td>
</tr>
<tr>
<td>Surgical considerations</td>
<td>Burn wound, if conservative treatment fails and radiographs are positive for &gt; 14-degree intermetatarsal angle (D) Excision of neuroma if conservative treatment (injections, use tapering) fails (D) Reconstruction of lateral ankle ligament for symptomatic patients with ankle laxity demonstrated on physical exam and positive stress films (C)</td>
<td></td>
<td>Diagnostic arthroscopy of ankle if diagnosis obtainable by other non-invasive method (D) Arthroscopy of ankle for synovial implantation before conservative care, including injections, is tried (D)</td>
</tr>
</tbody>
</table>

A = Strong research-based evidence (multiple relevant, high-quality scientific studies).
B = Moderate research-based evidence (one relevant, high-quality scientific study or multiple adequate scientific studies).
C = Limited research-based evidence (at least one adequate scientific study of patients with foot or ankle complaints).
D = Panel interpretation of evidence not meeting inclusion criteria for research-based evidence.
Algorithm 14-1. Initial Evaluation of Occupational Ankle and Foot Complaints

Workers with < 3 months activity intolerance due to ankle or foot complaints potentially related to occupational injury or exposure.

Focused medical and work histories and physical examination to search for red flags (see Table 14-1). Examination should include range of motion and stability testing.

Any red flags?

Yes

Red flags for ankle or foot fracture.

Plain-film radiography of ankle or foot. If fracture still suspected after 10 days, repeat film. Consider spiral CT and consultation if negative and fracture still suspected.

Red flags for infection or inflammation.

CBC, ESR. In cases of cancer or infection, plain-film radiographs may be negative. Consider bone scan. Consultation indicated if studies positive.

Red flags for rapidly progressing neurologic or vascular deficit.

Immediate consultation for special studies and care is indicated.

No

In absence of red flags, diagnostic testing generally is not helpful in the first 4-6 weeks.

Evidence of serious disease?

No

Evidence of pelvic or other lower extremity problems causing ankle or foot complaints?

No

Yes

Arrange appropriate treatment or consultation.

Exit Algorithm

Go to Algorithm 14-2
Algorithm 14-2. Initial and Follow-up Management of Occupational Ankle and Foot Complaints

Initial Visit

**Workers with potentially work-related ankle or foot complaints and no serious underlying conditions (see Algorithm 14-1).**

Provide assurance and education about ankle or foot problems.

Does patient require help relieving symptoms?**

- **Yes**
  - Recommend comfort options based on risk benefits and patient preferences (see Table 14-5).

  *Recommend activity alterations to decrease symptoms (see Table 14-4). Review daily activities, including work, and encourage return full activity (including modified or full work) as soon as possible. Encourage non-weight-bearing low-stress aerobic exercise within limits of symptoms.*

  - Symptoms improving?
    - **Yes**
      - Return to activities (see Table 14-4).
    - **No**

Follow-up Visits

**Changes in symptoms?**

- **Yes**
  - Review history and physical exam.

  **Has reasonable activity tolerance returned within 4-8 weeks?**

    - **Yes**
      - Symptoms recurrence?
        - **Yes**
          - Return to normal activities, job duties, and preventive measures.
        - **No**
          - Go to Algorithm 14-3.

    - **No**
      - Return to Algorithm 14-1.

  - **No**
    - **Any recollisions?**
      - **Yes**
        - Return to Algorithm 14-1.
Algorithm 14-3. Evaluation of Slow-to-recover Patients with Occupational Ankle and Foot Complaints (Symptoms > 4 Weeks)

Workers with activity limitations due to ankle and foot symptoms not improving over 4-6 weeks (see Algorithm 14-2).

- Evidence of bunion?
  - Yes
    - Significant (e.g., limiting work ability; pain present > 4-6 weeks despite conservative treatment? No
      - Go to Algorithm 14-2 (follow-up visit)
    - Refer for evaluation and treatment.
  - No
    - Evaluate for specific suspected conditions, e.g., strain, infection.
      - Exam and test results positive?
        - Yes
          - Referral to specialist.
        - No
          - Evaluate as indicated.
      - No
        - Exit Algorithm.

- Symptom of Morton's neuroma?
  - No
    - Evaluate for specific suspected conditions, e.g., strain, infection.
      - Exam and test results positive?
        - Yes
          - Referral to specialist.
        - No
          - Evaluate as indicated.
      - No
        - Exit Algorithm.
    - Go to Algorithm 14-5.
  - Yes
    - Intraarticular steroid injection.
      - Improvement in 4-6 weeks?
        - Yes
          - Refer for evaluation and treatment.
        - No
          - Go to Algorithm 14-4.
Algorithm 14-4. Surgical Considerations for Patients with Anatomic and Physiologic Evidence of Buried, or Morton's Neuroma, and Persistent Symptoms

Workers with activity limitation due to specific documented condition persisting > 4-6 weeks (see Algorithm 14-3).

Primary care clinician reviews test results with patient and discusses short- and long-term risks, benefits, complications, side effects.

Does patient desire surgery to correct anatomic defect?

Yes

Is activity intolerance decreasing with muscle strengthening?

Yes

No

Refer to conservative surgeon for specific recommendations and discussion based on expected evidence-based short- and long term outcomes.

Surgery performed?

Yes

No

Postoperative care and rapid reconditioning.

Go to Algorithm 14-5

Ankle and Foot Complaints
Algorithm 14.5. Further Management of Occupational Ankle and Foot Complaints

Workers with ankle or foot-related activity limitations > 4-6 weeks, but < 12 months duration following special studies or surgery (see Algorithms 14-3 and 14-4).

