

Data collection guides - pedar

There are a number of factors to consider when collecting in-shoe pressure data. The following guidelines should help you to obtain meaningful data from your system. The guidelines refer to collecting data while walking rather than performing other activities although many of the recommendations would still apply.

Flooring and Walkway

If using a walkway, it should be straight and long enough to collect at least three left and right foot contacts when the individual has reached their normal walking speed. However, be aware that it may also be important to know how the shoe and foot behave when people are walking around corners (how many of us just walk in straight lines throughout the day?!). It is then worth considering walking the subject around a preset figure eight, in order that they are forced to turn around both feet, respectively. In either case, ensure that the 10m cable lies out of the way of the subject. They should never have to step over or avoid the cable. The surface of the walkway should be level, smooth and firm. Short piled carpets are acceptable but it is essential that the type of flooring for data collection remains consistent unless it is being assessed. For instance, if you are doing repeated tests with the same individual, they should always walk on the same surface.

Footwear

The type of footwear worn by the individual will influence the foot pressures. Therefore, unless this is being compared, it should remain consistent. With this in mind, you may wish to consider purchasing a range of the same shoes in different sizes to use as a control shoe. Alternatively, hospital shoes may be acceptable.

Socks and Other Coverings

The type of sock worn may influence the plantar pressures. Similarly, any other covering such as bandages or padding could alter plantar pressures. Therefore, this should also be consistent between testing sessions of the same individual. We recommend that a very thin sock or nylon hose (stocking) is worn so as to produce minimal influence upon plantar pressures. All bandaging and padding must be removed before testing.

Callus

Callus has been shown to increase peak plantar pressures and we therefore recommend that for clinical studies each foot is debrided of callus should a noticeable amount be present.

Walking Speed

Research has shown that walking speed can affect pressures but that walking speed should not be strictly controlled as this interferes with the individual's natural walking pattern. Therefore, we recommend that individuals are asked to walk at a comfortable pace. However, those with ailments may show a significant change in their ability to walk and it is therefore recommended that their walk is timed over a certain distance. A record of this time should be kept and referred to when assessing foot pressures.

Inserting and Removing Insoles into/from Footwear

Never allow the person you are testing to insert or remove the pedar insoles into/from footwear.

To insert the insoles, simply slide the insoles into the shoe without creasing them. To remove the insoles from the shoe, take hold of the insole rather than the connector.

Ask the individual to slowly insert their foot into the shoe. At this stage, you should ensure that the insole is not pushed forward or sideways in the shoe. This is enabled by holding the insole in position as the foot is inserted. Also, the strip connecting the insole to the cable should not be folded, bent or twisted. Before removing the foot from the insole, ensure that the shoe has been loosened and ask the individual to slowly remove their foot. Again, holding the insole at this stage will stop it from creasing. **Never fix or glue insoles to a surface.**

Data collection - Protocol

When the individual arrives, ask them to be seated. At this stage, the system can be arranged so that the left and right insoles are placed in the appropriate shoes to the left and right of the chair. The pedar box can be clipped or placed somewhere on the rear of the chair. In this way, the individual simply places their feet in the shoes and has the pedar box clipped to the rear of their belt or clothing. The insole cables must be fastened to the legs using the Velcro straps provided. Usually, one strap at the ankle, holding the connection strip below the insole cable connector, and one above the knee of each leg is adequate. While securing the system to the individual, they should be informed of the testing procedure. Following this, they should be given two or three practice trials to become familiar with the situation and to adopt a comfortable walking speed. When you are happy that they appear to be relaxed and walking as they normally would, you can perform the zero measurement by unloading each insole in turn. The individual may be seated or supported at this time. The zero check should be carried out immediately before data collection.

To collect data, ask the individual to start walking and collect data when they have reached a normal walking speed. At least three footstrikes should be recorded from each foot while the individual is walking at their normal pace. The individual should not be supported while they are walking as this may affect foot pressures.

If the shoes are removed or replaced or the individual is re-tested with another pair of shoes, or an orthotic is fitted or removed, etc., the zero measurement must be performed again. However, if the shoes are not removed and successive tests are taken, there is no need to repeat the zero measurement.

Finally, remove the shoes and insoles when the individual is seated.
Instructions for attaching the pedar insole adapter for use with the new pin connector double insole cable