Foot Care and the Diabetic Patient

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Foot & Ankle Institute

Baton Rouge, Louisiana

Prevention!!!

Risk Assessment

Diabetes Foot Screen

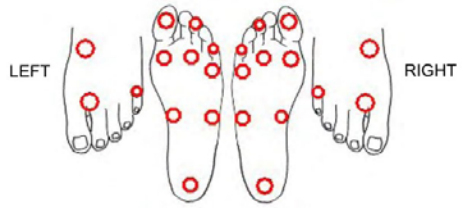
Name (Last, First, MI) _____ Date: ____/____/____

Fill in the following blanks with a "Y" or "N" to indicate findings in the right or left foot.

	R	L
Is there a history of a foot ulcer?		
Is there a foot ulcer now?		
Is there a claw toe deformity?		
Is there swelling or an abnormal foot shape?		
Is there elevated skin temperature?		
Is there limited ankle dorsiflexion		
Are the toenails long, thick or ingrown?		
Is there heavy callous build-up?		
Is there foot or ankle muscle weakness?		
Is there an absent pedal pulse?		
Can the patient see the bottom of their feet?		
Are the shoes appropriate in style and fit?		

Note the level of sensation in the circles:

+ = Can feel the 5.07 filament — = Can't feel the 5.07 filament



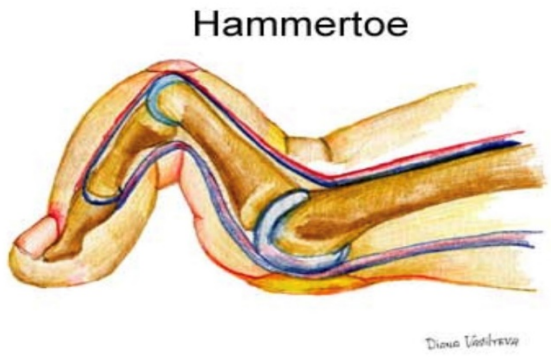
Skin Conditions on the Foot or Between the Toes:

Draw in: Callous ▤, Pre-ulcer ▦, Ulcer ■ (note length and width in cm)
Label with: **R** - redness, **M** - maceration, **D** - dryness, **T** - Tinea

RISK CATEGORY:
____ 0 No loss of protective sensation.
____ 1 Loss of protective sensation
____ 2 Loss of protective sensation with either high pressure (callous/deformity), or poor circulation.
____ 3 History of plantar ulceration, neuropathic fracture (Charcot foot) or amputation.

