Mechanical Pivot Points Orthotics

The position of the pivot points is essential for the orthosis' function and efficacy. You will find all relevant information about positioning the pivot points in the online tutorial. Apart from that, we recommend using the Orthosis Configurator which, based on patient data, calculates the mechanical pivot point at knee height.

In the next step Making the Negative Cast with e-Cast we demonstrate how to transfer the mechanical pivot points to the negative cast.

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Position of the Mechanical Pivot Point at Ankle Height

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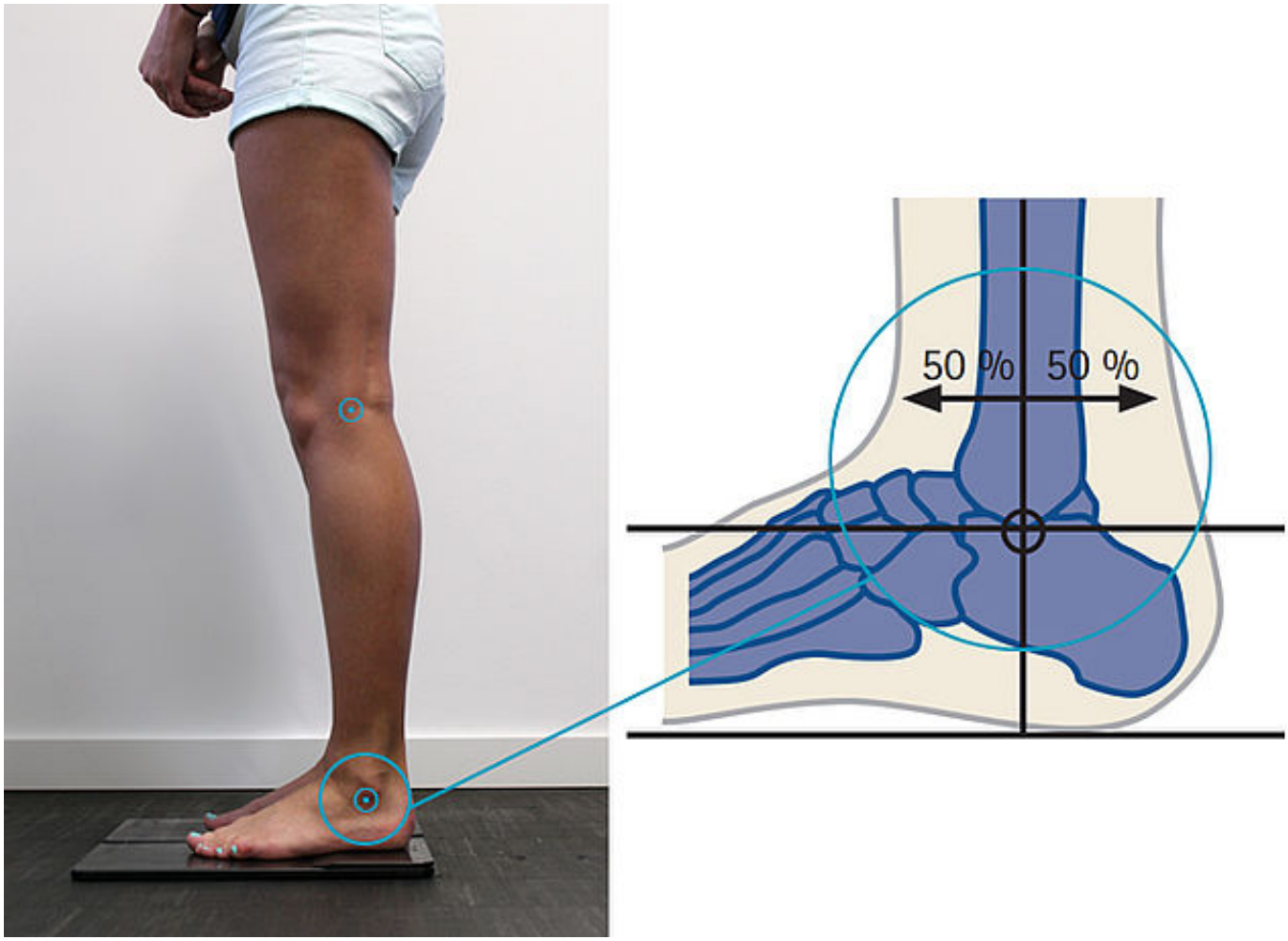

