



# Utilization Review Process

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# Labor Code 4604.5

- **Medical treatment utilization schedule—  
Guidelines; rebuttable presumption on issue of  
extent and scope of medical treatment;  
limitations on chiropractic, occupational  
therapy, and physical therapy visits.**

# MTUS

- Upon adoption by the administrative director of a medical treatment utilization schedule pursuant to Section 5307.27, the recommended guidelines set forth in the schedule shall be presumptively correct on the issue of extent and scope of medical treatment. The presumption is rebuttable and may be controverted by a preponderance of the scientific medical evidence establishing that a variance from the guidelines reasonably is required to cure or relieve the injured worker from the effects of his or her injury. The presumption created is one affecting the burden of proof.

# Guidelines

- **The guidelines shall be designed to assist providers by offering an analytical framework for the evaluation and treatment of injured workers, and shall constitute care in accordance with Section 4600 for all injured workers diagnosed with industrial conditions.**

# SB228

- Notwithstanding the medical treatment utilization schedule or the guidelines set forth in the American College of Occupational and Environmental Medicine's Occupational Medicine Practice Guidelines, for injuries occurring on and after January 1, 2004, an employee shall be entitled to no more than 24 chiropractic, 24 occupational therapy, and 24 physical therapy visits per industrial injury.
- Paragraph (1) shall not apply when an employer authorizes, in writing, additional visits to a health care practitioner for physical medicine services

# SB228

- Paragraph (1) shall not apply to visits for postsurgical physical medicine and postsurgical rehabilitation services provided in compliance with a postsurgical treatment utilization schedule established by the administrative director pursuant to Section 5307.27.
- For all injuries not covered by the American College of Occupational and Environmental Medicine's Occupational Medicine Practice Guidelines or the official utilization schedule after adoption pursuant to Section 5307.27, authorized treatment shall be in accordance with other evidence-based medical treatment guidelines that are recognized generally by the national medical community and scientifically based.

# 4610 Utilization Review Process

- **Every employer shall establish a utilization review process in compliance with this section, either directly or through its insurer or an entity with which an employer or insurer contracts for these services.**

# 4610 Utilization Review Process

- Each utilization review process shall be governed by written policies and procedures. These policies and procedures shall ensure that decisions based on the medical necessity to cure and relieve of proposed medical treatment services are consistent with the schedule for medical treatment utilization adopted pursuant to Section 5307.27. Prior to adoption of the schedule, these policies and procedures shall be consistent with the recommended standards set forth in the American College of Occupational and Environmental Medicine Occupational Medical Practice Guidelines. These policies and procedures, and a description of the utilization process, shall be filed with the administrative director and shall be disclosed by the employer to employees, physicians, and the public upon request.



## 4610 Competence of physician reviewers

- **No person other than a licensed physician who is competent to evaluate the specific clinical issues involved in the medical treatment services, and where these services are within the scope of the physician's practice, requested by the physician may modify, delay, or deny requests for authorization of medical treatment for reasons of medical necessity to cure and relieve.**

# Utilization Review Time Frames

## 4610

- **Prospective or concurrent decisions shall be made in a timely fashion that is appropriate for the nature of the employee's condition, not to exceed five working days from the receipt of the information reasonably necessary to make the determination, but in no event more than 14 days from the date of the medical treatment recommendation by the physician. In cases where the review is retrospective, the decision shall be communicated to the individual who received services, or to the individual's designee, within 30 days of receipt of information that is reasonably necessary to make this determination.**

# Utilization Review Urgent Time Frame 4610

- **When the employee's condition is such that the employee faces an imminent and serious threat to his or her health, including, but not limited to, the potential loss of life, limb, or other major bodily function, or the normal timeframe for the decisionmaking process, as described in paragraph (1), would be detrimental to the employee's life or health or could jeopardize the employee's ability to regain maximum function, decisions to approve, modify, delay, or deny requests by physicians prior to, or concurrent with, the provision of medical treatment services to employees shall be made in a timely fashion that is appropriate for the nature of the employee's condition, but not to exceed 72 hours after the receipt of the information reasonably necessary to make the determination.**

# Utilization Review Dispute Resolution

- **disputes shall be resolved in accordance with Section 4062. If a request to perform spinal surgery is denied, disputes shall be resolved in accordance with subdivision (b) of Section 4062.**

