Supplement Fig. 1. Kinematics for the three degrees of freedom at the shoulder (elevation plane, elevation, axial rotation) during the performance of axilla wash for participant RF03. Kinematic trajectories calculated by the inverse kinematics (IK) algorithm are compared with the predicted kinematics from the computed muscle control (CMC) algorithm during dynamic simulations of movement. In this simulation gimbal lock occurred, in which two humeral axes were approximately coincident creating an indeterminate system, rendering it difficult for the CMC algorithm to track the kinematics. This is noted by the temporal shift in the graphs for the CMC algorithm compared to the graphs for IK, although salient features of each degree of freedom are maintained.