



# Infected Diabetic Ulcer & Surgery



Bari,  
7-10 novembre 2013

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# Infected Diabetic Ulcer & Surgery



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**Disparity between research funding & costs of care for diabetic foot ulcers.**

Armstrong DG et al.  
Diabetes Care 2013; 36 : 1815



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**The quality of published work is poor,  
with few controlled studies ...**

Berendt AR et al.  
Diabetic Foot Osteomyelitis : a progress report  
Diab Metab Res Rev 2008; 24 Suppl. 1 : S145



# Infected Diabetic Ulcer & Surgery



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**There is no sufficient clarity in the literature to adequately define when surgery becomes a necessity.**

Powlson AS et al.

The treatment of diabetic foot infections.

J Antimicrob. Chemother. 2010; 65 Suppl. 3 : 3



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- 1. Revascularization.**
- 2. Decompression.**
- 3. Foreign-Body Retrieval.**
- 4. Amputation.**

# 1. Revascularization.



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# 1. Revascularization.



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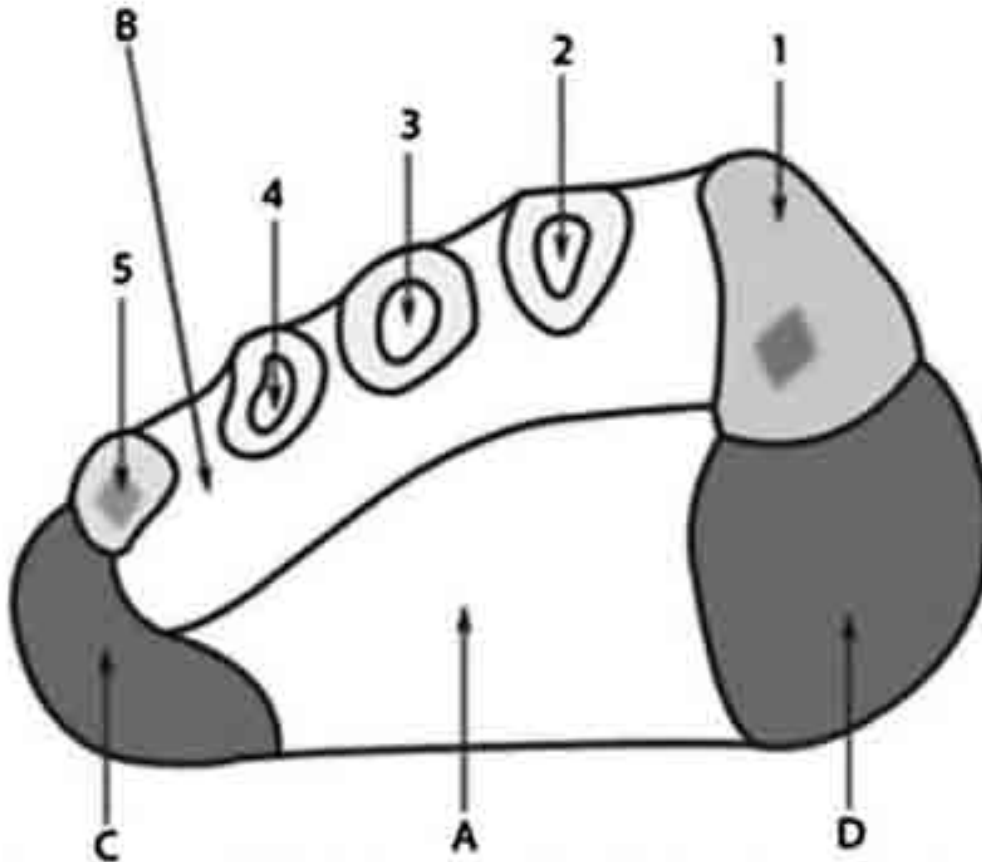
1. Revascularization.