# Utilization Review section 4062

- If either the employee or employer objects to a medical determination made by the treating physician concerning any medical issues not covered by Section 4060 or 4061 and not subject to Section 4610, the objecting party shall notify the other party in writing of the objection within 20 days of receipt of the report if the employee is represented by an attorney or within 30 days of receipt of the report if the employee is not represented by an attorney. Employer objections to the treating physician's recommendation for spinal surgery shall be subject to subdivision (b), and after denial of the physician's recommendation, in accordance with Section 4610. If the employee objects to a decision made pursuant to Section 4610 to modify, delay, or deny a treatment recommendation, the employee shall notify the employer of the objection in writing within **20 days** of receipt of that decision. These time limits may be extended for good cause or by mutual agreement.

# Utilization Review section 4062

- If the employee is represented by an attorney, a medical evaluation to determine the disputed medical issue shall be obtained as provided in Section 4062.2, and no other medical evaluation shall be obtained. If the employee is not represented by an attorney, the employer shall immediately provide the employee with a form prescribed by the medical director [ IMC Form 106 ] with which to request assignment of a panel of three qualified medical evaluators, the evaluation shall be obtained as provided in Section 4062.1, and no other medical evaluation shall be obtained.

# Utilization Review section 4062

- The employer may object to a report of the treating physician recommending that **spinal surgery** be performed within **10 days** of the receipt of the report. If the employee is represented by an attorney, the parties shall seek agreement with the other party on a California licensed board-certified or board-eligible orthopedic surgeon or neurosurgeon to prepare a second opinion report resolving the disputed surgical recommendation. If no agreement is reached within **10 days**, or if the employee is not represented by an attorney, an orthopedic surgeon or neurosurgeon shall be **randomly** selected by the administrative director to prepare a second opinion report resolving the disputed surgical recommendation. Examinations shall be scheduled on an expedited basis. The second opinion report shall be served on the parties within **45 days** of receipt of the treating physician's report. If the second opinion report recommends surgery, the employer shall authorize the surgery.

# What is “scope of practice?”

- **Scope of practice for a UR “reviewer” is determined by the scope of the medical professional license as defined under California law and includes the procedures, actions and processes permitted for the licensed physician.**



Does the physician reviewer have to hold the same license as the requesting physician?

- **No, as long as the reviewer's experience, scope of practice and clinical competence cover the treatment in question.**

Does the physician reviewer have to be in the same specialty as the requesting physician?

- **No, as long as the reviewer's experience, scope of practice and clinical competence cover the treatment in question.**

How Do we know if a physician reviewer is qualified to review an authorization request?

- **There is a two-part test for reviewer qualifications:**
- **1. “competent to evaluate the specific clinical issues involved in the medical treatment services” [LC 4610(e) and CCR, title 8 9792.7(b)(2).] For example, an orthopedic surgeon request authorization to perform carpal tunnel surgery. An occupational medicine specialist with the appropriate knowledge can review the request even though the physician may not be trained to do the procedure.**

**AND**

How Do we know if a physician reviewer is qualified to review an authorization request?

- **2. “These services are within the reviewers scope of practice ?” as defined by the particular physician’s California licensing board (CCR Title 8 [9792.7(b)(2)]**

**A reviewer who is competent to evaluate the specific clinical issues involved in the medical treatment services, and where these services are within the reviewer's scope of practice, may, except as indicated below, delay, modify or deny, requests for authorization of medical treatment for reasons of medical necessity to cure or relieve the effects of the industrial injury.**

# Why do we have the utilization review process?

- Utilization review is utilized by various companies in an effort to verify that the procedure requested complies with the treatment guidelines nationally recognized.
- This came about in an effort to contain over utilization of certain procedures.

# Cost Containment

- Utilization review may cut the cost of medical delivery on insurance companies by 10% to 40% from otherwise unmonitored care delivery.
- Bill review may equally save insurance companies upwards of 30% to 35% on an average bill.

# How does the process of Utilization Review work?

- The physician will submit a request for a procedure to be done on certain patient.
- The insurance adjuster will refer such a request to a utilization review company to review the request and certify it or non certify the request.
- On an injured worker, the process must be handled within 5 business days or 7 calendar days.

