

Biomechanics



It has been suggested in the literature that the majority of the population will present with some form of foot or lower limb problem at some stage in their lives. Sporting activities, hereditary problems and injuries may increase the likelihood of a problem developing.

What is Biomechanics

Biomechanics is defined as:

The application of mechanical principles to the musculo-skeletal system (or muscles, ligaments and skeleton all working together as a functional unit).

Biomechanics developed in North America in 1960's & 70's, as an area of study in the under – graduate and graduate curriculum. The content of biomechanics was extracted from mechanics, an area of physics that consists of the study of motion and the effect of forces on an object. This is applied in podiatry by analysing human motion and assessing the effect of the forces from the ground when a person walks or runs.

Biomechanics is a complex area of study. By using biomechanics in podiatry, the podiatrist is able to detect and treat many of the problems that arise in the foot and lower limb. Treatments are carried out by the provision of foot orthotics. To obtain some foot orthotics, a biomechanical examination is carried out by your podiatrist.

Biomechanical Examination

A biomechanical examination is a thorough examination from your head to your toes. The podiatrist will measure certain bones and joints in your foot to determine how they are functioning. Additional measurements of the leg muscles will be taken to assess how they are also

functioning. The podiatrist will then assess your lower limbs and feet during a standing position, following an assessment of you walking. All of this information is recorded on a comprehensive examination form then a prescription is formulated. During the assessment process the podiatrist may video you walking to later assess in slow motion.



Once all the information has been recorded the podiatrist will then take some casts of your feet to capture the biomechanical problems in the casts. These are then sent to a specialised laboratory along with the prescription for the orthotics to be made.

This type of orthotic differs from the orthotics brought from chemists or shops as they are made from the measurements taken from your feet. The orthotics produced are custom-made which means that they are manufactured for your feet and your problems only.

The orthotics in shops can be used by any individual and may not help your type of foot or lower limb problem.



Non prescription orthoses (available from some chemists)

Orthoses

Orthoses come in many different shapes and sizes. The podiatrist will determine the correct orthotic for you from the prescription obtained from the biomechanical assessment. Orthoses are used to treat many conditions of the feet, legs, knees, hips and back. They function to correct the biomechanics of your feet thereby focusing on improving function and relieving you of pain. They act to improve your quality of life.



Correct control from a custom made orthotic for a patient with feet that in-roll.

Orthoses help treat:

- Back pain
- Hip pain
- Knee pain
- Ankle pain
- Flat feet / feet that are in-rolling
- Injuries from sports
- Arthritic conditions
- Heel pain
- Plantar fasciitis
- Bunions

Also many other problems arising in the foot and lower limb.

Our policy in the Walkwell Clinic is not to manufacture the orthotics ourselves. Some podiatrists have their own orthotic laboratories where they are able to provide the orthotics themselves, however we believe in having them manufactured at more specialised orthotic laboratories. Orthotic laboratories are accustomed to making orthotics all the time. Therefore, they have a very great expertise in orthotic manufacture which ensures the orthotics are as good as they can possibly be.

If you have any aches or pains in any part of your body a simple solution is only an appointment away.

Don't continue in pain; improve your quality of life.

Please feel free to call us.....

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