

Marker set-up of the Optotrak system

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Validation of foot placement locations from ankle data of a Kinect v2 sensor. Sensors.

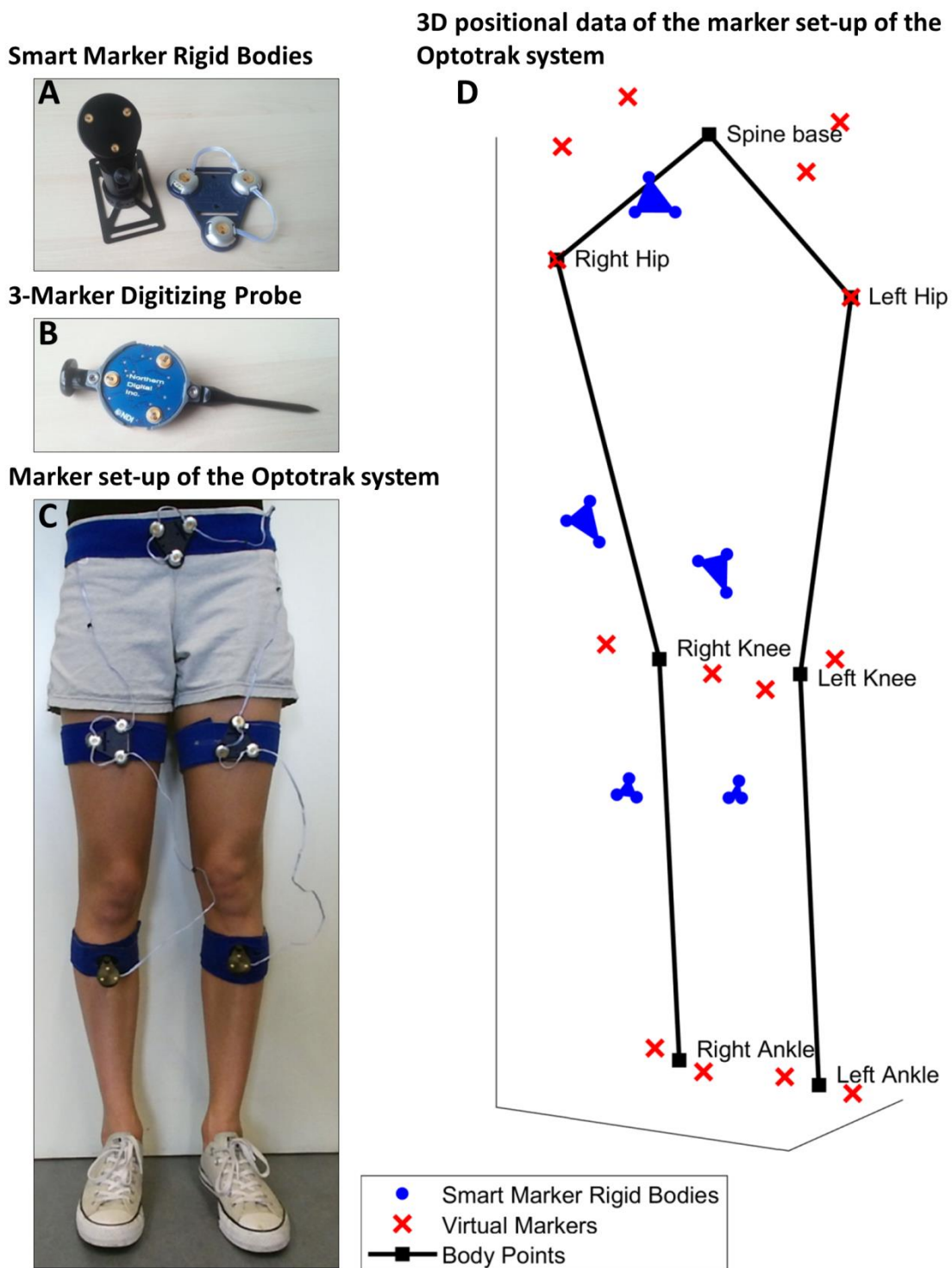


Figure 1. A) Smart Marker Rigid Bodies of the Optotrak system. B) 3-marker digitizing probe for assigning virtual markers to the Smart Marker Rigid Bodies. C) Overview of the marker set-up of the Optotrak system. D) Schematic overview of the 3D positional data of the marker set-up of the Optotrak system. Smart Marker Rigid Bodies (presented in blue) were attached to the body segments of the

lower abdomen, upper legs, and lower legs. Virtual markers (red crosses) were assigned to these rigid bodies using a 3-marker digitizing probe. The positions of the virtual markers were 14 anatomical landmarks chosen to match the body points of the Optotrak system with the body points of the Kinect system (Table 1). The positions of these virtual markers were averaged in all directions for each sample to obtain the positions of seven matched body points (Table 1; black squares).

Table 1. Overview of Optotrak marker data for deriving body points resembling Kinect body points.

Kinect body points	Smart Marker Rigid Body position	Virtual marker position
Spine base	Lower abdomen	Right and left anterior superior and posterior superior iliac spine
Hips	Upper legs	Trochanter major
Knees	Upper legs	Medial and lateral condyles
Ankles	Lower legs	Medial and lateral malleoli