

1 **Clinical Practice Guideline: Rigid Total Contact Leg Cast**

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3 **Date of Implementation: June 18, 2015**

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5 **Product: Specialty**

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8 **GUIDELINES**

9 American Specialty Health – Specialty (ASH) considers the use of total contact cast (CPT
10 Code 29445) may be medically necessary for the following:

- 11 • **Complication of diabetes, as indicated by 1 or more of the following:**
 - 12 ○ Charcot foot (includes diabetes mellitus with neuropathic arthropathy)
 - 13 (A52.16, E08.610, E09.610, E10.610, E11.610, E13.610, M14.671 -
 - 14 M14.679, M14.69)
 - 15 ○ Plantar diabetic foot ulcer (includes atherosclerosis of native arteries and
 - 16 bypass graft of the leg with ulceration of heel and midfoot) (I70.234,
 - 17 I70.244, I70.334, I70.344, I70.434, I70.444, I70.534, I70.544, I70.634,
 - 18 I70.644, I70.734, I70.744, L97.401 - L97.429) that has not responded to
 - 19 medical management (e.g., dressings, debridement, antibiotics)
 - 20

21 Total contact casting is contraindicated for the following cases:

- 22 • Ischemic conditions of the lower leg and foot (e.g., uncontrolled peripheral vascular
- 23 disease)
- 24 • Active infection or osteomyelitis
- 25 • Wounds that have not been properly debrided
- 26

27 **CPT® Code and Description**

CPT® Code	CPT® Code Description
29445	Application of rigid total contact leg cast

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29 **DESCRIPTION/BACKGROUND**

30 Foot disorders are a major source of morbidity and a leading cause of hospitalization for
31 persons with diabetes. Ulceration, infection, and Charcot foot are among the serious
32 complications of long-standing diabetes. Diabetic foot ulcers may be classified as
33 neuropathic, ischemic, or neuroischemic. Sensory neuropathy is the most frequent
34 component in the causal sequence to ulceration in patients with diabetes. Charcot foot, or
35 diabetic neuroarthropathy, is a neurologically mediated complication of diabetes, with the
36 development modified by musculoskeletal stress, resulting in osseous fragmentation and
37 joint subluxation with often significant morphologic changes in the architecture of the foot.
38 Complications include ulceration under areas of bony prominence and potential amputation
39 often related to infection/osteomyelitis that develops adjacent to the area of ulceration. The

1 ensuing treatment should be directed by the underlying severity of the pathology. The
2 combination of foot deformity, loss of protective sensation, and inadequate off-loading
3 leads to tissue damage and ulceration in the diabetic foot. Standard management of diabetic
4 neuropathic foot ulceration is prevention of infection, aggressive debridement with
5 removal of callus and dead tissue, application of medications or dressings to the ulcer,
6 followed by application of some form of off-loading device to offload the ulcer area with
7 concomitant management of blood glucose levels and other health problems, as
8 recommended by the American Podiatric Medical Association. Most ulcers will heal if
9 pressure is removed from the ulcer site, if the arterial circulation is sufficient and if
10 infection is managed and treated aggressively (Boulton, 2010).

11
12 In Charcot foot, loss of pain and protective sensation render the foot susceptible to repeated
13 injury. The mainstay of management is immediate off-loading, while surgery is usually
14 reserved for chronic cases with irreversible deformities and/or joint instability.

15
16 Total contact casts (TCC) and removable walkers have been shown to be extremely
17 effective in off-loading the diabetic foot, with reported peak pressure reduction in the
18 forefoot of up to 87 percent compared with a control condition. This result may be
19 achieved, among other mechanisms, by limiting ankle motion and redistributing load to the
20 device itself. For these reasons, devices that extend only to the ankle, such as cast shoes
21 and forefoot offloading shoes, may be less effective in off-loading the foot than devices
22 that extend above the ankle (i.e., TCC and walkers). As there are no current means available
23 to completely diminish the effects of neuropathy, the present tenet for treating and
24 preventing deformity is based on the redistribution of pressure.