The mechanical pivot point is on the same level as the distal end of the fibula. The axis is parallel to the ground. Depending on the footwear it can be required to shift up the pivot point. However, this may result in the orthosis shifting on the patient's leg (caused by lift) and the anatomical joint being exposed to avoidable stress.

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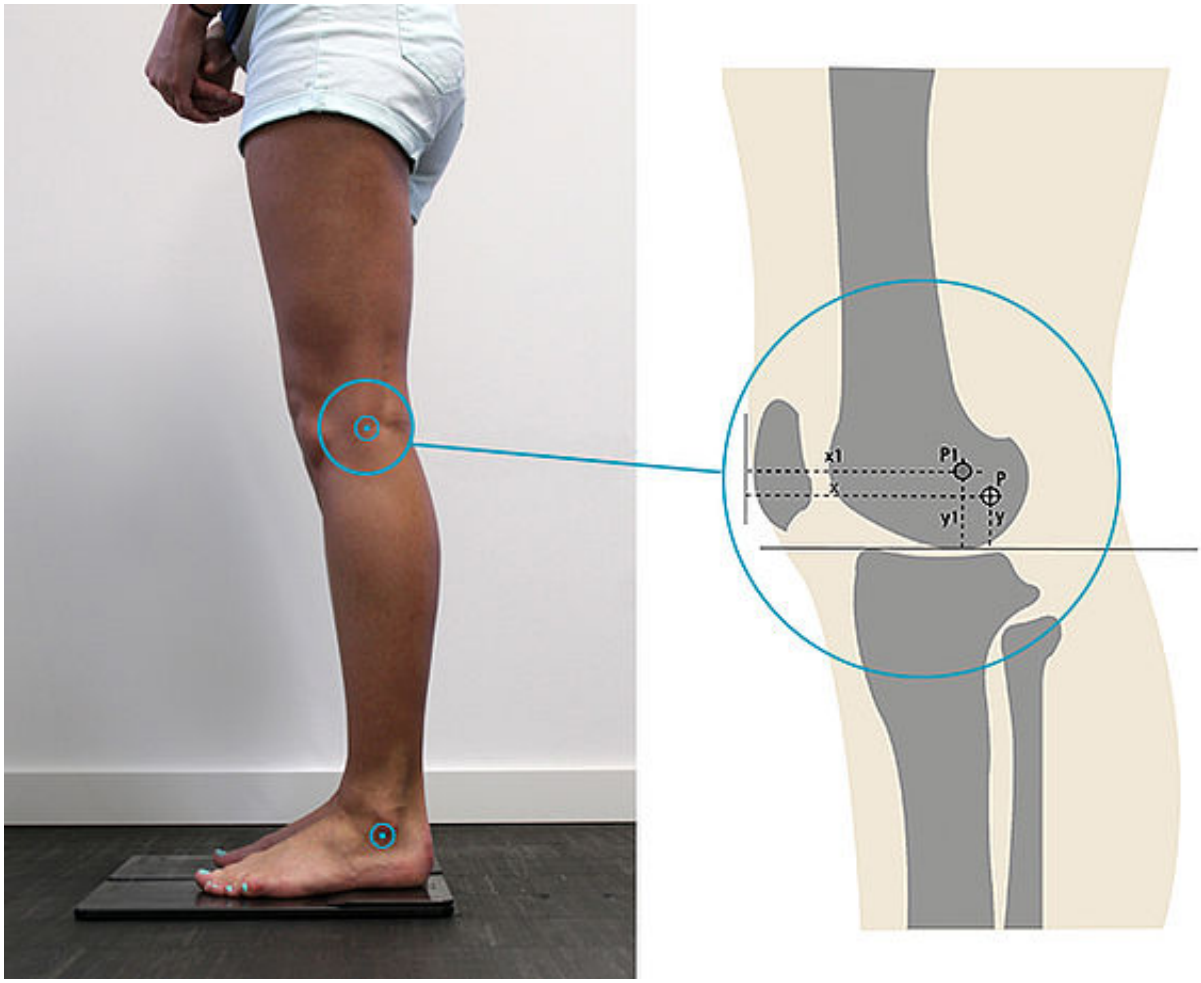