**2. Decompression.**

## 2. Decompression.



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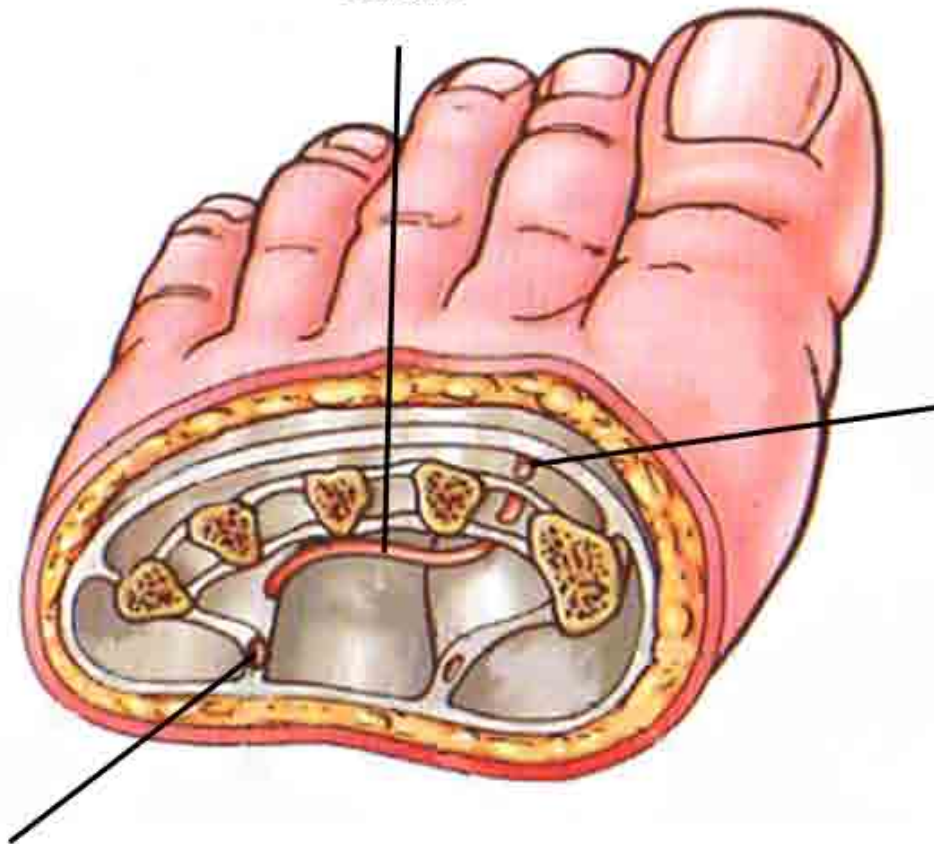
**Figure 1.** Schematic diagram of cross-section of the foot. Numbers 1–5 indicate metatarsal bones. *A*, central plantar space; *B*, deep interosseous space; *C*, lateral plantar space; *D*, medial plantar space [255, 256].