# How does the process of Utilization Review work?

- The physician reviewing the request will look at the guidelines for the procedure requested and verify that the findings in the records submitted comply with the guidelines for the specific request.
- This will involve reviewing the documentation that the requesting physician has provided and compare with the national or state mandated guidelines for the specific procedure.



# How does the process of Utilization Review work?

- The reviewer will then certify or non certify a specific request based on compliance with the guidelines.
- This will have a time frame for approval to perform the procedure within a certain period of time.
- The reviewer will also provide his reasoning and a copy of the appropriate guidelines he used to reach his decision.

# How does the process of Utilization Review work?

- The treating physician may then perform the procedure requested within the guidelines attached if certified.
- If the request is not certified, the treating physician may then request an appeal of the non certification. He may then, provide additional supportive documentation to certify the procedure.

# How does the process of Utilization Review work?

- The appeal of the denial should include objective medical findings to support the request.
- The treating physician may also request a peer to peer review of the case with the physician of like specialty. This process is not construed as adversarial but more of sharing information to arrive at a reasonable decision regarding care and treatment of the patient.

# Utilization Review Process

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cidmcorp.com https://thm.cidmcorp.com/Default.aspx AOL AOL Search

Managed Care Services

Review Administration My Pages

**Submitted Reviews**

Priority	Patient	Claim #	Organization	Project	State	Reviewing Org	Review Type	Discipline	Status	Start Date	Due Date	Review	
Rush			City of Santa Ana	Spec Rvw	CA		Utilization Review	Orthopaedic Surgery (Spine)	Clinical Peer Review	3/15/2012 11:16:19 AM PST	3/16/2012 5:30:00 PM PST	<a href="#">53726</a>	<a href="#">Clinical Wizard</a>

Prev Next

# Utilization Review Process

Review

Administration My Pages

Review

Review Determination

Documents

Document Summaries

Affiliated Reviews

Review Activities

Review Wizard

## Clinical Decision Wizard

Claim #:

Patient:

Review #:

### Patient Details

DOB: 2/17/19

Tustin, CA 92782

### Treatment Request

1 Posterior lumbar re-exploration of the L5-S1 transpedicular fixed instrumentation (Removal of pedicle screws) between 3/15/2012 and 5/14/2012.

### Requesting Physician Details

, M.D.

Anaheim, CA 92801

### Select the options that apply to you

- I want to summarize submitted documents
- Make UR Determination

Previous

Next

# Utilization Review Process



Review Administration My Pages

Review Review Determination Documents Document Summaries Affiliated Reviews Review Activities Review Wizard

## Treatment Request

Claim #:  Patient:  Review #:

### Patient Details:

The patient is a 29 year old female with a date of injury of 6/17/2010.

### Treatment Plan Requests:

1. 1 Posterior lumbar re-exploration of the L5-S1 transpedicular fixed instrumentation (Removal of pedicle screws) between 3/15/2012 and 5/14/2012

# Utilization Review Process

Review

Administration My Pages

Review

Review Determination

Documents

Document Summaries

Affiliated Reviews

Review Activities

Review Wiz

## UR Determination

Claim # :

Patient:

Review # :

### Patient Details:

The patient is a 29 year old female with a date of injury of 6/17/2010.

### Treatment Request:

1 Posterior lumbar re-exploration of the L5-S1 transpedicular fixed instrumentation (Removal of pedicle screws) between 3/15/2012 and 5/14/2012

### Determination:

- Recommend treatment plan be certified
- Recommend treatment plan be certified with modification
- Recommend treatment plan be non-certified
- Recommend treatment plan be conditionally non-certified

[Request more information](#)

### Principal Reason:

# Utilization Review Process

Review   Review Determination   Documents   Document Summaries   Affiliated Reviews   Review Activities   Review Wizard

## UR Determination

Claim #:  Patient:  Review #:

### Patient Details:

The patient is a 29 year old female with a date of injury of 6/17/2010.