The mechanical pivot point P at knee height for orthoses for patients with paralyses is calculated by the Orthosis Configurator using the ap measurement.

Important: That is why, the ap measurement must be correctly measured and entered into the Orthosis Configurator.

When the knee and hip extending muscles work insufficiently, point P should lie behind the anatomical compromise pivot point according to Nietert in order to increase the mechanical knee control.

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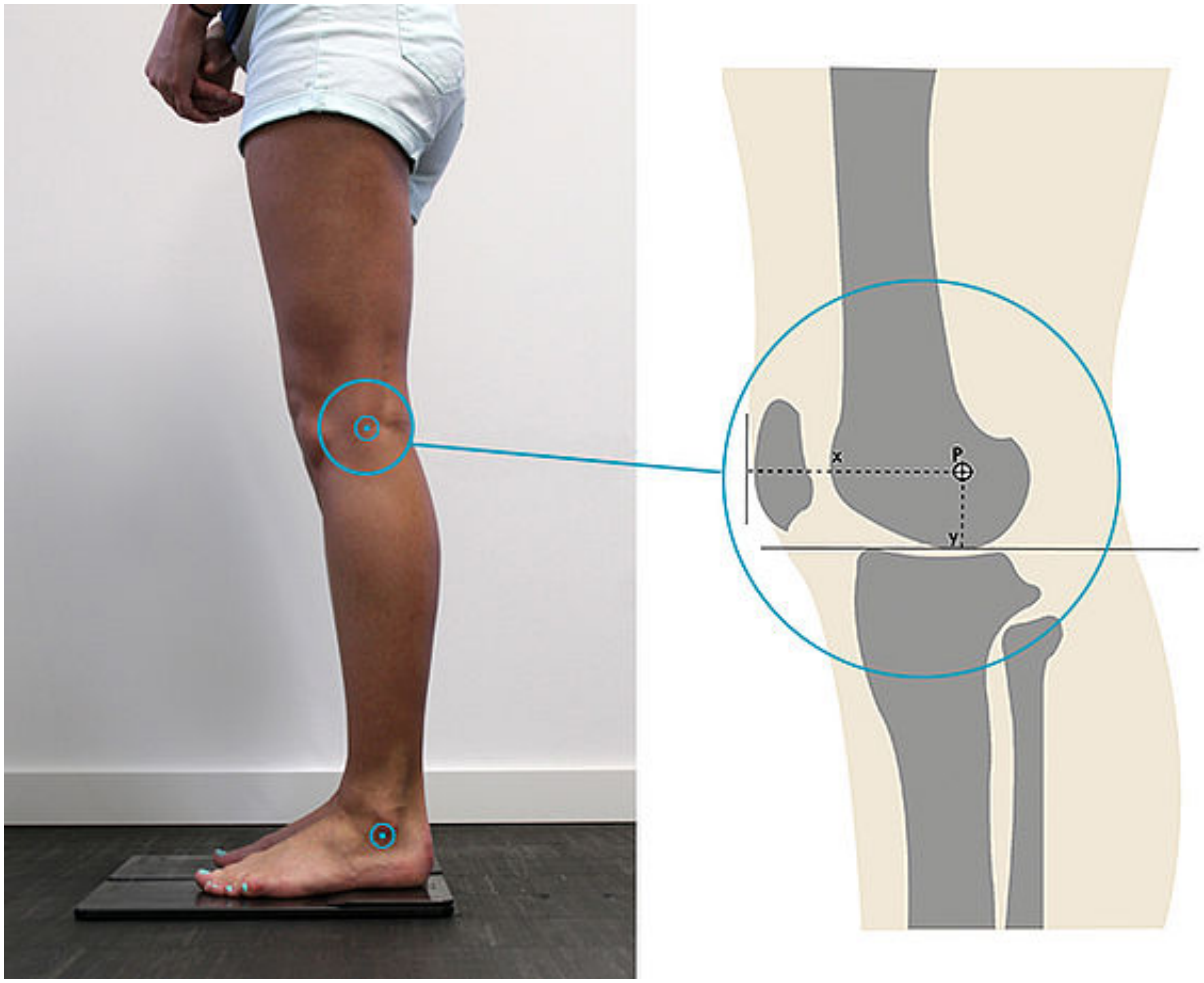

