



## Clinical Policy: Intradiscal Electrothermal Therapy; Percutaneous Intradiscal Radiofrequency Thermocoagulation

Reference Number: HNCA.CP.MP.48

Effective Date: 10/03

Last Review Date: 8/19

[Coding Implications](#)  
[Revision Log](#)

See [Important Reminder](#) at the end of this policy for important regulatory and legal information.

### Description

Multiple treatment options for subacute and chronic low back pain are currently available. Several minimally invasive catheter-based techniques have been investigated to treat chronic discogenic low back pain, including intradiscal electrothermal therapy (IDET), also referred to as intradiscal electrothermal annuloplasty (IEA), percutaneous intradiscal radiofrequency thermocoagulation (PIRFT), also known as percutaneous radiofrequency thermomodulation, and intervertebral disc biacuplasty (e.g. TransDiscal System).

### Policy/Criteria

- I. It is the policy of Health Net of California that intradiscal electrothermal therapy, percutaneous intradiscal radiofrequency thermocoagulation, and intervertebral disc biacuplasty are considered **investigational** for the treatment of back pain. These treatments continue to be evaluated in clinical studies, however, current peer review literature is inconclusive at this time.

### Background

Subacute low back pain is commonly defined as back pain lasting between 4 and 12 weeks and chronic low back pain as pain that persists for 12 or more weeks. Multiple treatment options for subacute and chronic low back pain are currently available. Electrothermal therapies and radiofrequency thermocoagulation have been proposed as minimally invasive treatment of back pain in individuals who have failed to respond to conservative treatment.

#### *Intradiscal electrothermal therapy*

Intradiscal electrothermal therapy (IDET), also known as intradiscal electrothermal annuloplasty, is a technique designed to thermocoagulate and destroy nerves in the intravertebral disc of individuals presumed to have discogenic low back pain. A catheter or electrode, placed into the intervertebral disc, is slowly heated and kept at a predetermined temperature for a predetermined time to coagulate and shrink adjacent tissues. Randomized placebo-controlled trials have been conducted on IDET in patients with chronic back pain and positive responses to provocative discography. One such trial (Pauza et al) reported patients randomized to IDET experienced moderate improvements in pain scores compared with sham IDET, but experienced no improvements in functional status. Another trial, reported the IDET procedure appeared to be safe, but noted no significant benefit from IDET over placebo were demonstrated (Freeman et al). A small study of 50 patients with lumbar discogenic pain who underwent IDET treatment, reported at 24 months, there was an average 68 and 66% improvement in back pain and function, respectively, between pretreatment and 24 months after treatment.



## CLINICAL POLICY

### **IDET, Percutaneous Intradiscal Radiofrequency Thermocoagulation**

#### *Percutaneous intradiscal radiofrequency thermocoagulation*

Percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) is similar to IDET, but heat is generated in surrounding tissues by an alternating radiofrequency current. There is minimal published data on PIRFT. One small study of 28 individuals with chronic low back pain showed that PIRFT was not effective in reducing chronic discogenic low back pain. Patients were assigned to two treatment groups, one with radiofrequency current and one without.

Improvement after eight weeks was noted in two patients in the control group and only one patient treated with PIRFT (Barendse et al). Another small RCT of 20 individuals with chronic low back pain and a positive provocation discography were randomized to either intra-annular PIRFT or intra-annular sham treatment. After 12 months the overall reduction from baseline pain had reached statistical significance, but there was no significant difference between the groups (Kvarstein et al.) A systematic review assessing the benefits and harms of nonsurgical interventional therapies for low back and radicular pain reported good or fair evidence that percutaneous intradiscal radiofrequency thermocoagulation is not effective. Insufficient evidence exists to reliably evaluate other interventional therapies. The review concluded that few surgical interventional therapies for low back pain have been shown to be effective in randomized, placebo-controlled trials. (Chou et al)

#### *Intervertebral disc biacuplasty*

Intervertebral disc biacuplasty (e.g. TransDiscal System) using a bipolar approach in conjunction with internally water-cooled radiofrequency (RF) probes to coagulate while decompressing disc material has been proposed to treat individuals suffering from chronic discogenic back pain originating from annular fissures or contained disc herniations who have attempted pain relief with medications and injections without adequate attenuation of pain. During biacuplasty, two TransDiscal Introducers are placed within the disc in a bilateral approach. A TransDiscal Probe is inserted through each introducer, placing them into contralateral sides of the posterior intervertebral disc. Once in place, RF energy is delivered between the two electrodes in the disc, heating the area between and immediately around the electrodes. RF energy heats the tissue and the internally circulating water cools the tissue in close proximity to the electrodes. This combination creates an ideal heating profile across the posterior disc without excessive heating, lesioning the disc's nociceptors in a controlled fashion.