https://www.hrsa.gov/sites/default/files/hansensdisease/pdfs/leaplevel1.pdf

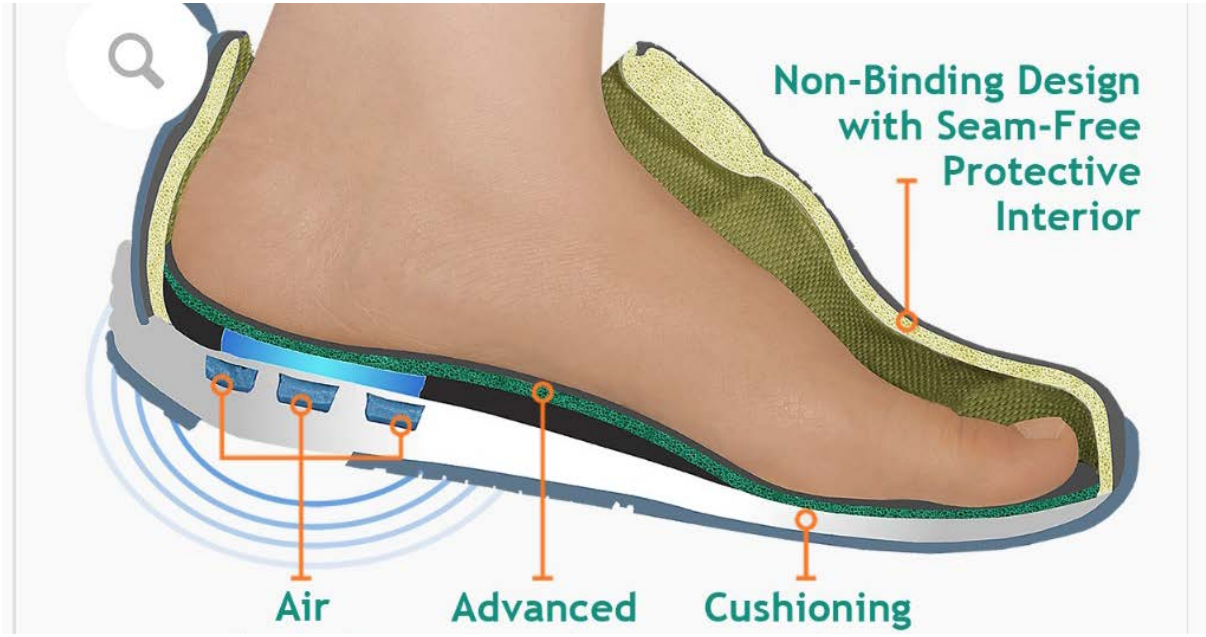

Daniel Day / Getty Images



https://www.totallyfeet.net/foot-facts/foot-dermatology/painful-toe-corn/

Diabetic Foot Assessment

- Accommodative Shoegear – depth-inlay shoegear
- Orthotic Insoles – offloading pressure points
- Padding – pressure reduction
- Stretching – improve range of motion
- Shoe Gear Modification - evaluation
- Surgical Intervention – to reduce digital deformities


Non-Binding Design
with Seam-Free
Protective
Interior
Air
Advanced
Cushioning

Toe & Forefoot Amputations

https://www.drriar.com/orthotics/

The Wagner Diabetic Foot Ulcer Grade Classification System

The Wagner diabetic foot ulcer classification system assesses ulcer depth and the presence of osteomyelitis or gangrene by using the following grades:

- Grade 0 – intact Skin
- Grade 1 – superficial ulcer of skin or subcutaneous tissue
- Grade 2 – ulcers extend into tendon, bone, or capsule
- Grade 3 – deep ulcer with osteomyelitis, or abscess
- Grade 4 – partial foot gangrene
- Grade 5 – whole foot gangrene

Note: While the wound shown in the above image may appear to be a grade 3 ulcer, upon assessment no abscess or osteomyelitis was found. Beneath the superficial necrotic tissue was exposed tendon.

The University of Texas Diabetic Foot Ulcer Classification System

The University of Texas system grades diabetic foot ulcers by depth and then stages them by the presence or absence of infection and ischemia:

- Grade 0 – pre-or postulcerative site that has healed
- Grade 1 – superficial wound not involving tendon, capsule, or bone
- Grade 2 – wound penetrating to tendon or capsule
- Grade 3 – wound penetrating bone or joint

Within each wound grade there are four stages:

- Stage A – clean wounds
- Stage B – non-ischemic infected wounds
- Stage C – ischemic noninfected wounds
- Stage D – ischemic infected wounds

A comparison of two diabetic foot ulcer classification systems: the Wagner and the University of Texas wound classification systems

S O Oyibo et al. Diabetes Care. 2001 Jan.

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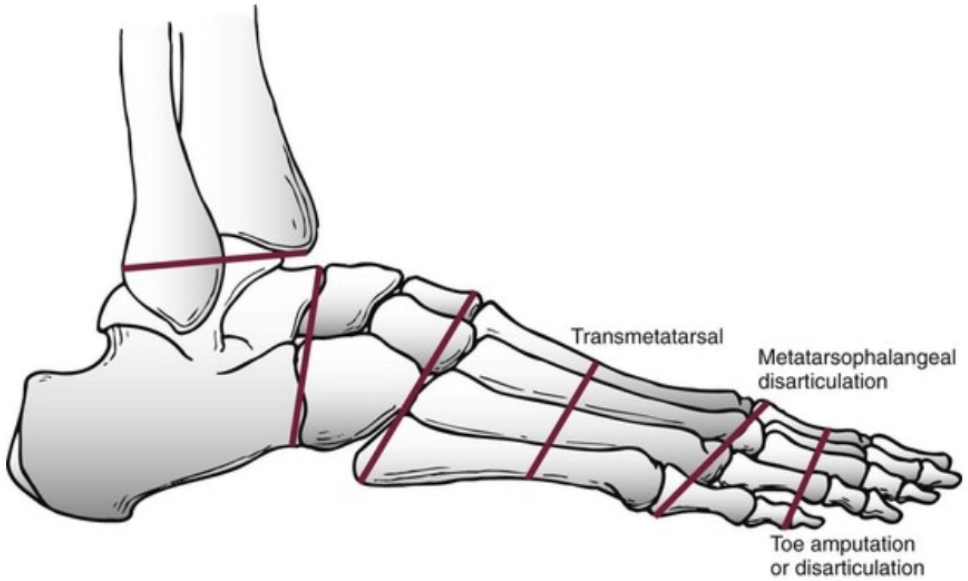
Abstract