## 2. Decompression.



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**Plantar Vascular  
Arch**



**Dorsal Pedis  
Artery**

**Lateral Plantar  
Artery**

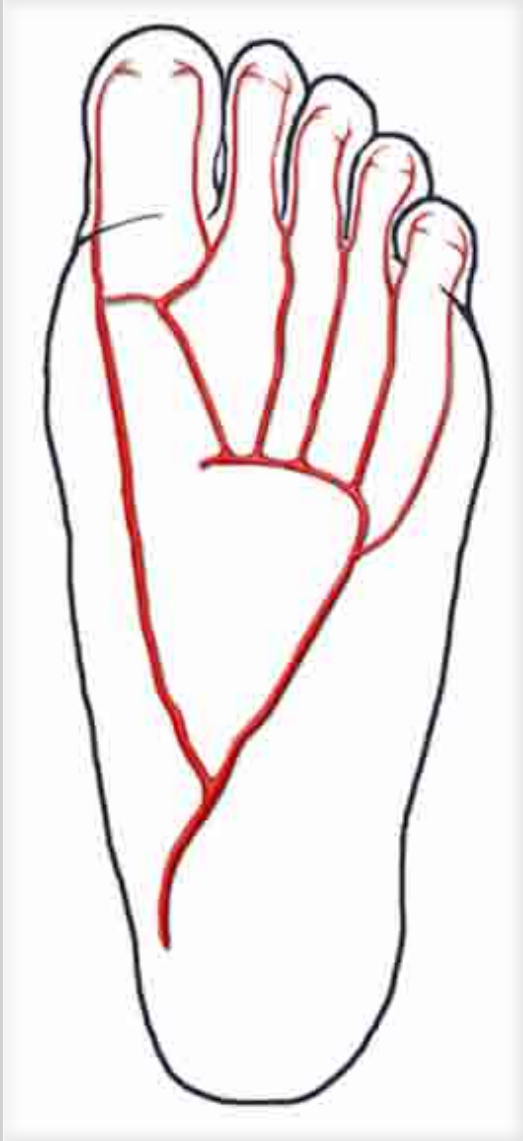




## 2. Decompression.



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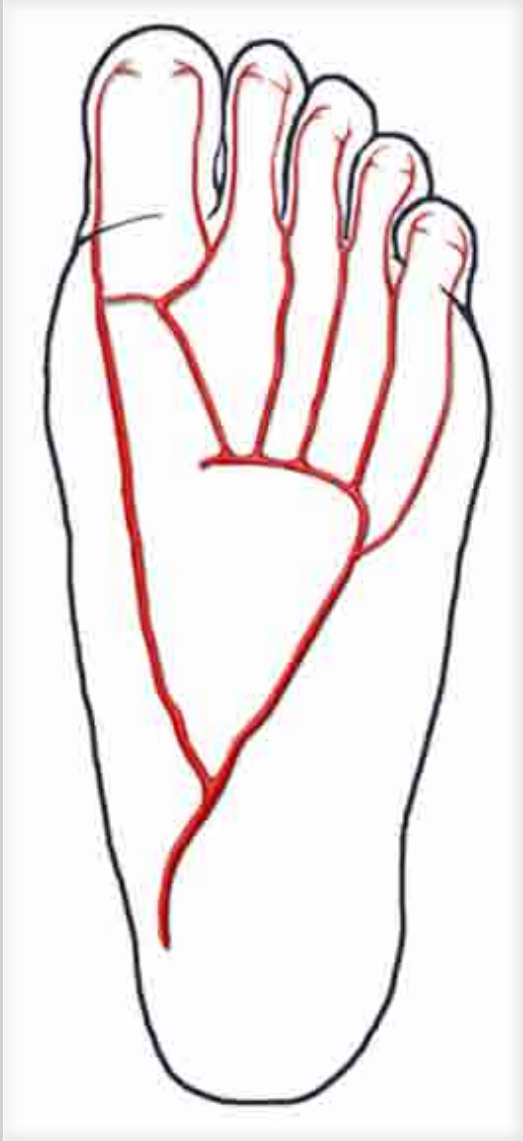




## 2. Decompression.



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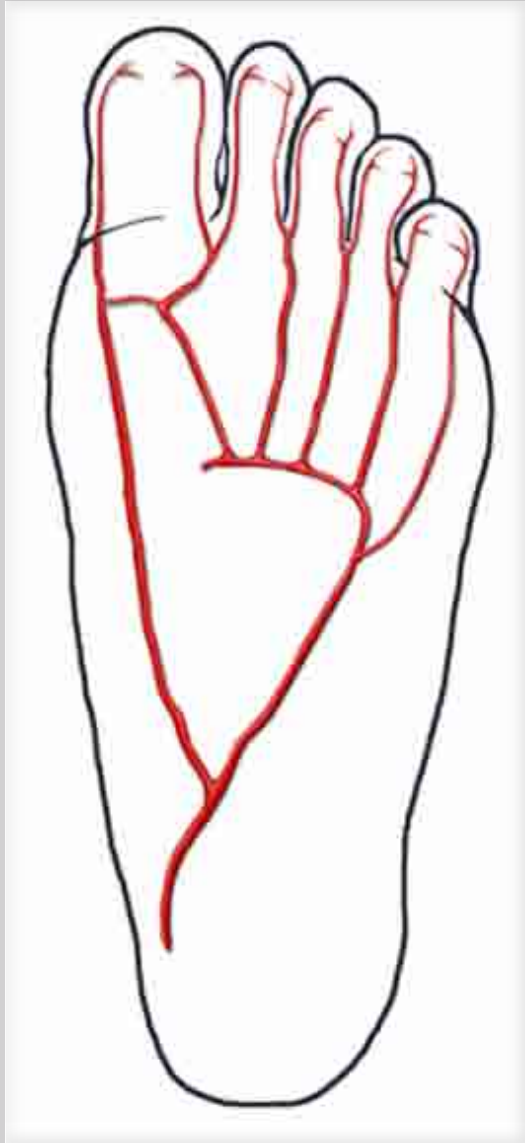




