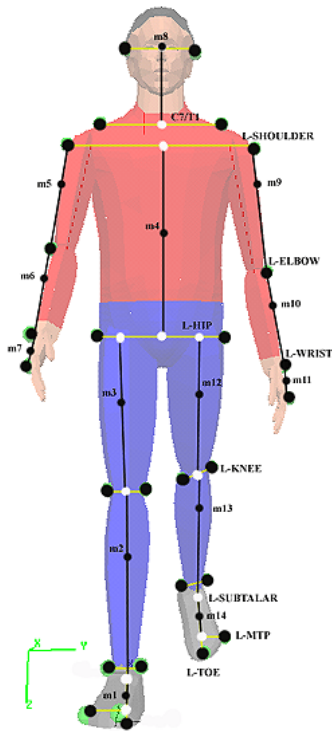


## Electronic Addendum 1

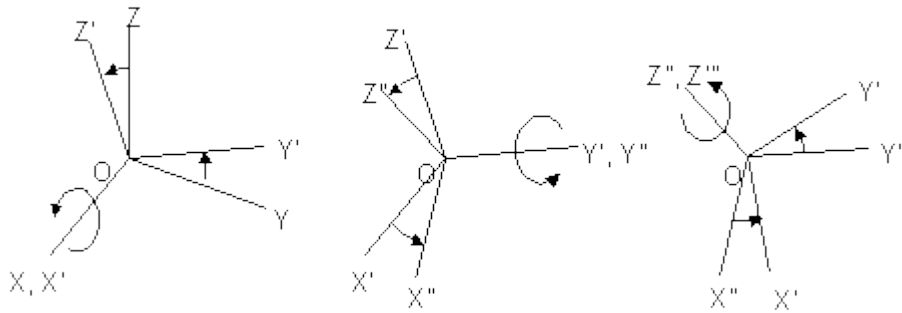
### Biomechanical model construction



Marker configuration was based on the biomechanical model from previously published research by Lockhart in 2002. This model, which was illustrated below, also contains the definition of COM and joint center locations. Specifically, ankle joint center was defined as the midpoint between lateral and medial malleolus markers. Knee joint center was defined as the midpoint between lateral and medial condyle markers. Hip joint center was defined as the 37% close to the proximal great trochanter marker. Segment COM locations were adapted from Dempster, 1955. Specifically, foot COM was located 42.9% to heel marker, 57.1% to toe marker. Shank COM was located 43.3% to knee joint center, 56.7% to ankle joint center. Thigh COM was located 43.3% to hip joint center, 56.7% to knee joint center.

## Electronic Addendum 2

### Illustration of rotation sequence



Illustrate three successive rotations to change the orientation of a particular local coordinate system from the global coordinate system to the  $X''Y''Z''$  system, which is the final xyz system. The intermediate coordinate systems are denoted as  $X'Y'Z'$  system and  $X''Y''Z''$  system, respectively. (Kwon, 2000)