

Post-operative oedema prevention

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Preventing post-operative oedema formation in foot & ankle surgery



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I frequently perform ankle and hindfoot surgery which requires the use of a plaster cast post-operatively. This may be for painful arthritis, for correction of a deformity, for tendon repairs or following trauma. Following this type of surgery there is significant swelling, there can be wound healing problems and there is a risk of developing a DVT or blood clot. I use the geko™ device routinely post-operatively in these patients. In my experience this reduces the post-operative swelling significantly. This in turn results in improved wound healing, reduced wound infection and in many cases reduced post-operative pain. It also has the additional benefit of protecting against Deep Vein Thrombosis.

Hindfoot Surgery:

Immediately post-surgery, whilst the patient is in the recovery room, I apply the geko™ device to the operated leg. I look for a visible movement of the muscles in the lower leg, moving the foot slightly outwards and upwards. The ward staff change the device every 24 hours until discharge. When the patient is ready to return home, they are trained to self-apply the geko™ and are provided with sufficient devices for up to 5 days stimulation, and a protocol reducing geko™ wear time to just 12 hours per day. Patients are happy to self-apply the geko™ in the home environment and have reported positive feedback during its use¹.

Clinical outcomes observed during use include:

- Prevention in oedema formulation
- No pain reported during use*
- Wound closure*
- Earlier mobility with active range of movement*

* Clinician observations. Not a cleared indications for use.



[Mechanism of Action –](#)

[Speckle imaging video](#)

[Oedema reduction](#) [showing microcirculatory blood flow at baseline and with the geko™ device switched on.](#)

Ankle fusion surgery (arthrodesis), which involves fusing together two bones in the ankle to prevent the painful grinding, eliminates motion to provide stability. Although surgical techniques have improved, failure of surgery, such as a non-union, can still occur and this will lead to significant ongoing symptoms for the patient.

One sufferer, Mrs Angela Hood, was unable to work for several years due to continuous chronic pain. She was prescribed the geko™ to prevent swelling during the acute stage of post-surgical healing following revision surgery. The geko™ device prevented the build-up of post-surgical swelling and she reported the immediate reduction of her chronic pain².



Comment – Mrs Hood

“My revision surgery was extensive. Left ankle fusion with a bone graft harvested from the site of my previous surgery – so two open wounds. When I woke I was naturally in extreme pain. I was fitted with the geko™ device and I immediately noticed I then had very little pain, and no swelling. On one occasion I forgot to fit the geko™ before bed, and woke in the night, again in extreme pain. Within 30 minutes of fitting geko™ the pain eased completely.

When my open cast was changed to a full cast, I was able to see the ankle and foot. There was minimal swelling and bruising and the surgical wound had healed. The geko™ was easy to use and after only a short time of use I could hardly feel the device contracting my calf and foot muscles. I would recommend the geko™ to anyone having ankle fusion surgery”.

Benefits



Right side: Plaster cast removed, no pain or swelling upon examination.



Left side view - same foot. Same day.

60%

The increase in blood flow is equal to 60% of walking without a patient having to move.

Downloads

[Digital Flyer - Oedema reduction \(Foot and Ankle\)](#)

[Brochure - Oedema reduction \(Hip-to-toe\)](#)

[Case study - Hind foot fusion](#)

[Procedure protocol - Hind foot fusion](#)

[Mechanism of Action illustration](#)

Related Studies & Guidance

[Wainwright et al - oedema reduction RCT](#)

[Baker et al - pre-operative oedema reduction](#)

[Abstract - Nicolaides et al - geko™ deep veins study](#)

[Paper - Nicolaides et al - geko™ deep veins study](#)

[NICE guidance - geko™ VTE prevention](#)

References

1. J McKinley. Hindfoot fusion procedure protocol on file, Firstkind Ltd, 2016
2. J McKinley J, Walker S, Wainwright T: Using the geko™ device to prevent oedema and promote functional activity following hindfoot fusion, case study on file, Firstkind Limited, 2013.