## 2. Decompression.



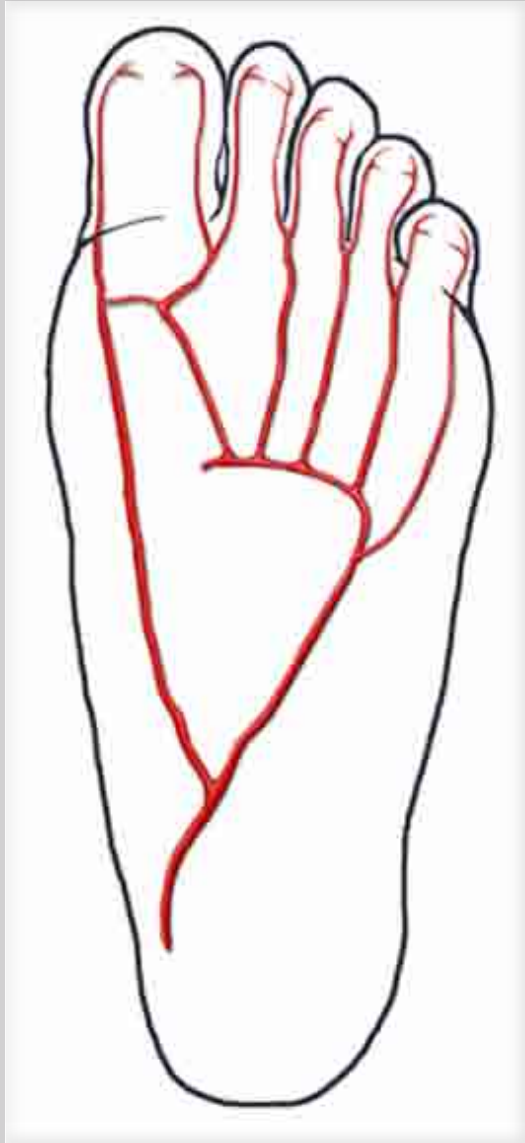
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## 2. Decompression.



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## 2. Decompression.



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## 2. Decompression.



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## 2. Decompression.



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## 2. Decompression.



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## 2. Decompression.



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## 2. Decompression.



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1. Revascularization.

2. Decompression.

**3. Foreign-Body Retrieval.**



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# 3. Foreign Body Retrieval.



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# 3. Foreign Body Retrieval.



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# 3. Foreign Body Retrieval.



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# 3. Foreign Body Retrieval.



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Swab, Wound  
Staph aureus +++

# 3. Foreign Body Retrieval.



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Swab, Wound  
Staph aureus +++





# 3. Foreign Body Retrieval.



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Swab, Wound  
Staph aureus +++



# 3. Foreign Body Retrieval.



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# 3. Foreign Body Retrieval.



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Swab, Medial Screw Hole  
Staph aureus +++





