



Supplemental Figure 1: Sensory Organization Test (SOT) raw data tracings and center of gravity (COG) paths at baseline pre-intervention (left) and post-intervention (right). Tracings illustrate postural sway during firm surface conditions (C1–C3) and sway-referenced moving platform conditions (C4–C6). Under stable conditions (C1–C3), sway is expected to be minimal, increasing during sway-referenced conditions. The COGx (thin black line) represents mediolateral sway (positive = right, negative = left), and the COGy (thick green line) represents anteroposterior sway (positive = forward, negative = backward). At baseline pre-intervention, the patient lost balance within the first few seconds in all sway-referenced conditions (C4–C6), falling forward due to an inability to control anterior COG displacement as the platform moved in response to sway. Post-

intervention, although large anteroposterior sway persisted, the patient was able to maintain balance and recover from forward COG displacement. Across conditions, the COG remained biased anterior to neutral, indicating a persistent forward postural set that may increase susceptibility to trip-like falls or the inability to recover from posteriorly directed slip-like falls.