Master Research Project

The biomechanical effects of a rocker shoe in patients suffering from plantar fasciitis

This project aims to establish the biomechanical effects of a model based rocker shoe on kinematic and kinetic parameters in patients with plantar fasciitis.

Plantar fasciitis is one of the most frequently occurring overuse injuries of the foot characterized by pain during walking, running and standing. Plantar fasciitis frequently develops a chronic state and negatively affects the patients quality of life, ability to perform sports as well as leisure time activities and activities of daily life. One treatment option is the rocker shoe in combination with a stiff insole. A Rocker shoe has a modified profile limiting the progression of the ground reaction forces to the forefoot during gait allowing a more proximal roll over. This modification is associated with less strain on the fascia plantaris but the exact working mechanism is unknown. In a preceding study we develop, based on theoretical concepts, a model which allows us to define the optimal rocker profile for a given patient. The current project aims to evaluate this model and establishes the biomechanical and clinical effects of the rocker shoe on kinematic and kinetic parameters in patients with plantar fasciitis.

The eligible student will recruit participants, develop a suitable experiment, take measurements with motion capture software and force plates and process the acquired data.

This project is part of a larger project. The project will start between September 2016 and January 2017. The exact content depends in part on the progress of the preceding simulation study.

If you have any further questions don't hesitate to contact Christian Greve (c.greve@umcg.nl) or Dr. Juha Hijmans (j.m.hijmans@umcg.nl)