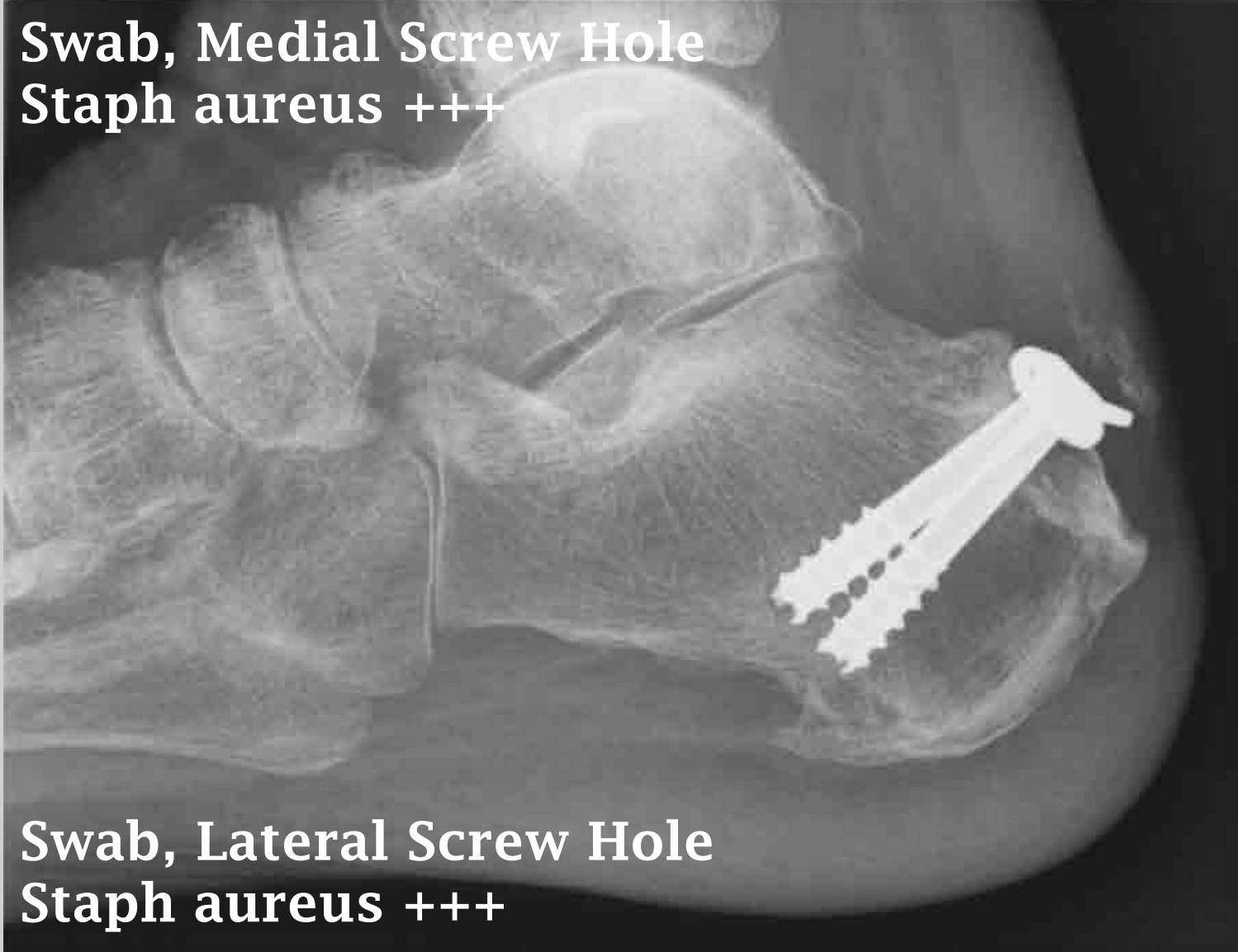
### 3. Foreign Body Retrieval.



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Swab, Medial Screw Hole  
Staph aureus +++

Swab, Lateral Screw Hole  
Staph aureus +++





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1. Revascularization.
2. Decompression.
3. Foreign-Body Retrieval.
- 4. Amputation.**



# 4. Amputation.



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# THE LANCET

Volume 366 Number 9498 Pages 1673-750 November 12-18, 2005

[www.thelancet.com](http://www.thelancet.com)

“Every 30 seconds a lower limb  
is lost somewhere in the world  
as a consequence of diabetes.”