25
26 The use of a plaster cast to treat neuropathic foot deformities has come to be known as total
27 contact casting because it employs a well-molded, minimally padded cast that maintains
28 contact with the entire plantar surface of the foot and lower leg. The cast material closely
29 fits the foot's plantar surface, increasing weight-bearing area and distributing pressure
30 more evenly across the foot. The TCC cannot be removed. TCCs are regarded by many
31 diabetic foot specialists as a preferred offloading method.

32
33 Much of the available evidence on the use of offloading for ulcer treatment is related to the
34 treatment of non-complicated plantar neuropathic foot ulcers. Evidence is scarce on
35 complicated and non-plantar foot ulcers. The treatment of ischemic and/or infected
36 neuropathic ulcers is more difficult than with purely neuropathic ulcers, for which good
37 offloading and debridement often suffice. One study showed that, whereas neuropathic
38 ulcers and mildly infected/ischemic ulcers can be treated effectively with casting (69–90%
39 healing rates), treatment outcome for plantar ulcers that are infected and ischemic is poor
40 (only 36% healing rate). Additional procedures such as antibiotic therapy or
41 revascularization interventions are required to achieve proper healing for these complicated
42 ulcers (Bus, 2012).

1 Diabetes-related lower extremity amputations are typically preceded by a foot ulcer. The
2 patient demographics related to diabetic foot ulceration are typical for patients with long-
3 standing diabetes. Risk factors for ulceration include neuropathy, peripheral arterial
4 disease, foot deformity, limited ankle range of motion, high plantar foot pressures, minor
5 trauma, previous ulceration or amputation, and visual impairment. Once an ulcer has
6 developed, infection and peripheral arterial disease are the major factors contributing to
7 subsequent amputation. The Society for Vascular Surgery, American Podiatric Medical
8 Association, and Society for Vascular Medicine recommend custom therapeutic footwear
9 for high-risk diabetes patients with significant neuropathy, foot deformities, or previous
10 amputations. In patients with plantar diabetic foot ulcer, off-loading with a total contact
11 cast or irremovable fixed ankle walking boot is recommended (Hingorani et al., 2016).

12
13 Severe foot ischemia, a deep abscess, osteomyelitis, and poor skin quality are absolute
14 contraindications to the use of a non-removable total contact cast (Alexiadou et al., 2012).

15 16 **PRACTITIONER SCOPE AND TRAINING**

17 Practitioners should practice only in the areas in which they are competent based on their
18 education, training, and experience. Levels of education, experience, and proficiency may
19 vary among individual practitioners. It is ethically and legally incumbent on a practitioner
20 to determine where they have the knowledge and skills necessary to perform such services
21 and whether the services are within their scope of practice.

22
23 It is best practice for the practitioner to appropriately render services to a member only if
24 they are trained, equally skilled, and adequately competent to deliver a service compared
25 to others trained to perform the same procedure. If the service would be most competently
26 delivered by another health care practitioner who has more skill and training, it would be
27 best practice to refer the member to the more expert practitioner.

28
29 Best practice can be defined as a clinical, scientific, or professional technique, method, or
30 process that is typically evidence-based and consensus driven and is recognized by a
31 majority of professionals in a particular field as more effective at delivering a particular
32 outcome than any other practice (Joint Commission International Accreditation Standards
33 for Hospitals, 2020).

34
35 Depending on the practitioner's scope of practice, training, and experience, a member's
36 condition and/or symptoms during examination or the course of treatment may indicate the
37 need for referral to another practitioner or even emergency care. In such cases it is prudent
38 for the practitioner to refer the member for appropriate co-management (e.g., to their
39 primary care physician) or if immediate emergency care is warranted, to contact 911 as
40 appropriate. See the *Managing Medical Emergencies (CPG 159 – S)* clinical practice
41 guideline for information.

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