

Supplementary Material 1

Table S1. OPT and Xsens time series marker trajectories used for PCA.

Segment	OPT Marker	Xsens Marker
Head	Back of head	pBackOfHead
	Right side of head	pRightAuricularis
	Left side of head	pLeftAuricularis
Torso	Sternal Notch	pIJ
	Xyphoid process	pPX
	C7	pC7SpinalProcess
Left Upper Arm	Left acromion	pLeftAcromion
	Left lateral epicondyle of Humerus	pLeftArmLatEpicondyle
	Left medial epicondyle of Humerus	pLeftArmMedEpicondyle
Left Forearm	Left radial styloid process	pLeftRadialStyloid
	Left ulnar styloid process	pLeftUlnarStyloid
Right Upper Arm	Right acromion	pRightAcromion
	Right lateral epicondyle of Humerus	pRightArmLatEpicondyle
	Right medial epicondyle of Humerus	pRightArmMedEpicondyle
Right Forearm	Right radial styloid process	pRightRadialStyloid
	Right ulnar styloid process	pRightUlnarStyloid
Pelvis	Left ASIS	pLeftASI
	Left iliac crest	pLeftCSI
	Right ASIS	pRightASI
	Right iliac crest	pRightCSI
Left Thigh	Left greater trochanter	pLeftGreaterTrochanter
	Left lateral epicondyle of the femur	pLeftKneeLatEpicondyle
	Left medial epicondyle of the femur	pLeftKneeMedEpicondyle
Left Shank	Left lateral malleolus	pLeftLatMalleolus
	Left medial malleolus	pLeftMedMalleolus
Right Thigh	Right greater trochanter	pRightGreaterTrochanter
	Right lateral epicondyle of the femur	pRightKneeLatEpicondyle
	Right medial epicondyle of the femur	pRightKneeMedEpicondyle
Right Shank	Right lateral malleolus	pRightLatMalleolus
	Right medial malleolus	pRightMedMalleolus

Table S2. OPT and Xsens tracking markers used for Visual 3D biomechanical model.

Segment	OPT Tracking markers	Xsens Tracking Markers
Head	Back of head	pTopOfHead
	Front of head	pRightAuricularis
	Left side of head	pLeftAuricularis
	Right side of head	pBackOfHead
Left Upper Arm	4 marker cluster placed over the lateral side of the left humerus	pLeftAcromion pLeftArmLatEpicondyle pLeftArmMedEpicondyle
Left Forearm	4 marker cluster placed over the dorsum of the left radius and ulna	pLeftArmLatEpicondyle pLeftArmMedEpicondyle pLeftUlnarStyloid pLeftRadialStyloid
Right Upper Arm	4 marker cluster placed over the lateral side of the right humerus	pRightAcromion pRightArmLatEpicondyle pRightArmMedEpicondyle
Right Forearm	4 marker cluster placed over the dorsum of the right radius and ulna	pRightArmLatEpicondyle pRightArmMedEpicondyle pRightUlnarStyloid pRightRadialStyloid
Thorax/Ab	4 marker cluster placed over the T ₁₀ – T ₁₂ vertebra	pPX pIJ pC7SpinalProcess pT12SpinalProcess pT4SpinalProcess pT8SpinalProcess pL3SpinalProcess pL5SpinalProcess
Pelvis	4 marker cluster placed over the sacrum	pHipOrigin pLeftASI pLeftCSI pLeftIschialTub pRightASI pRightCSI pRightIschialTub pSacrum
Left Thigh	4 marker cluster placed over the lateral side of the left femur	pLeftGreaterTrochanter pLeftKneeLatEpicondyle pLeftKneeMedEpicondyle pLeftPatella
Left Shank	4 marker cluster placed over the lateral side of the left fibula	pLeftLatMalleolus pLeftMedMalleolus pLeftTibialTub
Left Foot	Left heel 3 marker cluster placed over the dorsum of the left foot	pLeftFifthMetatarsal pLeftFirstMetatarsal pLeftHeelCenter pLeftHeelFoot pLeftPivotFoot pLeftToe
Right Thigh	4 marker cluster placed over the lateral side of the right femur	pRightGreaterTrochanter pRightKneeLatEpicondyle pRightKneeMedEpicondyle pRightPatella
Right Shank	4 marker cluster placed over the lateral side of the right fibula	pRightLatMalleolus pRightMedMalleolus pRightTibialTub

Right Foot	<p data-bbox="679 271 791 300">Right heel</p> <p data-bbox="432 304 1038 331">3 marker cluster placed over the dorsum of the right foot</p>	<p data-bbox="1107 203 1347 232">pRightFifthMetatarsal</p> <p data-bbox="1107 237 1347 266">pRightFirstMetatarsal</p> <p data-bbox="1126 271 1327 300">pRightHeelCenter</p> <p data-bbox="1137 304 1316 333">pRightHeelFoot</p> <p data-bbox="1137 338 1316 367">pRightPivotFoot</p> <p data-bbox="1166 371 1287 400">pRightToe</p>
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