See Review page 1719

## Articles

SIDESTEP: entapenem for  
diabetic foot infections  
See page 1695

## Articles

Wound therapy after diabetic  
foot amputation  
See page 1704

## Articles

Skin microcirculation and  
muscle metabolism of  
diabetic foot  
See page 1711

## Review

Treatment of diabetic  
foot ulcers  
See page 1725

## Review

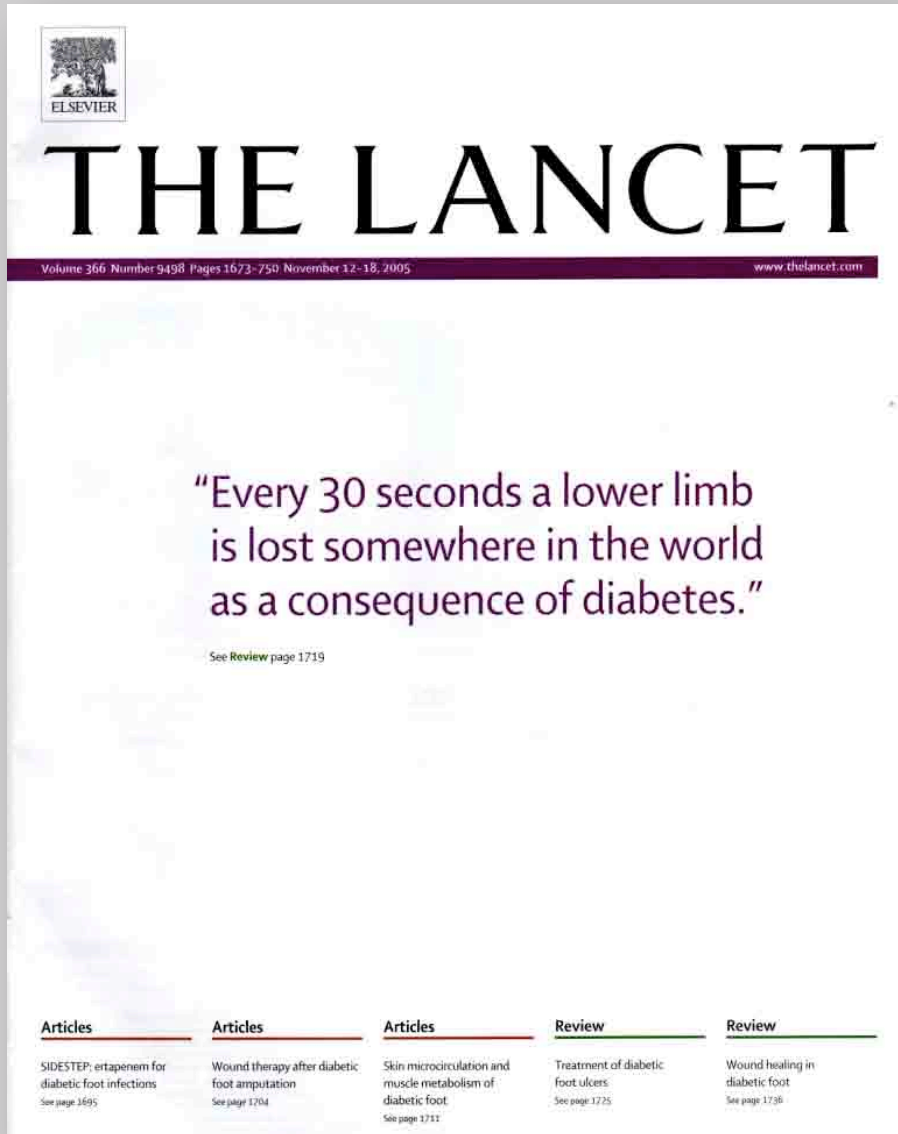
Wound healing in  
diabetic foot  
See page 1738



# 4. Amputation.



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**Lower extremity amputations :**

**Variation in the recorded incidence in England.**

Moxey PW et al.  
Diabet. Med. 2011; 28 : 1144

# 4. Amputation.



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## Prompt Response, Multidisciplinary Care Key to Reducing Diabetic Foot Amputation

Bridget M. Kuehni

**I**NVOLVING A MULTIDISCIPLINARY TEAM of clinicians early in the care of patients with diabetic foot infections is crucial to preventing foot amputations, according to a new guideline from the Infectious Diseases Society of America (IDSA) (<http://tinyurl.com/bo5set7>).

Nerve damage and poor blood circulation to the extremities in individuals with diabetes can lead to foot injuries or ulcers and subsequent infection and also impair healing of the foot, according to the US Centers for Disease Control and Prevention (CDC). The growing incidence of diabetes in the developed world, higher body weights, and greater longevity among patients with diabetes are all contributing to an increase in such infections, according to the IDSA. Figures from the CDC show that more than 111 000 individuals with diabetes required hospitalization for foot infections in 2003.

