

The Diabetic Foot

An Approach to the Diabetic Foot

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Historically:

- Ebers Papyrus in 1500 B.C.
- Chronicles II
- Pryce T.D. (Lancet, 1887)

Why Treat Diabetic Foot Ulcers?

Common: 15% lifetime incidence

- 14-24% of patients with ulcers → amput.
- @ 3500 major amput./year in Canada.

“Downward spiral of clinical consequences”

- 5 yr. contralateral amput. rate of 40 %
- 5 yr. survival rate after amput. of 40%

Key Points:

1. Any patient with evidence of loss of protective sensation should be started on a comprehensive foot care programme
2. Only 12% of MD's routinely inspect their diabetic patients feet
3. Lower extremity education education with reinforcement -> prevention of foot ulceration and limb salvage

A Comprehensive Diabetic Foot Care Program

Assess patient risk

Education → #1 preventative intervention

Footwear : ∩ 30% callus

Job Retraining

Exercise Recommendations

Skin & Nail Care

GENERAL PRINCIPLES OF FOOT-CARE EDUCATION

- Target the level of information in co-ordination with the specific needs of the patient. Those not at risk only require general advice about foot hygiene and footwear.
- Suggest these “dos” rather than “don’ts” in your teaching approach. This will convey foot-care in a positive light and may be more acceptable to the patient.

DO—inspect the feet daily.

DO—report any problems immediately (*i.e.*, all skin lesions, including fissures, abrasions, calluses, hot or red spots and web space maceration).

DO—buy shoes with extra-depth toe boxes and molded rocker soles.

DO—inspect the inside of shoes for foreign objects everyday before putting them on.

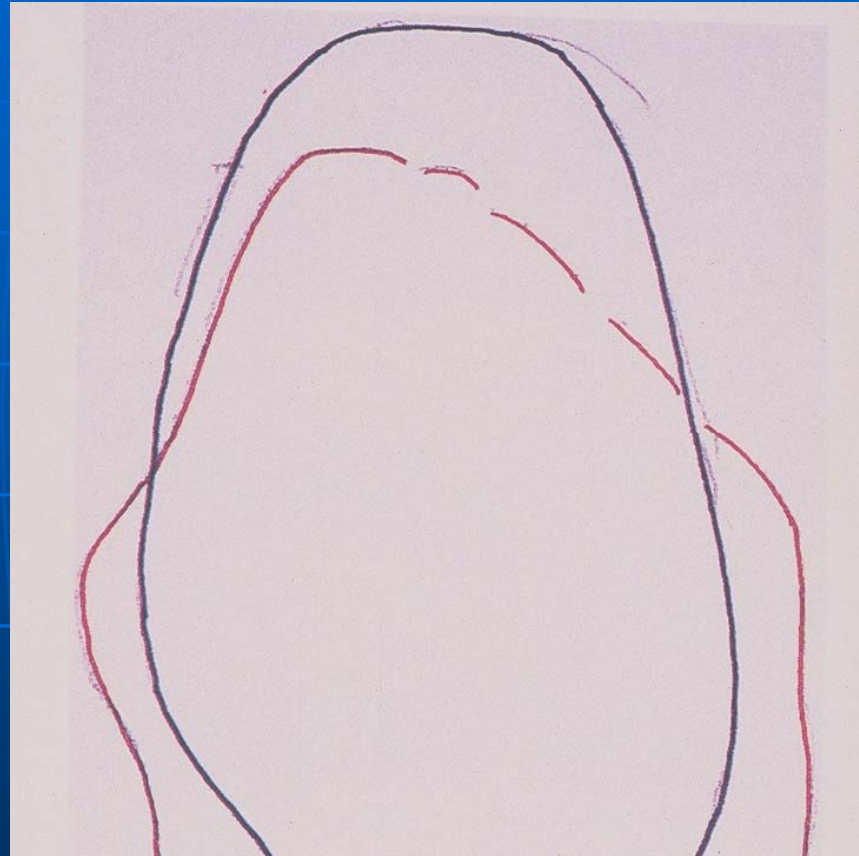
DO—visit a skilled skin and nail specialist on a regular basis.

DO—cut your nails straight across and not rounded.

DO—keep your feet away from heat (fires, radiators, hot water bottles) and check the bath water with a thermometer or your elbow before stepping into it.

DO—wear something on your feet at all times to protect them and never walk barefoot.