The mechanical pivot point P at knee height for knee orthoses is calculated by the Orthosis Configurator using the ap measurement.

Important: That is why, the ap measurement must be correctly measured and entered into the Orthosis Configurator.

If the muscles work properly, point P should be exactly located on the anatomical compromise pivot point according to Nietert.

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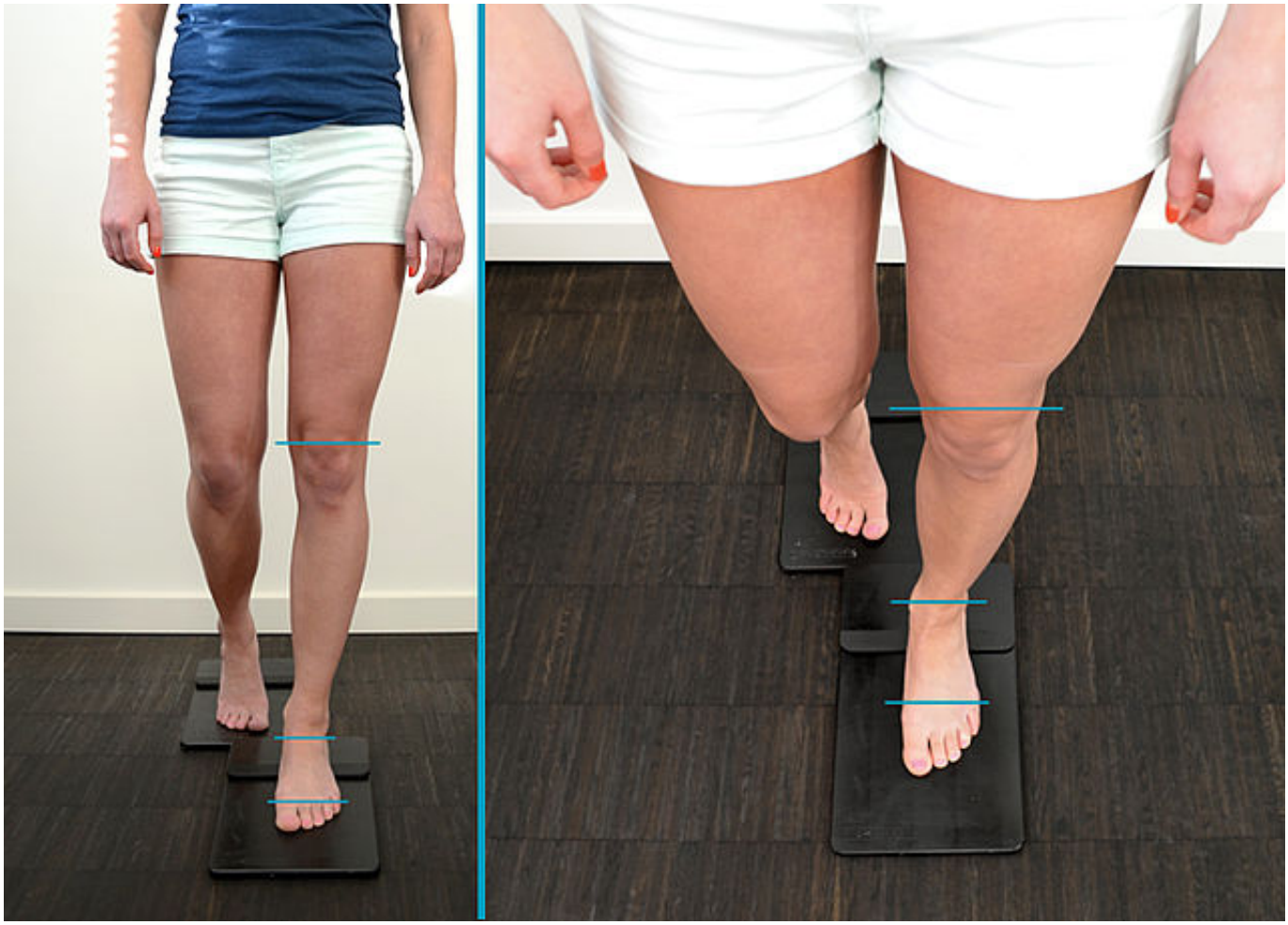