"Diabetic foot infections are a major health problem in the United States, with considerable morbidity and mortality," said James Horton, MD, chair of the IDSA's guidelines committee and chief of the division of infectious diseases in the department of internal medicine at the Carolinas Medical Center in Charlotte, NC. "Early identifica-

tion and treatment is key to addressing this problem."

The guideline notes that 71 000 individuals were discharged after diabetes-related foot amputations in 2005.



Clinicians may help prevent diabetes-related foot amputations by ensuring proper care for foot infections, says a new guideline from the Infectious Diseases Society of America.

The amputation rate among patients with diabetes has actually been declining, from 11.2 per 1000 in 1996 to 3.9 per 1000 in 2008, but the guideline aims to further reduce that rate. Amputations contribute to poor quality of life for patients, and according to the IDSA,

about half of such patients die within 5 years of amputation.

"Lower extremity amputation takes a terrible toll on the diabetic patient," said Benjamin A. Lipsky, MD, lead author of the guideline and professor of medicine at the University of Washington and VA Puget Sound, Seattle, in a statement. He explained that after amputation many patients can no longer walk and so are less able to work and socialize. These individuals are at risk of depression and subsequent amputations.

But as Lipsky and his colleagues write in the guideline, these amputations can often be prevented with proper care: "Properly managed, most [diabetic foot infections] can be cured, but many patients needlessly undergo amputations because of improper diagnostic and therapeutic approaches."

The guideline, which replaces a version published in 2004, takes into account a growing body of literature about diabetic foot infections and how to care for them. It classifies the strength of each recommendation and the evidence base supporting it using the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system.

The guideline emphasizes the importance of establishing a multidisciplinary



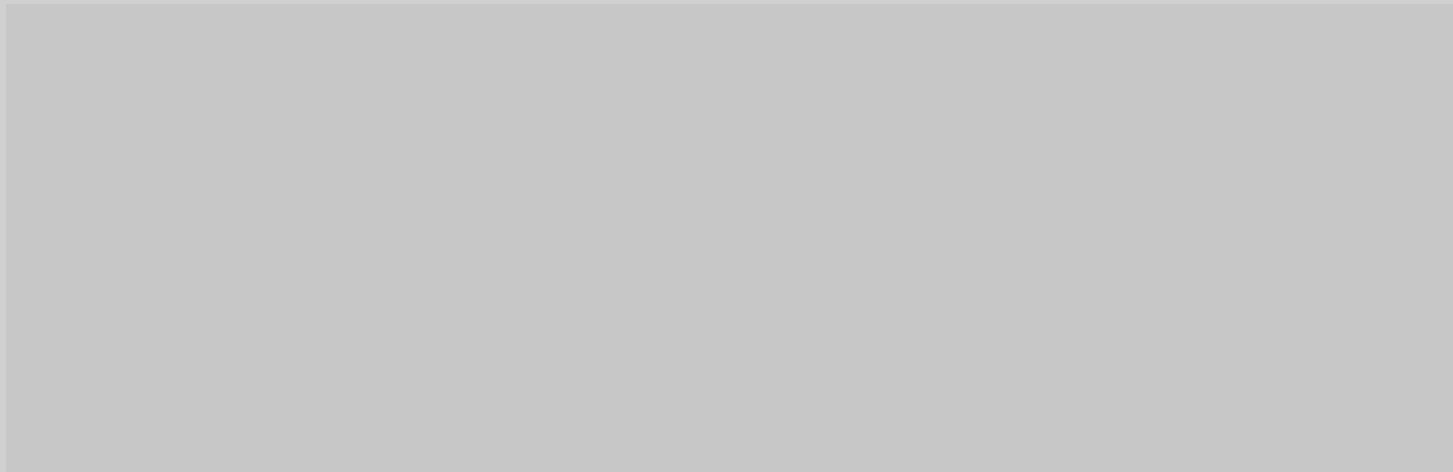


## 4. Amputation.



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**Is the foot salvageable  
& worth saving ?**





## 4. Amputation.



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**Is the foot salvageable  
& worth saving ?**

Yes	Spare No Effort.
No	Function Sparing Amputation.
Yes/No	Time Limited Observation.