- Repeat this advice at regular intervals and you or your nurse should check that it is being followed at each office visit.
- Disseminate advice to other family members and health-care professionals involved in the care of the patient.





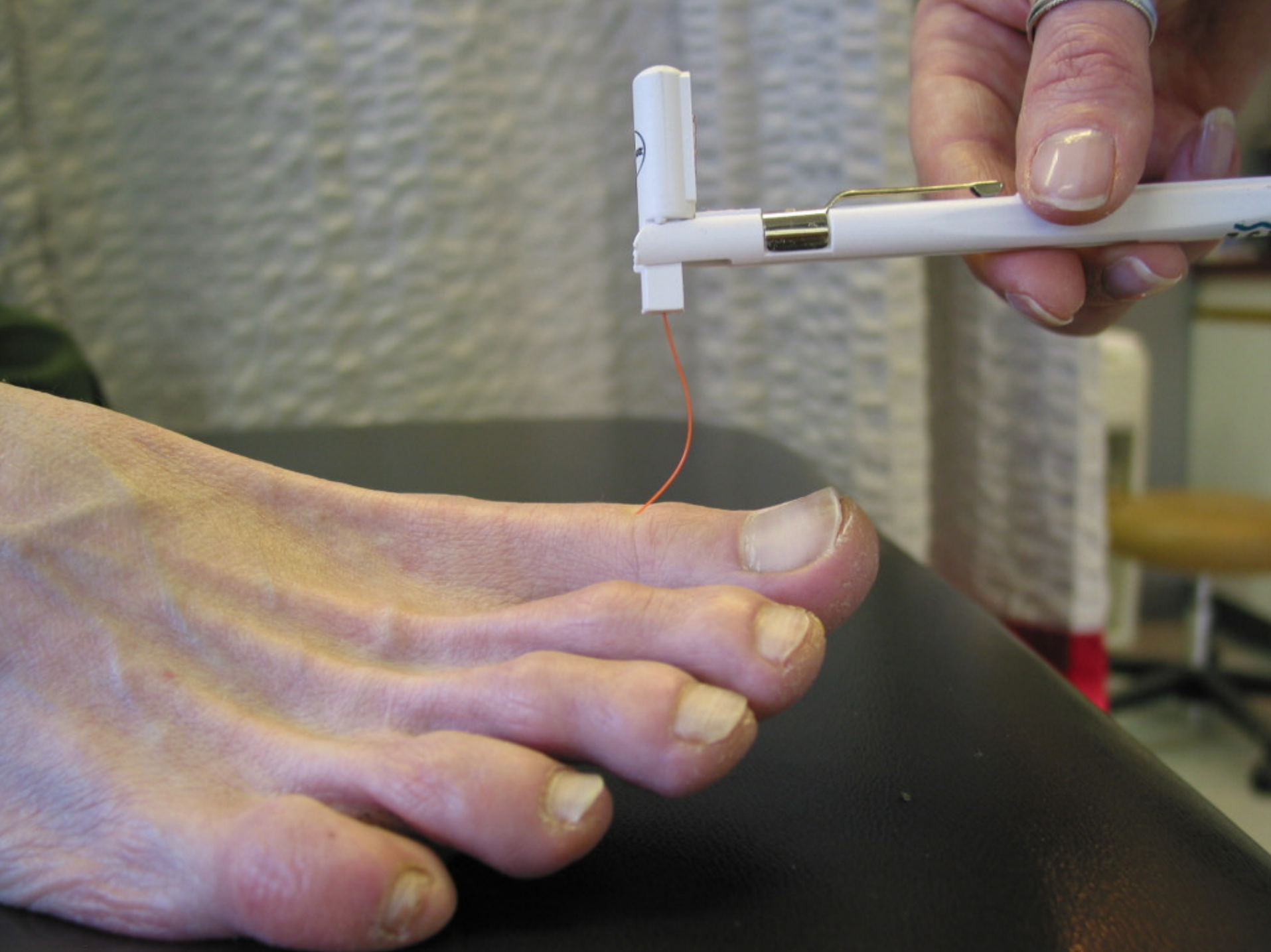


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ASSESSING a Patient's Diabetic Lower Extremity Risk





Management Based on Risk (Carvell)

1. Low Risk
(\emptyset loss)
 - Yearly follow up for foot screening
Education for selection of proper fitting footwear
2. Moderate Risk
(\emptyset protective sensation
+/- abnormal BQ)
 - Follow up every 6 months for foot and shoe examination and patient education
Properly fitted shoes with custom inserts and sole modifications
 - Follow up every 2 - 3 months for foot and shoe examination and skin /nail care
Custom molded orthotics and prescription footwear
3. High Risk
(Hx: plantar ulcer or neuropathic Fx)

(Edmonds, King's College, 1986 - 83% plantar ulcer recurrence when return to regular shoe use vs 17% with special shoes/plastazote inserts.)

