

Facts & Figures

Treatment Comparison and Study Results

VACOped [®] by OPED



VACOped is as stable as a cast and can be applied directly in the OR. Through its combination of comfort and stability, the VACOped represents the modern standard in treatment of foot and ankle injuries.

1. Stable as a Cast

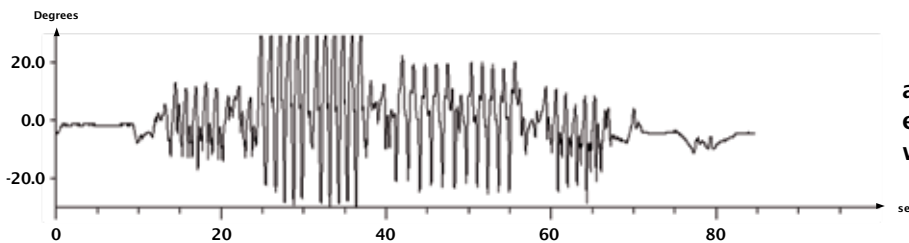
In the past, a plaster cast was used for external immobilisation and stabilisation of fractures. It was only towards the end of the 20th century that orthoses began to replace the plaster cast. These orthoses became the favoured option for functional post-operative treatment.

VACOped is the only orthosis which combines early functional treatment with cast-like stability, through its integration of a form fitting vacuum cushion and hard outer shell. After the phase in which this cast-like stability is critical, the VACOped can be changed into an early functional orthosis.

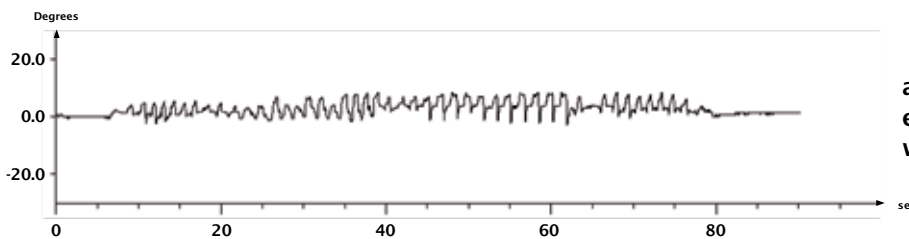
Biomechanical Study, BASiS Institute Munich

Dipl. Phys. J. Mitternacht, Dr. P. Schaff

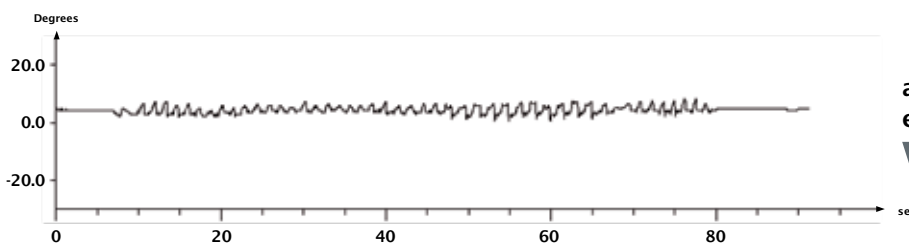
Amplitude of flexion/extension in the ankle joint while stair climbing (electronic goniometer)



ankle extension/flexion with running shoe



ankle extension/flexion with a cast



ankle extension/flexion **VACOped** [®] by OPED

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2. VACOped vs. Conventional Treatments: Treatment Progress and Weight Bearing Comparisons.

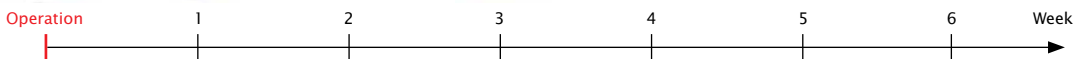
VACOped has revolutionized post-op treatment. In Germany and Switzerland, it is already considered as the „Gold standard“. The diagram below shows post-operative ankle fracture treatments currently available.

Treatment with VACOped

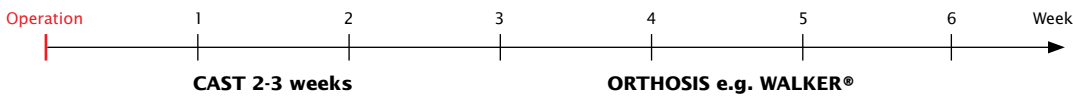
Applied in OR/emergency room

Benefit of single solution: can be used immediately after operation until full recovery.