# Is the foot salvageable & worth saving ?



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# Is the foot salvageable & worth saving ?



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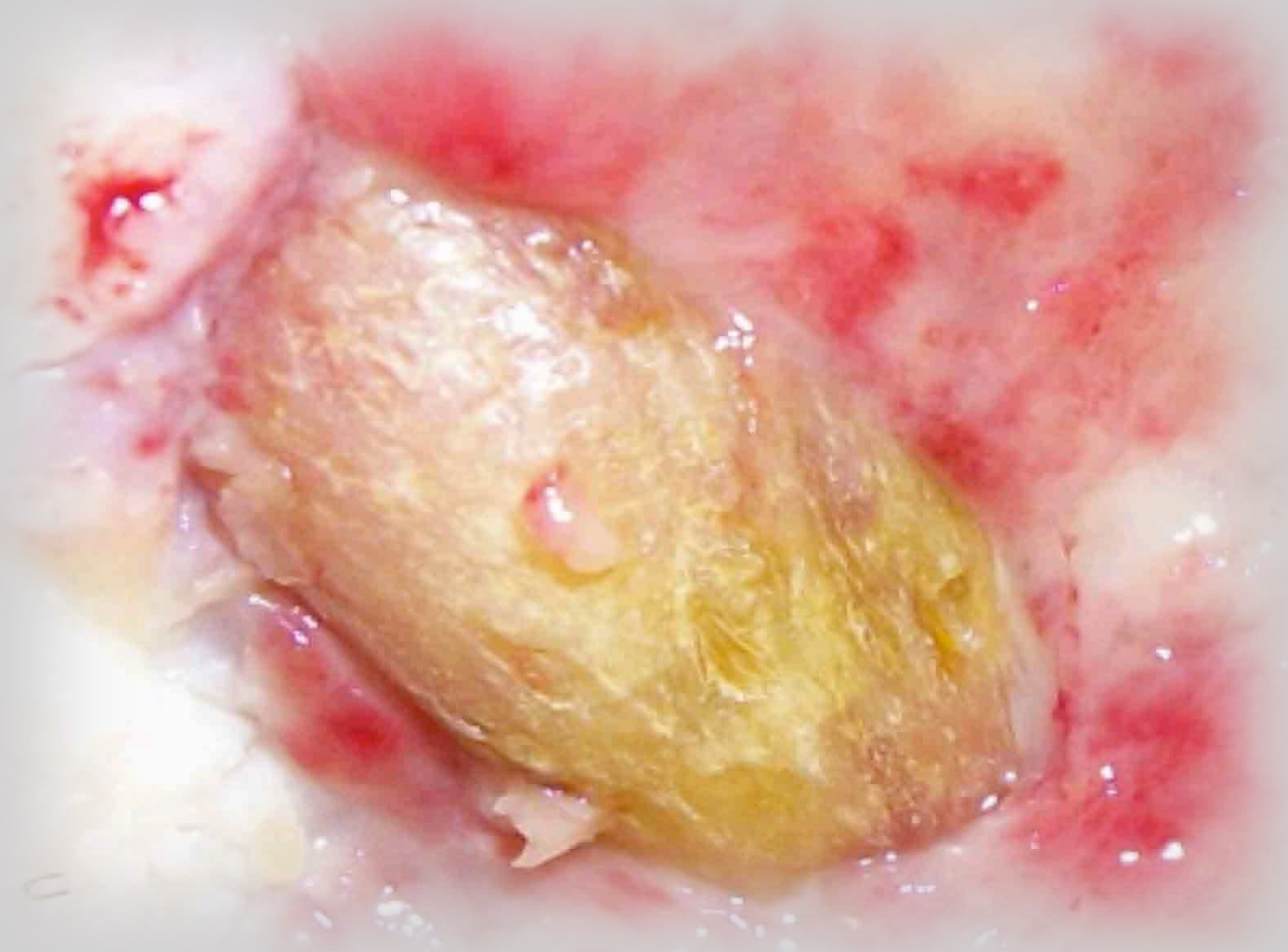




# Is the foot salvageable & worth saving ?



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**Thank You**