All axes need to be parallel to each other and rectangular to the direction of motion.

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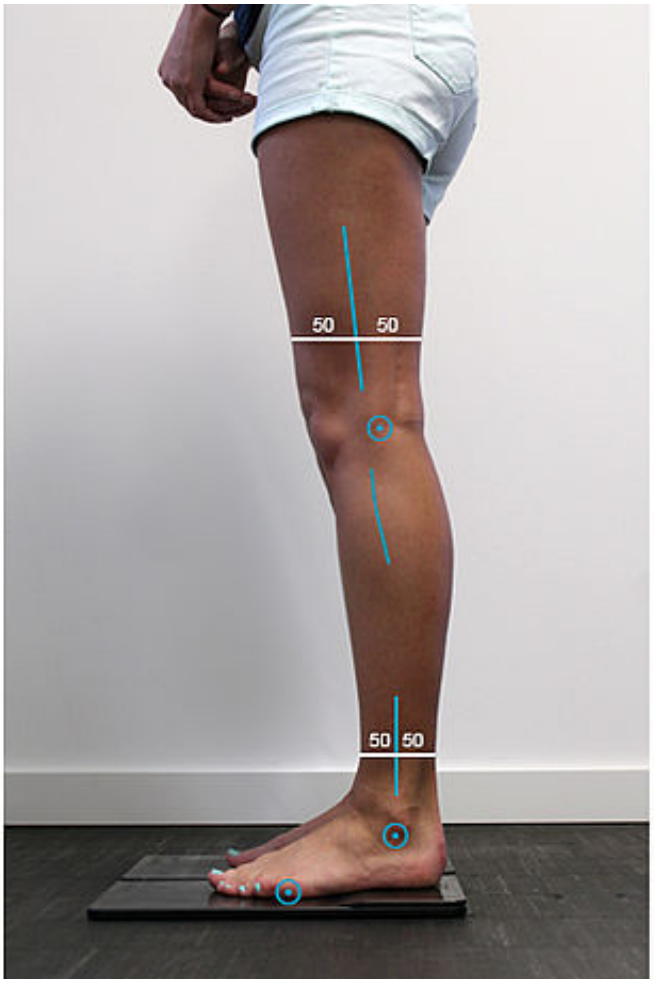

When the pivot point is placed like this, the course of the system side bars is - due to the integrated posterior offset of the knee joints - at ca. 50%. Nonetheless, the side bar alignment is not the crucial factor for stability when standing and walking, but the position of the mechanical pivot points is.

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