Objective: In this study the following two ulcer classification systems were applied to new foot ulcers to compare them as predictors of outcome: the Wagner (grade) and the University of Texas (LT) (grade and stage) wound classification systems.

Research design and methods: Ulcer size, appearance, clinical evidence of infection, ischemia, and neuropathy at presentation were recorded, and patients were followed up until healing or for 6 months.



Conclusions: Increasing stage, regardless of grade, is associated with increased risk of amputation and prolonged ulcer healing time. The UT systems' inclusion of stage makes it a better predictor of outcome.

http://www.healthcaretip.com/2017/05/Transmetatarsal-amputation-Pictures-Rehabilitation-Recovery-Prosthesis.html

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International Journal of Diabetology & Vascular Disease Research (IJDVR) » IJDVR-2328-353X-04-501

The Risk of Subsequent Amputation Following An Initial Lower Extremity Amputation: A Systematic Review

Wong CK[1*], Stern JR[2], Rick F D'Andrea Jr[3], Loven SL[3], Panjaki S[4], See AS[3], Spindler SJ[3], Yerovinkina M[3], Nowygrod R[2]

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Comparative Study

Fate of the contralateral limb after lower extremity amputation

Julia D Glaser et al. J Vasc Surg. 2013 Dec.

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Abstract

Objective: Lower extremity amputation is often performed in patients where both lower extremities are at risk due to peripheral arterial disease or diabetes, yet the proportion of patients who progress to amputation of their contralateral limb is not well defined. We sought to determine the rate of subsequent amputation on both the ipsilateral and contralateral lower extremities following initial amputation.

Risk of reamputation in diabetic patients stratified by limb and level of amputation: a 10-year observation.

Diabetes Care. 2006; 29(3):566-70 (ISSN: 0149-5992)

