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

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

Product: **Specialty**

GUIDELINES

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

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

Total contact casting is contraindicated for the following cases:

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

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

BACKGROUND

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

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

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

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

The use of a plaster cast to treat neuropathic foot deformities has come to be known as total contact casting because it employs a well-molded, minimally padded cast that maintains contact with the entire plantar surface of the foot and the lower leg. The close fit of the cast material to the plantar surface of the foot increases the plantar weight-bearing surface area to help distribute the pressure from one or two distinct areas to the plantar foot. The TCC is not removable. TCC are considered by most diabetic foot specialists to be the gold standard offloading modality.

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

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

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

PRACTITIONER SCOPE AND TRAINING

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

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

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

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

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