Treatment with VACOped



Treatment with Cast + Walker



3. Comparative Benefits of Current Post-Operative Treatment Options

The table below compares the benefits of various post-operative treatments currently available.

| | Free Functional | Cast | Cast + Walker | VACOped ^{cast} | VACOped |
|--|-----------------|------|---------------|-------------------------|---------|
| Can you treat conservatively? | ✗ | ✓ | ✓ | ✓ | ✓ |
| Can you treat operatively? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Can you use it for the splinting pre operation? | - | ✓ | ✓ | ✓ | ✓ |
| Is complete immobilisation possible (cast stable)? | ✗ | ✓ | ✓ | ✓ | ✓ |
| Can you treat in fixed ankle position and with partial weight bearing? | ✗ | ✗ | ✓ | ✓ | ✓ |
| Can you treat with ROM and full weight bearing after 6th week? | ✓ | ✗ | ✗ | ✗ | ✓ |
| Can you use the same orthoses/Method during the whole treatment? | ✓ | ✗ | ✗ | ✓ | ✓ |
| Does outcome comply with AO philosophy? | ✓ | ✗ | ✗ | ✗ | ✓ |
| Ease of access for wound control? | ✓ | ✗ | ✗ | ✓ | ✓ |

Conclusion:

Figures indicate that the VACOped offers superior functional results when compared to conventional treatment options. VACOped combines the advantages of free functional treatment with the security of a cast and the walking comfort of a shoe.

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4. Economic Facts and Studies

I. AO Clinical Investigation



The Dynamic Vacuum Orthosis: Functional and Economical Benefits

Franke J¹, Goldhahn S², Audigé L², Kohler H¹, Wentzensen A¹

Introduction: The rehabilitation of ankle fractures substantially affects the functional outcome as well as patient satisfaction and the total costs of treatment. The purpose of this study was to investigate whether functional rehabilitation of surgically treated ankle fractures in a dynamic vacuum orthosis, which permits early full weight-bearing and continuous limited movement, can lead to an improved clinical outcome at a lower cost when compared with post-op treatment in a cast.

| | Cast Treatment | VACOped [®] |
|--|---------------------|---|
| Total time for application and reapplication | 105 min. | 25 min. |
| Timeloss in operation theatre | 15 min. | 4 min. |
| Thrombosis prevention | 42 doses | 16 doses |
| Physiotherapy | after removing cast | possible at any time |
| Return to work | 76 days | 52 days |
| Patient satisfaction | | comfort: significantly higher pain: significantly less |
| Mental health score | | significantly higher |

Conclusion:

The figures indicate that rehabilitating patients with a dynamic vacuum orthosis after an ankle fracture results in greater functional outcomes and patient satisfaction rates when compared to conventional casting methods. The orthosis allows patients to return to work significantly earlier than a cast. The application of the orthosis not only reduces workload of medical staff, but also saves on overall treatment and rehabilitation costs.

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to 2) S. Goldhahn, L. Audigé, AO Clinical Investigation and Documentation, Switzerland

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4. Economic Facts and Studies

II. AO Clinical Investigation



Shortened Rehabilitation of Ankle Fractures Using a Vaccum Orthosis A Randomized Controlled Trial

Honigmann P¹, Goldhahn S², Rosenkranz J², Audigé L¹, Geissmann D³, Babst R¹

Introduction: This study compared an early weight bearing orthosis (VACOPed) with a partial weight bearing functional treatment. Functional results, walking confidence, patient comfort and return to work rates were investigated. Hospitalisation duration, range of motion ability, swelling and haematoma rates were also compared.

| | Functional Treatment | VACOPed |
|---------------------------|----------------------|-----------------------------|
| Hospitalisation | 4 days | 3 days |
| Full weight bearing after | 44,5 days | 32 days (12,5 days earlier) |
| Return to work | 53 days | 37 days (16 days earlier) |
| Swelling | | significantly less |
| Functional outcome | equal | equal |

Conclusion:

The figures indicate that post-operative treatment of malleolar fractures with the VACOPed results in an earlier discharge from hospital and an earlier return to work.

to 1) P. Honigmann, J. Rosenkranz, R. Babst, Department of Surgery, Trauma Unit, Kantonsspital Luzern, Switzerland
to 2) S. Goldhahn, L. Audigé, AO Clinical Investigation and Documentation, AO Foundation, Switzerland
to 3) D. Geissmann, Regionalspital Emmental AG, Switzerland

5. VACOPed Combines the Security of the Cast with the Advantages of the Free Functional Treatment

Cast



- Nerve and skin irritations
- Poor ankle motion
- Wound controll?
- Increased need of Physiotherapy
- Slow recovery
- Muscle dystrophy



- Stable
- Safe



VACOPed



- Excellent outcome
- Wide range of motion
- Fast recovery



- Unstable
- Unsafe (re-fracture)

Free Functional

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