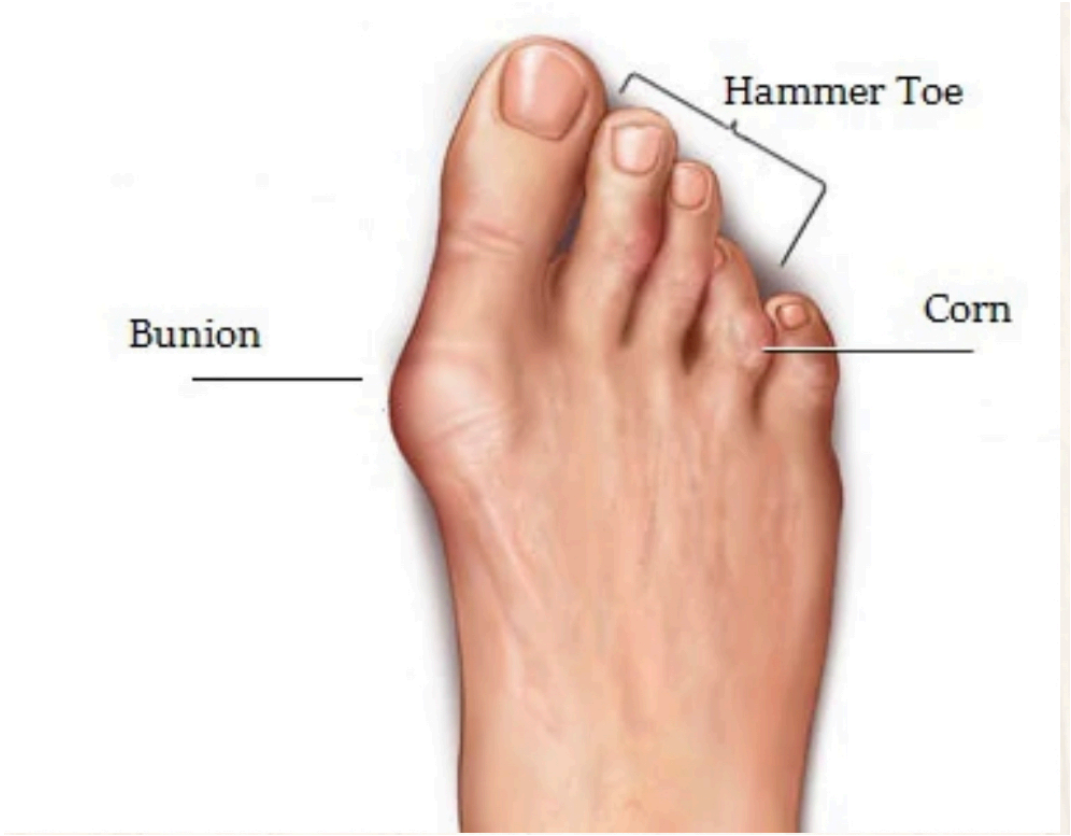
Izumi Y; Satterfield K; Lee S; Harkless LB

Is prophylactic diabetic foot surgery dangerous?

D G Armstrong et al. J Foot Ankle Surg. Nov-Dec 1996.

Any treatment rendered to the deformed, insensate foot should be undertaken with the prime intentions of reducing the potential for future limb-threatening events and allowing the patient to continue as an ambulatory, productive member of society. The purpose of this article is to compare morbidity and outcomes of elective foot surgery among diabetics and nondiabetics with isolated toe deformities. We compared the prevalence of infection, wound complication, and recurrence of ulcers in 31 diabetics and 33 nondiabetics. All of these patients received a single proximal interphalangeal joint arthroplasty with a mean follow-up of 3 years (range 12 to 61 months). The diabetic group was divided into two subgroups: 1) insensate with deformity, but no history of ulceration, and 2) insensate with deformity and a previous history of ulceration. Diabetics with a history of ulceration were more likely to experience a postoperative infection (14.3%) than neuropathic diabetic patients with no history of ulceration (0%) and nondiabetic subjects (0%) ($p = 0.04$, CI = 3.1 to 8.6). There was not a significant difference in prevalence of dehiscence among diabetic and nondiabetic groups (16.1% versus 9.1%, respectively, CI = 0.4 to 8.8). The long-term outcomes after prophylactic surgery at a site of previous ulceration were uniformly good, with 96.3% of patients remaining ulcer-free a mean of 3 years postoperatively.

https://pubmed.ncbi.nlm.nih.gov/8986899/



Surgery for the diabetic foot: A key component of care

Robert G Frykberg et al. Diabetes Metab Res Rev. 2020 Mar.

Abstract

Surgery for acute and chronic diabetic foot problems has long been an integral component of care. While partial foot amputations remain as important diabetic limb-salvaging operations, foot-sparing reconstructive procedures have become equally important strategies to preserve the functional anatomy of the foot while addressing infection, chronic deformities, and ulcerations. A classification of types of diabetic foot surgery is discussed in accordance with the soft tissue status and acuity of the presenting foot problem. This brief overview from the Association for Diabetic Foot Surgeons describes common conditions best treated by surgical interventions, as well as specific indications. While techniques and indications continue to evolve, effective surgical management of the diabetic foot remains an integral component of care as well as for the prevention of recurrent ulceration.

Office based surgery
Shorter surgery times
Smaller Incisions
Less injury to tissues
Minimal Loss of Blood

Local anesthesia versus general anesthesia
Faster recovery
Less need for pain medication
Less scaring
Smaller instrumentation