Peer review literature evaluating intradiscal biacuplasty is limited. Randomized controlled trials have reported short-term positive effects of intradiscal biacuplasty versus conventional medical management or sham treatment. However, these studies have only reported results up to 12 months and the studies have had limited number of participants. In addition, a highly selected subset of patients have been evaluated (e.g. 64 from a potential cohort of 1,894 subjects).

In an updated evidence-based guideline for interventional techniques in chronic spinal pain, Manchikanti et al (2013) reported for intradiscal procedures of the lumbar spine, the evidence for intradiscal electrothermal therapy (IDET) and biacuplasty is limited to fair.

#### *Guideline Recommendations*



## CLINICAL POLICY

### IDET, Percutaneous Intradiscal Radiofrequency Thermocoagulation

The National Institute of Health and Care Evidence (NICE) states the current evidence on percutaneous electrothermal treatment of the intervertebral disc annulus for low back pain and sciatica raises no major safety concerns. The evidence on efficacy is inconsistent and of poor quality. Therefore, this procedure should only be used with special arrangements for clinical governance, consent and audit or research.

Guidelines from the American Pain Society (APS) in 2013 state that there is “good or fair” evidence from randomized trials that PIRFT thermocoagulation is not effective and found insufficient (poor) evidence from randomized trials to reliably evaluate other interventional therapies, which include IDET. Issues with the studies include conflicting conclusions, lack of quality data and no randomization.

The California Technology Assessment Forum technology review of IDET in 2014 concluded that the procedure with the Radionics RF System did not meet the CTAF technology assessment criteria.

The American Society of Interventional Pain Physicians (ASIPP) updated evidence-based practice guideline in 2013, stating that the evidence for IDET and biacuplasty for management of chronic spinal pain for thermal annular procedures is limited for discTRODE and also may be effective for a select group of patients with discogenic pain nonresponsive to conservative modalities including epidural injections.

### Coding Implications

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2015, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only.

CPT® Codes	Description
22526	Percutaneous intradiscal electrothermal annuloplasty, unilateral or bilateral including fluoroscopic guidance; single level
22527	Percutaneous intradiscal electrothermal annuloplasty, unilateral or bilateral including fluoroscopic guidance: one or more additional levels

HCPCS Codes	Description

### ICD-10-CM Diagnosis Codes that Support Coverage Criteria

ICD-10-CM Code	Description
M46.46	Discitis, unspecified, lumbar region



**CLINICAL POLICY**

**IDET, Percutaneous Intradiscal Radiofrequency Thermocoagulation**

ICD-10-CM Code	Description
M51.06	Intervertebral disc disorders with myelopathy, lumbar region
M51.07	Intervertebral disc disorders with myelopathy, lumbosacral region
M51.26	Other intervertebral disc displacement, lumbar region
M51.27	Other intervertebral disc displacement, lumbosacral region
M51.86	Other intervertebral disc disorders, lumbar region
M51.87	Other intervertebral disc disorders, lumbosacral region
M51.9	Unspecified thoracic, thoracolumbar and lumbosacral intervertebral disc disorder
M51.34-M51.37	Other intervertebral disc degeneration, lumbar region
M54.5	Low back Pain

Reviews, Revisions, and Approvals	Date	Approval Date
Policy adopted from Health Net NMP 48 Intradiscal Electrothermal Therapy (IDET); Percutaneous Intradiscal Radiofrequency Thermocoagulation	8/16	
Updated references and added statements from CTAF and ASIPP. No change in position	8/17	
Updated references. No change in position	8/18	
Update, revised codes, no change in position	8/19	

