**Participant Experimental Procedure**

**Characterisation of Plantar Loading for Foot Health**

Before the testing, participants will be instructed to measure the size of the right foot. The STAMPS test procedure will be then carried out as described below. The experiment is expected to take under 30 minutes including the time for initial fitting of the footwear (shoes with the sensing insole).

**Pre-Cleaning procedure:**

All equipment that will come into contact with the participant will be wiped with alcohol wipes and left to dry before commencing the study.

**Participant Measurements:**

A (disposable) paper-based foot measurement scale will be used to measure the participants’ foot size.

**STAMPS Test Procedure:**

1. An image of the STAMP insole will be taken prior to being worn.
2. The STAMP insole will then be placed inside a commercially available shoe (Neoprene temporary boot, manufactured by Chaneco, Northampton) for the right foot. A foam insole of the same thickness will be placed into the shoe for the left foot. Each participant will be provided a pair of disposable socks and be asked to wear the provided shoes.
   1. Participants will be asked to take 20 steps at their normal comfortable (natural) speed and step length, ensuring that 10 steps are taken on the right foot.
3. The insole will be removed and a second image taken of the insole.
4. This will be repeated whereby participants walk on a treadmill at a selected speed and inclination to test for differences between walking activities.
5. Three repeats of each activity will be conducted.

**STAMPS with Custom Orthotic Test Procedure:**

1. An image of the STAMP insole will be taken prior to being worn.
2. The STAMP insole will be overlayed across the top the custom orthotic, moulding to the contoured shape.
3. The orthotic and STAMP insole will then be placed inside a commercially available shoe (Neoprene temporary boot, manufactured by Chaneco, Northampton) for the right foot. The corresponding custom orthotic insole of the same thickness will be placed into the shoe for the left foot to ensure gait in unaffected. Each participant will be provided a pair of disposable socks and be asked to wear the provided shoes.
4. Participants will be asked to take 20 steps at their normal comfortable (natural) speed and step length, ensuring that 10 steps are taken on the right foot.
5. The insole will be removed and a second image taken of the insole.
6. Three repeats of each activity will be conducted.

**Pedar Test Procedure:**

1. A Pedar sensing insole will be placed inside the trial shoe.
2. Participants will be asked to walk 10 meters forward and then turn around to walk back to the initial position at their normal comfortable (natural) speed and step length.
3. Three repeats of this activity will be recorded.

**Post-Clean procedure:**

All equipment will be wiped with alcohol wipes and left to dry after the participant has finished the study.

The paper foot measurement scale will be disposed.

All surfaces will be wiped clean.