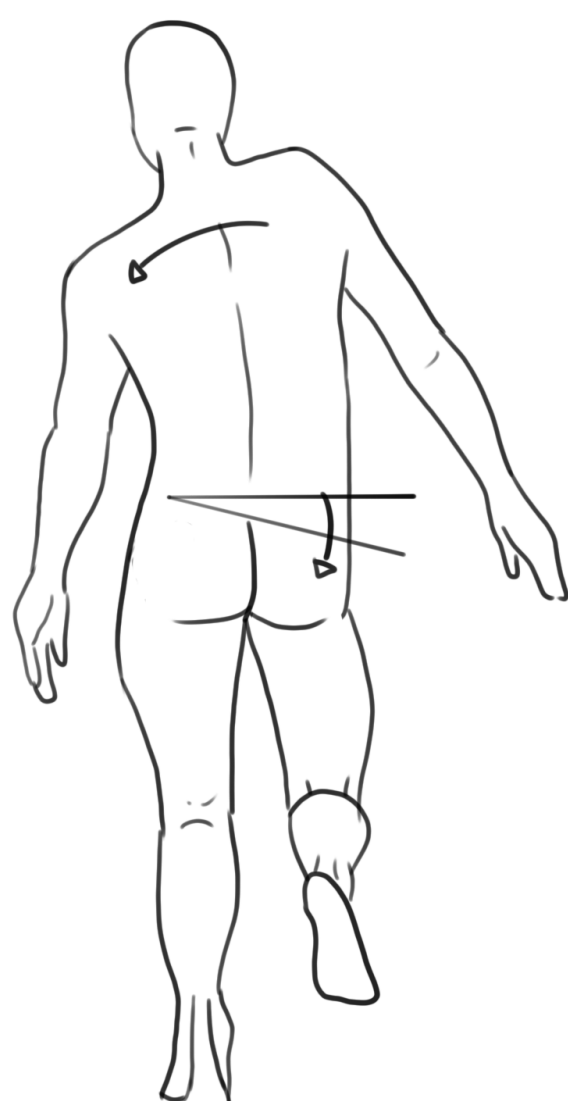


A HIP-BRACE FOR INDEPENDENCE

A user-centered design of a hip-brace to reduce Trendelenburg gait



Trendelenburg gait is an abnormal gait that causes the pelvis to tilt downward during walking. The pelvis tilts downward above the unsupported leg, which is in the swing phase.

In this thesis a user-centered design of hip-brace has been developed that will keep the pelvis from dropping. By starting with a mechanical principle that creates an abduction moment and translating it to requirements for the user and requirements regarding application to the human body, an integrated design was created that handled many aspects.

The hip brace is designed to provide support, ease of use, and comfort. The ease of use is provided by the intuitive and simple process of attaching, a process that has been validated through extensive user research. Various pads provide support to the right parts of the body, providing comfort. The stiff structure provides the necessary support to prevent the hip from dropping while still allowing for some flexibility when walking.



Ease of use

Comfortable

Providing support



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