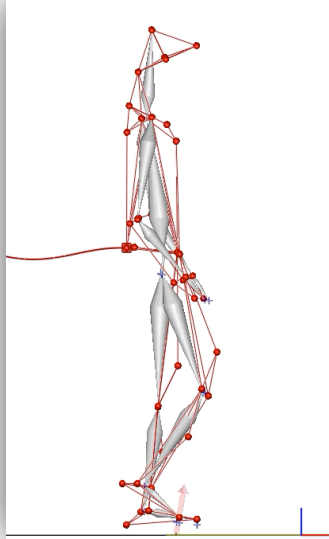


TRUNK LEAN/POSITION & FOOT LOADING DURING STANCE

Trunk lean backward

~ -5°

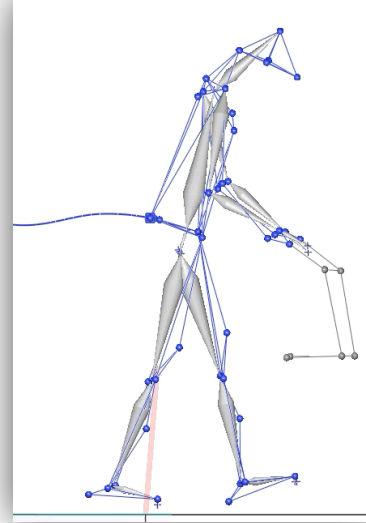


Weight distribution under foot approx. 50% between L and R foot during initial stance

Overground walking without assistive device (OW)

Trunk lean forward ~

+12°

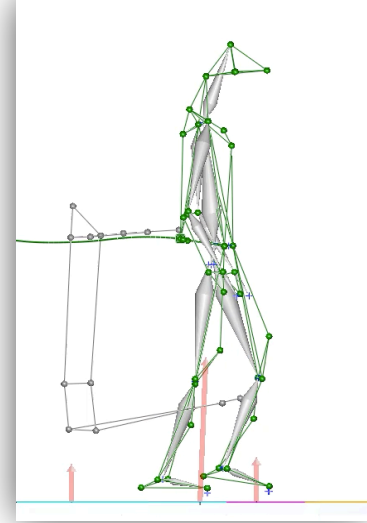


Foot loading much higher on leading foot compared to trailing foot during initial stance due to forward trunk lean

Overground walking with walker (OWW)

Trunk lean backward

~ -5°



Weight distribution under foot approx. 50% between L and R foot during initial stance similar to normal walking without device

Overground walking with ZEEN prototype (OWZ)

Parameters	Overground Walking without device (OW)	Overground Walking with Walker (OWW)	Overground Walking with ZEEN (OWZ)	Observations
Walking speed (m/s)	1.11	1.04	1.14	<i>Approx. 10% increase in walking speed with ZEEN compared to walker (OWW)</i>
Trunk posture <i>Lean Forward(+)/ Backward(-)</i>	-5° from vertical	+12° from vertical	-5° from vertical	<i>Participant maintained an upright posture with the ZEEN similar to overground walking without device (OW)</i>
Bilateral Weight distribution during initiation of stance	Approx. 50% on both limbs	Loading on leading limb much higher than trailing limb	Approx. 50% on both limbs	<i>Due to the upright posture in the ZEEN, the weight under each limb is equally distributed similar to walking without device (OW)</i>
Foot loading during initiation of stance	Normal foot loading forces with ~100% of body weight during initial stance and push-off	Loading forces are much higher during initial stance	Loading force magnitudes are much lower compared to OW and OWW	<i>In the ZEEN, some amount of the bodyweight is supported by the device (saddle) and hence the loading force magnitudes are much lower. However, the force profiles during walking are similar to walking without device (OW)</i>