

What is it?

GaitScan is a system that improves the accuracy of dynamic (moving) foot and ankle assessment¹, providing information that can be of great use in physiotherapy treatment as well as orthotic prescription.

Key Points

- ✦ Foot biomechanics are assessed by an Ethos Health Physiotherapist and by the computerised GaitScan system when a client walks over an electronic force plate.
- ✦ This information assists accurate diagnosis and optimal management of many conditions
- ✦ Customised semi-rigid orthotics can be generated from the GaitScan system and may be an important component of successful treatment.

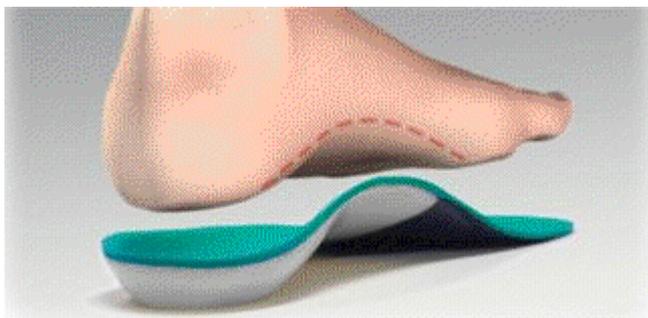
Associated Medical Problems

Foot structure changes with age, bodyweight, activity and injury. This alters how your body copes with the forces absorbed by the feet and legs during standing, walking or running. An inability to cope properly with these forces will lead to certain structures being overloaded and likely development of pain.

There are many common conditions that may be caused or aggravated by abnormal movement or shock absorption at the foot and ankle, such as²:

- | | |
|---------------------|--------------------|
| ✦ Plantar fasciitis | ✦ Heel spurs |
| ✦ Shin splints | ✦ Bunions |
| ✦ Knee pain | ✦ Stress fractures |
| ✦ Hip pain | ✦ Low back pain |

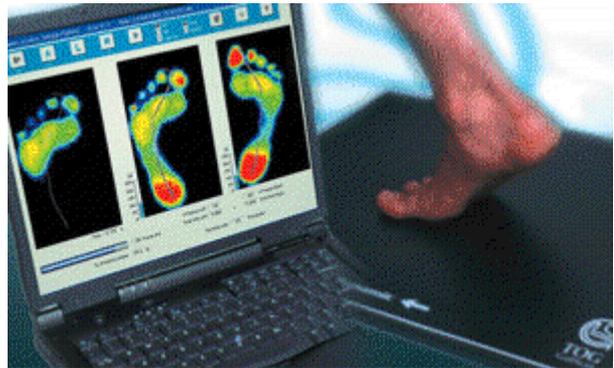
Orthotics are shoe inserts designed to improve the support and cushioning offered to the feet. They can play an important role in effectively managing these problems.



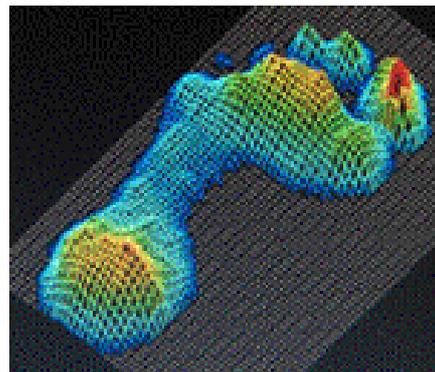
GaitScan Orthotics

GaitScan orthotics are customised, computer-generated products. The shape and structure of each pair is determined by two factors:

1. Information provided by your Ethos Health Physiotherapist, such as diagnosis, foot structure, alignment and biomechanical issues



2. Data collected by the GaitScan software obtained when the client walks over the force plate, such as:
 - ✦ Overloading and under-loading of different parts of the foot
 - ✦ Forces during the walking cycle
 - ✦ Compensatory movements and altered timing



This data is sent to an orthotic lab in Canada where the findings are further analysed and orthotics produced before being sent back to Australia for pickup within 2-3 weeks.

Other components of physiotherapy treatment such as manual therapy, taping, exercise prescription, stretching programs and modified sports training programs will still be important in settling pain and promoting a rapid return to work or sport.

Benefits of GaitScan Orthotics

Comfort: semi-rigid orthotics offer the ideal balance between support and cushioning. GaitScan orthotics flex slightly as weight is taken through each foot but always return to their normal shape – they won't wear out. Depending on footwear and activity, different amounts of cushioning can be built into each orthotic.

Variety and Specificity: There are a huge range of orthotics available for people of different ages, sizes and activity levels. For example, specifically-shaped orthotics are available for:

- ✦ Women's dress shoes
- ✦ Casual shoes
- ✦ Running shoes
- ✦ Football boots
- ✦ Safety boots
- ✦ Court (e.g. tennis and basketball) shoes
- ✦ Multipurpose shoes
- ✦ Older and younger clients
- ✦ Diabetics
- ✦ And many more

Depending on diagnosis, each orthotic can be further customised by adding or removing elements of extra support. For example, extra-soft padding could be placed underneath a painful spur to reduce heel pain while walking.

Modifications: GaitScan orthotics can be modified free of charge for up to 2 months from date of purchase to ensure optimum results.

Affordability: compared to alternatives and competitors; most other customised orthotics cost over \$500 while GaitScan orthotics are available from Ethos Health for only \$330. Many private health funds offer rebates of up to \$200 per person per annum.

Durability: The orthotic shell will last for several years, while replacement covers for the orthotic can be ordered at any time for a minimal fee. In comparison, prefabricated orthotics only last 6-9 months before their cushioning and support systems have worn out.

Examples of GaitScan Orthotics

Runners



Painful spur



Safety boots



Orthotic Alternatives

There are three types of orthotics:

- ✦ Prefabricated
- ✦ Customised semi-rigid (such as the GaitScan orthotics described above)
- ✦ Customised rigid

Prefabricated orthotics are generic inserts designed to improve cushioning and offer a small degree of support. They are cheaper but less effective and need to be replaced frequently. They are available at Ethos Health and recommended for growing feet or as a 'trial orthotic' if the likely prognosis from semi-rigid orthotics is unclear.

Customised semi-rigid orthotics (GaitScan) offer the best balance of shock absorption, biomechanical control and affordability³.

Customised rigid orthotics are made by taking a plaster cast of the foot in non-weightbearing. They are typically available from podiatrists and provide maximal control but tend to reduce cushioning and comfort. Of all orthotic types they are most likely to be uncomfortable to wear.

References

1. Ross JK and Karolidis P. The Reliability of GaitScan Pedal Pressure Measurements in Asymptomatic Individuals.
2. Gross MT et al (2002). JOSPT, 32, 149-157
3. Pfeffer Getal (1999). Foot Ankle International, 20, 214-221.