### Treatment Request:

1 Posterior lumbar re-exploration of the L5-S1 transpedicular fixed instrumentation (Removal of pedicle screws) between 3/15/2012 and 5/14/2012

### Determination:

- Recommend treatment plan be certified
- Recommend treatment plan be certified with modification
- Recommend treatment plan be non-certified
- Recommend treatment plan be conditionally non-certified

### Portion of tx request you are certifying

Recommend certification of  Posterior lumbar re-exploration of the L5-S1 transpedicular fixed instrumentation between  and

### CPT Codes

Requested	Authorize	CPT Code	Modifier	Description	Cost
1	<input type="text" value="1"/>	22852		Removal Of Posterior Segmental Instrumentation'Rmv	\$1,132.20
1	<input type="text" value="0"/>	22842		Post Segmt Instrum; 3 To 6 Vert Segmts	\$2,570.40

### Savings

Original Estimated Cost of Tx Request (\$): 39102.60  
Savings Calculated from CPT Codes (\$): 2570.40  
Additional Non-CPT Savings You Wish to List (\$):  (maximum possible: \$36532.2)  
Total Savings (\$): 2570.40

[Recalculate Savings](#)



# Utilization Review Process

The screenshot shows a web browser window with the URL <http://www.odg-twc.com/odgtwclist.htm>. The page features a navigation menu with links for Search, Contents, Keyword Index, ICD-9 Index, Contact Us, and Help. The main heading is "Official Disability Guidelines" with a sub-link for "ODG: Good to Go!". The central content area is titled "ODG Treatment" and lists various medical conditions with their update dates. On the left and right sides, there are sidebars for "Top 15 Diagnoses Return-To-Work Guidelines" and "Top 15 Procedures Medical Treatment Guidelines" respectively.

Firefox Clinical Wizard ODG-TWC\_contents

http://www.odg-twc.com/odgtwclist.htm AOL Search

Search Contents Keyword Index ICD-9 Index Contact Us Help

*Official Disability Guidelines*  
*ODG: Good to Go!* (link to complimentary online self training tool)

**Top 15 Diagnoses Return-To-Work Guidelines**

1. [Back strains](#)
2. [Disc disorders](#)
3. [Whiplash](#)
4. [Shoulder sprains](#)
5. [Depression](#)
6. [Ankle sprains](#)
7. [Arthritis](#)
8. [Carpal tunnel syndrome](#)
9. [Hernia](#)
10. [Meniscus tears](#)
11. [Chronic pain](#)
12. [Bruises](#)
13. [Broken arm](#)
14. [Pregnancy](#)
15. [H1N1 Flu](#)

**Top 6 Chapters**

1. [Low back](#)
2. [Knee](#)

**ODG Treatment**

**Background & Description**

**Explanation of Medical Literature Ratings** (updated 08/09/11)

**Ankle & Foot** (updated 01/20/12)

**Burns** (updated 10/05/11)

**Carpal Tunnel Syndrome** (updated 11/14/11)

**Diabetes** (updated 02/14/12)

**Elbow** (updated 11/02/11)

**Eye** (updated 06/10/11)

**Fitness for Duty** (updated 05/12/10)

**Forearm, Wrist, & Hand** (updated 11/02/11)

**Head** (updated 02/16/12)

**Hernia** (updated 11/02/11)

**Top 15 Procedures Medical Treatment Guidelines**

1. [Discectomy](#)
2. [Physical therapy](#)
3. [Manipulation](#)
4. [Spinal fusion](#)
5. [Knee replacement](#)
6. [Hip replacement](#)
7. [Rotator cuff repair](#)
8. [Meniscectomy](#)
9. [Carpal tunnel release](#)
10. [Hernia repair](#)
11. [Medications](#)
12. [Injections](#)
13. [Opioids](#)
14. [PTSD](#)
15. [CRPS](#)

**Top 6 (cont'd)**

4. [Pain](#)
5. [Neck](#)

# Utilization Review Process

- 11. [Chronic pain](#)
- 12. [Bruises](#)
- 13. [Broken arm](#)
- 14. [Pregnancy](#)
- 15. [H1N1 Flu](#)

## Top 6 Chapters

- 1. [Low back](#)
- 2. [Knee](#)
- 3. [Shoulder](#)

## State Guidelines

- 1. [All states](#)
- 2. [Colorado](#)
- 3. [New York](#)

[Elbow](#) (updated 11/02/11)

[Eye](#) (updated 06/10/11)

[Fitness for Duty](#) (updated 05/12/10)

[Forearm, Wrist, & Hand](#) (updated 11/02/11)

[Head](#) (updated 02/16/12)

[Hernia](#) (updated 11/02/11)

[Hip & Pelvis](#) (updated 03/09/12)

[Knee & Leg](#) (updated 02/15/12)

