



# **Failed** forefoot surgery



Toulouse june 8,9,10th

## **Metatarsus elevatus** after first metatarsal osteotomy

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## Metatarsus elevatus

### definition

Metatarsus elevatus = elevation of the first metatarsal head



X ray = sagittal view

Dorsal bunion



1st meta insufficiency

Transfert metatarsalgia





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## **Metatarsus elevatus**

### **Why a metatarsus elevatus ?**

- Bad fixation or instable osteotomy (troughing)**
- Fracture**
- metatarsus elevatus primus non corrected**
- Cuneometatarsal hypermobility**



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## Metatarsus elevatus

### Fracture possible with different osteotomies

**chevron osteotomy**



**Basal osteotomy**



**Distal fracture /  
scarf osteotomy**



**proximal fracture /scarf osteotomy**





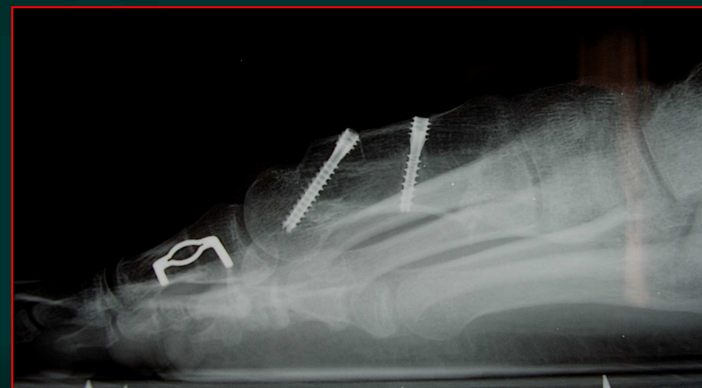
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## Metatarsus elevatus

Bad indication ?

Hallux valgus with an important metatarsus elevatus non completely corrected by a lowering scarf osteotomy





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## Metatarsus elevatus

Possible associated lesions  
if fracture

Shortening of the  
1st metatarsal



lateromedial deviation  
of the 1st metatarsal

Plantar migration  
of the screw





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## Metatarsus elevatus

consequences

Osteonecrosis ( 1 case)



1 month after scarf ost.



2 years after





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## Metatarsus elevatus

How to treat ?

To lower 1st metatarsal  
but second surgery on the same bone

To elevate the lesser metatarsal





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## Metatarsus elevatus

How to treat ?

In early displacement or non healing



2 months after

Reduction &  
transversal K wiring  
fixation ( P. Diebold)



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## Metatarsus elevatus

How to treat ?

Distal metatarsus elevatus/ malunion

→ Dorsal cheilectomy if no 1st meta insufficiency





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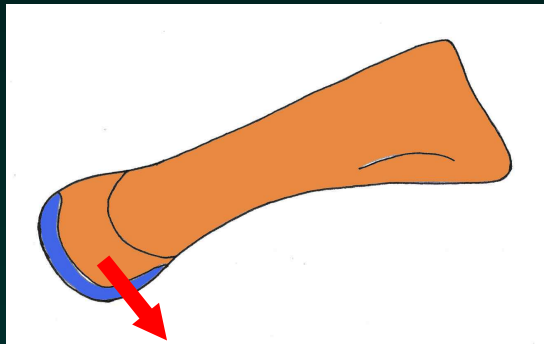


## Metatarsus elevatus

How to treat ?

● **Distal metatarsus elevatus/ malunion**

→ **Lowering crescentic distal osteotomy**



Vora A , Myerson M : First metatarsal osteotomy nonunion and malunion .  
Foot & Ankle Clinics 10 ( 2005 ) : 35-54



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## Metatarsus elevatus

How to treat ?

- **Distal metatarsus elevatus/ malunion**
  - ➔ **Dorsal addition distal osteotomy with a dorsal graft ( dorsal plate )**



- **MTP1 fusion if arthritis or necrosis**



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## **Metatarsus elevatus**

How to treat ?

### **Proximal metatarsus elevatus/ malunion**

**Crescentic proximal osteotomy if  $M1=M2$**

**Plantar soustraction prox. osteotomy if  $M1 > M2$**

**Dorsal addition prox. osteotomy if  $M1 < M2$**



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## Metatarsus elevatus

How to treat ?



M1 < M2 and metatarsus varus

→ dorsal lengthening osteotomy with graft  
& anatomic plantar plate

Good result 1 year after



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## Metatarsus elevatus

How to treat ?



Modified Lapidus procedure sometimes interesting to correct large elevatus or hypermobility



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## Metatarsus elevatus

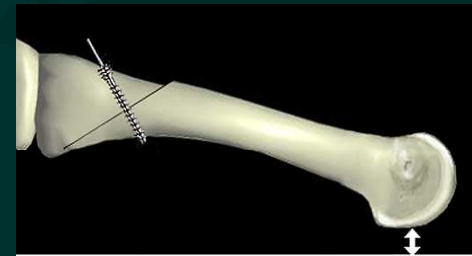
How to treat ?

What to do on lesser rays ?

If the metatarsal curve or pitch is not corrected by the surgery on the first ray



Weil osteotomy if too long

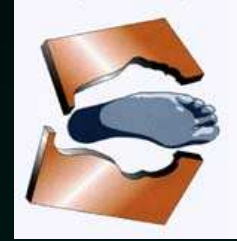


BRT osteotomy if too lower





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## Metatarsus elevatus

### conclusion

**Metatarsus elevatus is a specific complication of early weightbearing if the osteotomy of the 1st metatarsal is not stable.**

**The treatment needs to correct the position and the length of the 1st metatarsal compared to the other metatarsal to avoid secondary metatarsalgia.**

**The best fixation of the 1st metatarsal is often the plate.**





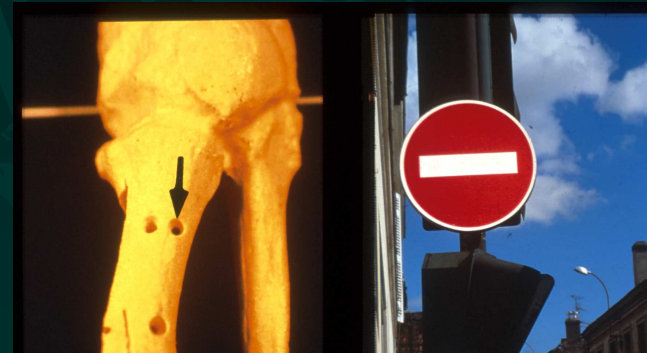
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Metatarsus elevatus

conclusion

First , to prevent



- A plane and stable cut
- A stable and well placed fixation