Diabetic Foot Care Programme: (continued)

4. Exercise:
- i) Encourage a regular walking programme: Ø
PN (truncal obesity)
 - ii) NWB activities (swimming, biking, rowing, upper body): PVD, PN, insensate foot
 - iii) Therapeutic shoes, shorter steps, ↓ overall walking +/- job change:
Healed neuropathic plantar ulcer
5. Provide vigorous follow up to limit the potential serious problems

Specific Diabetic Lower Extremity Complications

1. Distal Symmetric Polyneuropathy

- a) Pain (dysesthesia)
- b) Loss of protective sensation
- c) Intrinsic muscle imbalance
- d) Anatomic dysfunction
- e) Neuropathic Osteoarthropathy (foot/Ankle)
- 2. Diabetic Foot Ulcers/Acute-chronic OM











Vascular Assessment:

required:

↓ pp, dusky toes, delayed capillary refill, necrotic tissue, heel ulcers *

investigations:

ABI with toe pressures, duplex arterial studies, angiography

outcome:

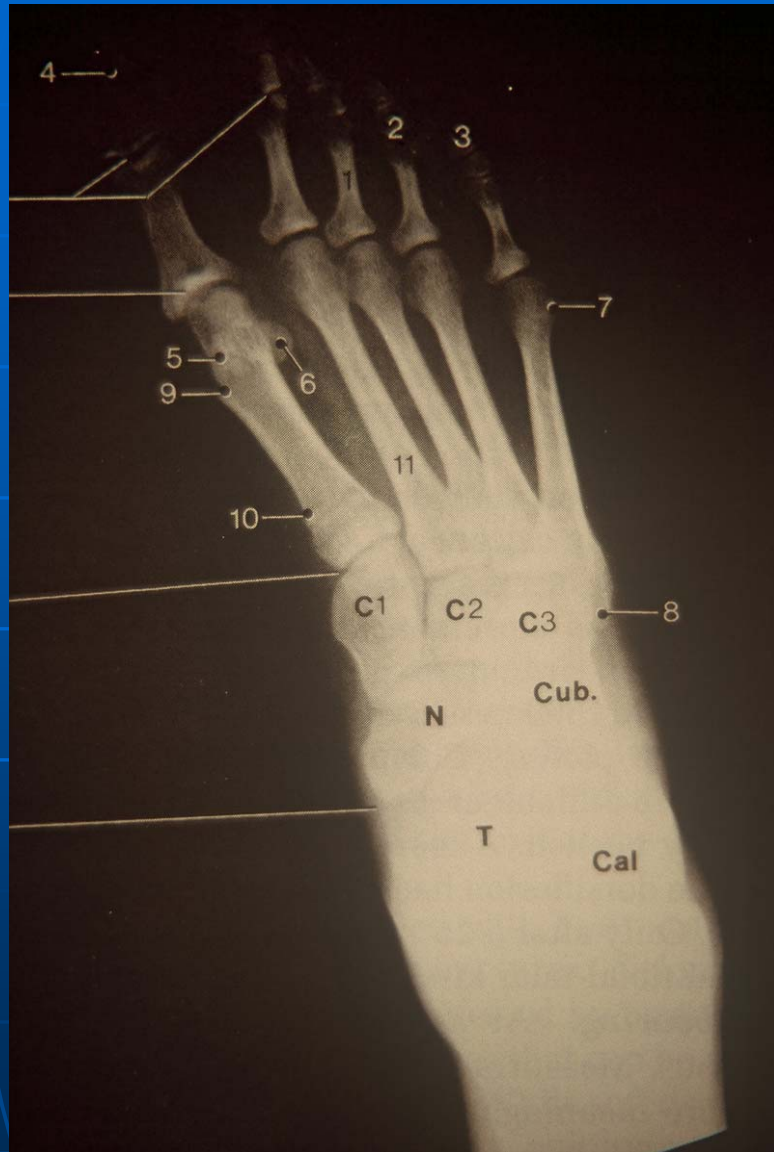
long term salvage of threatened limb 73%
even in high risk patients with aggressive ulcer
debridement and revascularization when
indicated (Taylor, Porter, J Vasc Surg, 1987)