[Low Back](#) (updated 02/20/12)

[Mental Illness & Stress](#) (updated 12/21/11)

[Neck & Upper Back](#) (updated 01/30/12)

[Pain](#) (updated 02/29/12)

[Pulmonary](#) (updated 02/24/12)

[Shoulder](#) (updated 02/14/12)

[Appendix A, ODG Workers' Compensation Drug Formulary](#) (updated 01/31/12)

[Appendix B, Methodology Description using the AGREE Instrument](#)

[Appendix C, Patient Information Resources](#)

[Appendix D, Documenting Exceptions to the Guidelines](#)

- 11. [Medications](#)
- 12. [Injections](#)
- 13. [Opioids](#)
- 14. [PTSD](#)
- 15. [CRPS](#)

## Top 6 (cont'd)

- 4. [Pain](#)
- 5. [Neck](#)
- 6. [Hand](#)

## UR Tools

- 1. [CPT Code UR Advisor](#)
- 2. [NDC Codes for Automated Approval](#)

# Utilization Review Process

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	<p>personal care where outcomes are not monitored by a health professional, such as gym membership, swimming pools, health clubs, etc., would not generally be considered medical treatment, and are therefore not covered under this guideline, although temporary transitional exercise programs may be appropriate for patients who are unable to return to their usual activities. Memberships, health clubs, swimming pools, athletic clubs, etc., would not generally be considered medical treatment, and are therefore not covered under this guideline. For more information on recommended treatments, see <a href="#">Physical therapy (PT)</a> &amp; <a href="#">Exercise</a>.</p>
Hardware	<p>See <a href="#">Fusion</a>. Much of the growth of spinal fusion has been driven by the sales of new types of minimally invasive surgical techniques using the least demanding surgical technique of posterolateral fusion without internal fixation. (Maghout-Jurati, 2006) There was no obvious disadvantage in posterolateral fusion compared with bone only fusions without improving disability or reoperation rates. (Maghout-Jurati, 2006)</p>
Hardware implant removal (fixation)	<p>Not recommend the routine removal of hardware implanted for fixation, except in the case of broken hardware or persistent pain, after ruling out other causes of pain such as infection and nonunion. Not recommended solely to protect against allergy, carcinogenesis, or metal detection. Although hardware removal is commonly done, it should not be considered a routine procedure. The decision to remove hardware has significant economic implications, including the costs of the procedure as well as possible work time lost for postoperative recovery, and implant removal may be challenging and lead to complications, such as neurovascular injury, refracture, or recurrence of deformity. The routine removal of orthopaedic fixation devices after healing remains an issue of debate, but implant removal in symptomatic patients is rated to be moderately effective. Many surgeons refuse a routine implant removal policy, and do not believe in clinically significant adverse effects of retained metal implants. For more information and references, see the <a href="#">Ankle Chapter</a>.</p>
Hardware injection (block)	<p>Recommended only for diagnostic evaluation of failed back surgery syndrome. This injection procedure is performed on patients who have undergone a fusion with hardware to determine if continued pain is caused by the hardware. If the steroid/anesthetic medication can eliminate the pain by reducing the swelling and inflammation near the hardware, the surgeon may decide to remove the patient's hardware. (Guyer, 2006)</p>
Heat therapy	<p>Recommended as an option. A number of studies show continuous low-level heat wrap therapy to be effective for treating low back pain. (Nadler-Spina, 2002) (Nadler, 2003) (Lurie-Luke, 2003) (Berliner, 2004) (Lloyd, 2004) One study compared the effectiveness of the Johnson &amp; Johnson Back Plaster, the ABC Warme-Pflaster, and the Procter &amp; Gamble ThermoCare HeatWrap, and concluded that the ThermoCare HeatWrap is more effective than the other two. (Trowbridge, 2004) Active warming reduces acute low back pain during rescue transport. (Nuhr-Spina, 2004) Combining continuous low-level heat wrap therapy with exercise during the treatment of acute low back pain significantly improves functional outcomes compared with either intervention alone or control. (Mayer-Spina, 2005) There is moderate evidence that heat wrap therapy provides a small short-term reduction in pain and disability in acute and sub-acute low-back pain, and that the addition of exercise further reduces pain and improves function. (French-Cochrane, 2006) Heat therapy has been found to be helpful for pain reduction and return to normal function. (Kinkade, 2007)</p>
Hemilaminectomy	<p>See <a href="#">Discectomy/laminectomy</a>.</p>
Herbal medicines	<p>Recommended as indicated below. Short-term treatments with certain herbal medicines (including Devil's claw and willow bark) are effective for relief of acute low back pain, according to the results of a Cochrane review reported in the January 2007 issue of <i>Spine</i>. A variety of herbal medicines have been used for nonspecific low back pain, but quality evidence is available for only 3 categories: oral <i>Harpagophytum procumbens</i> (Devil's claw), oral <i>Salix alba</i> (White willow bark), and topical <i>Capsicum frutescens</i> (Cayenne). There is moderate evidence that 50 to 100 mg of harpagoside (<i>H. procumbens</i>) and 120 to 240 mg of salicin (<i>S. alba</i>) are useful in the treatment of acute nonspecific low back pain in the short term and limited evidence for efficacy of topical <i>C. frutescens</i>. With herbal medications there are potential concerns for quality of preparations. (Gagnier, 2007) Herbal therapies, such as devil's claw, willow bark, and capsaicin, seem to be safe options for acute exacerbations of chronic low back pain, but benefits range from small to moderate. In addition, many of the published trials were led by the same investigator, which could limit applicability of findings to other settings. (Chou, 2007) Topical treatment with comfrey root extract can markedly reduce acute upper and lower back pain, according a recent RCT. Comfrey, a medicinal herb, has long been used to treat painful joint and muscular conditions, and the root of the plant, in particular, has shown promise in reducing pain. In this study researchers used a visual analogue scale to assess back pain in 120 patients who were randomized to apply 4 g of comfrey root extract ointment or placebo ointment three times daily for 5 days. Between the first and fourth (final) follow-up assessment, pain intensity dropped by 95% in the comfrey root extract group, while a drop of 39% was seen in the placebo group. Moreover, the pain relief seen with the extract usually began in under an hour. (Giannetti, 2009) Note: Comfrey contains pyrrolizidine alkaloids, which are hepatotoxic. (Cao, 2008) See also the <a href="#">Pain Chapter</a>.</p>
Home health services	<p>Recommended only for otherwise recommended medical treatment for patients who are homebound, on a part-time or "intermittent" basis. Medical treatment does not include homemaker services like shopping, cleaning, and laundry, and personal care given by home health aides like bathing, dressing, and using the bathroom when this is the only care needed. These recommendations are consistent with Medicare Guidelines. (CMS, 2004)</p>
Hospitalization	<p>Not recommended for low back pain in the absence of major trauma (i.e., acute spinal fracture, spinal cord injury, or nerve root injury), acute or progressive neurologic deficit, or the</p>