Assure patient. Establish safe exercise plan to build tolerance for intended activity.

Return to work activity.

Yes

Recovery?

No

Does patient require help with comfort to tolerate increasing activity and exercise?

Yes

Recommend comfort options (see Table 14-3), considering new benefits related to exercise.

Is patient overcoming activity intolerance?

Yes

Review history, physical findings, and results of special testing.

No

Further questions about diagnosis?

Yes

Return to Algorithm 14-3 or seek consultation.

Is patient convinced he/she will be able to tolerate intended work activity?

Yes

Help patient consider options.

No

Point out that ankle and foot symptoms rarely prevent individuals from seeking information. Ask if other factors could be involved.

Address specific issues or arrange for job or psychosocial evaluation.

Continue to encourage daily exercise to maximize work-activity tolerance and reduce recurrence.

Is patient seeking information about options?

Yes

Help patient consider options.

No

Recovery?

Yes

Return to work activities.

No

Is patient convinced he/she will be able to tolerate intended work activity?
Chronic Pain Complaints – MTUS Chronic Pain Medical Treatment Guidelines

Text of Medical Treatment Utilization Schedule (MTUS) can be found at the following Internet Link: http://www.dir.ca.gov/dwc/DWCPropRegs/MTUS_Regulations/RegulationsFinalClean.pdf

Acupuncture – MTUS Acupuncture Medical Treatment Guidelines

The MTUS §9792.24.1. Acupuncture Medical Treatment Guidelines can be found at the following Internet Link: http://www.dir.ca.gov/t8/9792_24_1.html

Post-Surgical MTUS Treatment Guides

The MTUS §9792.24.3. Postsurgical Treatment Guidelines can be found at the following Internet Link: http://www.dir.ca.gov/t8/9792_24_3.html
The Dynamics of Treatment Requests

<table>
<thead>
<tr>
<th>Carrier Response</th>
<th>Everyone Wins</th>
<th>Physician Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>- Minimal barriers&lt;br&gt;- Open Communication&lt;br&gt;- Confidence in MPN</td>
<td>- Eliminate UR&lt;br&gt;- Improved efficiency&lt;br&gt;- Lower costs&lt;br&gt;- Partnership&lt;br&gt;- Better outcomes</td>
</tr>
<tr>
<td>Negative</td>
<td>- Request not clear&lt;br&gt;- Poor quality report&lt;br&gt;- &quot;Because I am the doctor...&quot;</td>
<td>- Care delays&lt;br&gt;- Response to patient&lt;br&gt;- Decrease administrative time (and cost)</td>
</tr>
</tbody>
</table>

Physician RFA

- Request clear, concise<br>- Solid documentation<br>- MD understands MTUS

Patient frustration
- Care delays
- Seek alternatives to treatment
- Litigation

Carrier frustration
- Care delays
- Increased administrative time
- Increase UR expense

Roman Kownacki, MD, MPH
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Kaiser Permanente Northern California
E-mail: Roman.Kownacki@kp.org

DWC 21st Annual Educational Conference
Providing Optimal Medical Care: Perspectives on UR
Medical Requests for Authorization

- Treatment Philosophy – EBM
- Training in WC including MTUS
- Feedback
- Review documentation of denied requests
- Make it easy to approve by using the language of MTUS/Guidelines
- Demonstrate performance

How do you move?

Physician RFA

Creation of a Partnership

- Do you/they want to partner?
- Form a collaborative relationship
- Understand challenges
- Exchange data
- Regular communication
- Resolve problems constructively

How do you move here?

Carrier Response

Positive

Negative

Positive

Negative

Physician RFA
State Fund Utilization Review Program

Dr. Dinesh Govindarao
Chief Medical Officer

January 15, 2014

Topics

- State Fund UR Program
- Request for Authorization (RFA)
- How to Submit an RFA
- Returned RFA
- Tips For Submitting RFA
State Fund UR Program

• 1996 – Established a Medical Quality Assurance Program
• 2004 – Implemented the SCIF Utilization Review Program in compliance with regulatory requirements
  – 1st level review – Claims Pre-authorization based on Treatment Guidelines (EBM)
  – 2nd level review - State Fund contracted with physicians to perform utilization review
• In 2012, State Fund contracted with UROs to perform 2nd level utilization review

Request for Authorization (RFA)

• Request for Authorization – Written request for a specific course of proposed medical treatment  CCR 9792.6.1 (t)
  • DWC Form RFA
  • Completed and signed by the physician
  • Supported by medical report indicating MTUS or other evidence-based guidelines
How to Submit an RFA?

- Complete the DWC Form RFA
- Attach medical report substantiating the need for the requested treatment
- Fax to State Fund Regional Office
- Information available at the State Fund Web site:
  - “I am a Medical Provider” section
  - Request for Authorization section
  
  www.statefundca.com/provider/TreatmentAuthorization.asp
Returned RFA

- From a non-provider
- Blank form
- No or incomplete medical report
Tips For Submitting RFA

- Submit DWC Form RFA with all information
- Specify the recommended treatment
- Cite MTUS or other appropriate medical guidelines
- Attach medical report
- Fax (not mail) to State Fund Office
- Calling the adjuster/reviewer back

Correctly Submitted RFA
Collaboration

All stakeholders important to provide timely, appropriate & quality medical treatment

Physicians

Employers

Injured Employee

Claims Administrators