Pre-ulcerative Lesions

- Callus/corns
- Fissuring: sebaceous gland loss
- Onychomycosis
- Fourth web space tissue breakdown
(tinea pedis, psoriasis, soft corn,
mixed bacterial infection)

Treatment-Based Assessment—Grade 0

Wagner Grade

0

Management Suggestions

• Debridement of calluses

• Properly fitted footwear

• Patient education











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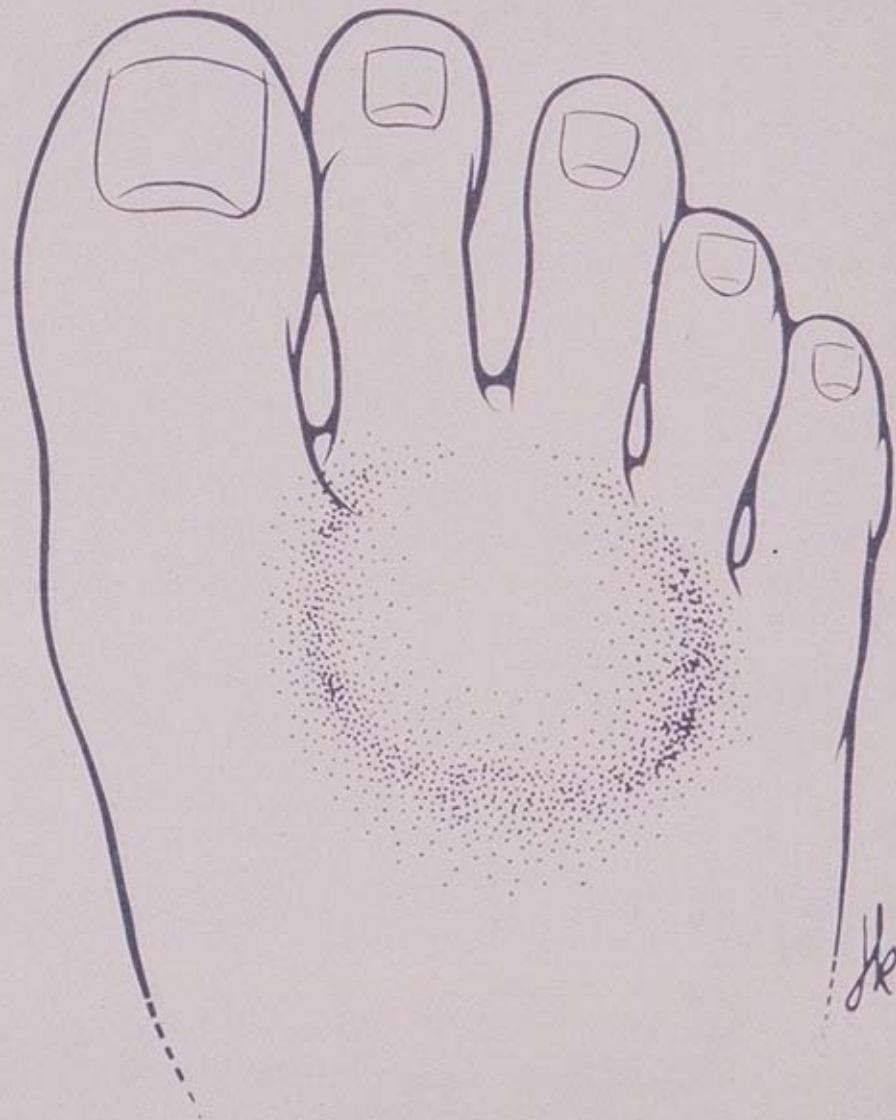
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HP

DO NOT SOAK THE FEET!!!

Four Factor --> Diabetic Foot Ulcer

1. Neuropathy
2. Vasculopathy
3. Impaired Cell
(Neutrophil impairment,
Glycosylation: keratin, collagen)
4. Trauma (biomechanical, shoes,
environmental)