# Utilization Review Process

Savings Calculated from CPT Codes (\$): 2570.40  
Additional Non-CPT Savings You Wish to List (\$):  (maximum possible: \$36532.2)  
Total Savings (\$): 2570.40  
[Recalculate Savings](#)

[Request more information](#)

## Principal Reason:

Certify with modification 1 to allow Posterior lumbar Removal of pedicle screw between 3/15/2012 and 5/14/2012, This is consistent with the pain generator noted on the records of the PTP. Also consistent with the guidelines attached.

PASTE  
INTO THIS  
BOX

**Applied Guidelines:** [ACOEM](#) [ODG](#)

This claim is CA based. Therefore, please include one reference beyond ACOEM. Because the date of injury is more than 3 months ago, please include one reference beyond

Hardware implant removal (fixation)

Not recommend the routine removal of hardware implanted for fixation, except in the case of broken hardware or persistent pain, after ruling out other causes of pain such as infection and nonunion. Not recommended solely to protect against allergy, carcinogenesis, or metal detection. Although hardware removal is commonly done, it should not be considered a routine procedure. The decision to remove hardware has significant economic implications, including the costs of the procedure as well as possible work time lost for postoperative recovery, and implant removal may be challenging and lead to complications, such as neurovascular injury, refracture, or recurrence of deformity. The routine removal of orthopaedic fixation devices after healing remains an issue of debate, but implant removal in symptomatic patients is rated to be moderately effective. Many surgeons refuse a routine implant removal policy, and do not believe in clinically significant adverse effects of retained metal implants. For more information and references, see the Ankle Chapter.

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**THE END**