**References**

1. Assietti R, Morosi M, Migliaccio G, et al. Treatment of discogenic low back pain with Intradiscal Electrothermal Therapy (IDET): 24 months follow-up in 50 consecutive patients. *Acta Neurochir Suppl.* 2011;108:103-5
2. Barendse GA, van Den Berg SG, Kessels AH, et al. Randomized controlled trial of percutaneous intradiscal radiofrequency thermocoagulation for chronic discogenic back pain: lack of effect from a 90-second 70 C lesion. *Spine.* 2001 Feb 1;26(3):287-92.
3. Chou R, Atlas SJ, Stanos SP, Rosenquist RW. Nonsurgical interventional therapies for low back pain: a review of the evidence for an American Pain Society clinical practice guideline. *Spine (Phila Pa 1976).* 2009; 34(10):1078-1093.
4. Chou R, Atlas SJ, Stanos SP, Rosenquist RW. Nonsurgical interventional therapies for low back pain: a review of the evidence for an American Pain Society clinical practice guideline. *Spine (Phila Pa 1976).* 2009; 34(10):1078-1093.
5. Chou R. Subacute and chronic low back pain: Nonsurgical interventional treatment. Alas SJ, Crowley M. (Eds.) *UpToDate.* May 2016. Accessed Aug 2016
6. Desai MJ, Kapural L, Petersohn JD, et al. A Prospective, Randomized, Multicenter, Open-label Clinical Trial Comparing Intradiscal Biacuplasty to Conventional Medical Management for Discogenic Lumbar Back Pain. *Spine (Phila Pa 1976).* 2016 Jul 1;41(13):1065-74
7. Freeman BJ, Fraser RD, Cain CM, et al. A randomized, double-blind, controlled trial: intradiscal electrothermal therapy versus placebo for the treatment of chronic discogenic low back pain. *Spine (Phila Pa 1976)* 2005; 30:2369.



## CLINICAL POLICY

### IDET, Percutaneous Intradiscal Radiofrequency Thermocoagulation

8. Kapural L, Vrooman B, Sarwar S, et al. Radiofrequency intradiscal biacuplasty for treatment of discogenic lower back pain: a 12-month follow-up. *Pain Med.* 2015 Mar;16(3):425-31.
9. Karaman H, Tüfek A, Kavak GÖ, et al. 6-month results of TransDiscal Biacuplasty on patients with discogenic low back pain: preliminary findings. *Int J Med Sci.* 2010 Dec 14;8(1):1-8.
10. Kvarstein G, Måwe L, Indahl A, et al. A randomized double-blind controlled trial of intra-annular radiofrequency thermal disc therapy--a 12-month follow-up. *Pain* 2009; 145:279.
11. Manchikanti L, Abdi S, Atluri S, et al. An update of comprehensive evidence-based guidelines for interventional techniques in chronic spinal pain. Part II: guidance and recommendations. *Pain Physician.* 2013 Apr;16(2 Suppl):S49-283.
12. Manchikanti L, Boswell MV, Singh V, et al. The American Society of Interventional Pain Physicians-Interventional Pain Management (ASIPP-IPM). Comprehensive evidence-based guidelines for interventional techniques in the management of chronic spinal pain. *Pain Physician.* 2009; 12(4):699-802.
13. National Institute of Health and Care Evidence (NICE) Percutaneous electrothermal treatment of the intervertebral disc annulus for low back pain and sciatica. Jan 2016. Available at: <https://www.nice.org.uk/guidance/ipg544>
14. Pauza KJ, Howell S, Dreyfuss P, et al. A randomized, placebo-controlled trial of intradiscal electrothermal therapy for the treatment of discogenic low back pain. *Spine J.* 2004 Jan-Feb;4(1):27-35
15. Zhang L, Ding XL, Zhao XL, et al. Fluoroscopy-guided bipolar radiofrequency thermocoagulation treatment for discogenic low back pain. *Chin Med J (Engl).* 2016; 129(19):2313-2318

### **Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. “Health Plan” means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan’s affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to



## CLINICAL POLICY

### IDET, Percutaneous Intradiscal Radiofrequency Thermocoagulation

applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members. This clinical policy is not intended to recommend treatment for members. Members should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.

This clinical policy is the property of the Health Plan. Unauthorized copying, use, and distribution of this clinical policy or any information contained herein are strictly prohibited. Providers, members and their representatives are bound to the terms and conditions expressed herein through the terms of their contracts. Where no such contract exists, providers, members and their representatives agree to be bound by such terms and conditions by providing services to members and/or submitting claims for payment for such services.

**Note: For Medicaid members,** when state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

**Note: For Medicare members,** to ensure consistency with the Medicare National Coverage Determinations (NCD) and Local Coverage Determinations (LCD), all applicable NCDs and LCDs should be reviewed prior to applying the criteria set forth in this clinical policy. Refer to the CMS website at <http://www.cms.gov> for additional information.

©2016 Centene Corporation. All rights reserved. All materials are exclusively owned by Centene Corporation and are protected by United States copyright law and international copyright law. No part of this publication may be reproduced, copied, modified, distributed, displayed, stored in a retrieval system, transmitted in any form or by any means, or otherwise published without the prior written permission of Centene Corporation. You may not alter or remove any trademark, copyright or other notice contained herein. Centene® and Centene Corporation® are registered trademarks exclusively owned by Centene Corporation.