

Fact Sheet

Biomechanical Assessment

What is a Biomechanical Assessment?

Biomechanics is the study of physical laws governing the way our body moves and includes subjects such as physics, kinesiology and human movement.

A big part of our focus at Highett Podiatry is the analysis of the body as a complete unit and how all the joints, muscles and parts of the body relate and in particular work together. This form of assessment is called a biomechanical assessment. Given the foot is only one element of the complex body system, we need to examine the body as a holistic structure to ensure we identify the cause and can determine the most specific treatment options for our patient's root problems. By taking a holistic approach, we are better equipped to diagnose and treat conditions to ensure a long-term benefit rather than just a short-term fix.

The study of biomechanics has established an association between abnormal function in the foot and problems higher in the body. It includes clinical gait evaluation, a fundamental skill for podiatrists. We need to see the global picture of your body at work to assess the role your feet are playing in any dysfunction.

Many spinal problems start at your feet. If you feel pain in your neck, back, hips or knees, begin by checking your feet. Your feet are your foundation; they allow you to stand, walk and run. They support our weight and act as our body's main shock absorbers. Your feet contain one-quarter of your body's bones. Each foot has 26 bones and 19 muscles. Without a solid, balanced foundation the entire body becomes prone to imbalance and injury.



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Why do a Biomechanical Assessment?

The basis of a biomechanical assessment is the cause-and-effect relationship between your foot, legs and upper body.

A foot that is not functioning in alignment is not a good shock absorber. This places abnormal stresses on your spine. With every step, shock is transmitted through your body. If your feet are balanced, they can absorb much of that shock. But if they're not in balance, the shock can add strain to upper body structures such as knees, hips and the spine. Over time, your body will attempt to compensate for imbalances and can cause pain in areas such as your knees, hips, pelvis, lower back and neck.

The most effective stabilisation and realignment for your body is based on the amount of imbalance in your weight-bearing feet, and the amount of physical stress added by your occupation, lifestyle or sporting and leisure activities. Evaluating all of these factors allows your Podiatrist to prescribe the correct support level that will most effectively meet your individual needs.

When is a Biomechanical Assessment required?

- Do your feet roll in or out? Are your arches flat or high? Do you have bunions, claw toes, corns or calluses?
- Are you aware that when you walk you feel lopsided or feel excessive pressure on any particular part of your body?
- Do you have pain associated with occupational or sporting activity that is repetitive and constant?
- Do you have new or longstanding pain in the back, hip, legs, knee or feet?
- Does a particular sporting or occupation activity contribute to joint/muscle overload?

Assessment may be targeted at a particular problem or aimed at prevention.

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What does a Biomechanical Assessment involve?

Biomechanical assessments involve a number of key elements and tests that are used to obtain a clear overview of the body's movement behaviour, restrictions and possible compensations that are taking place. These include:

STATIC ASSESSMENTS

Non-weight bearing anatomical examination, muscle testing, and weight bearing lower limb posture examination.

Tests which may be performed by Highett Podiatry include:

- Assessment of resting / neutral calcaneal standing position
- Foot posture index
- Ankle, knee and hip ROM assessment

DYNAMIC ASSESSMENTS

Includes:

- Video gait analysis
- Strength / postural testing exercises



At Highett Podiatry we currently use an application called 'Coaches Eye' which can be used to assess the patient's gait and is a simply way for the patient to visualise their own foot posture.



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ALWAYS CONSULT A TRAINED PROFESSIONAL

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