

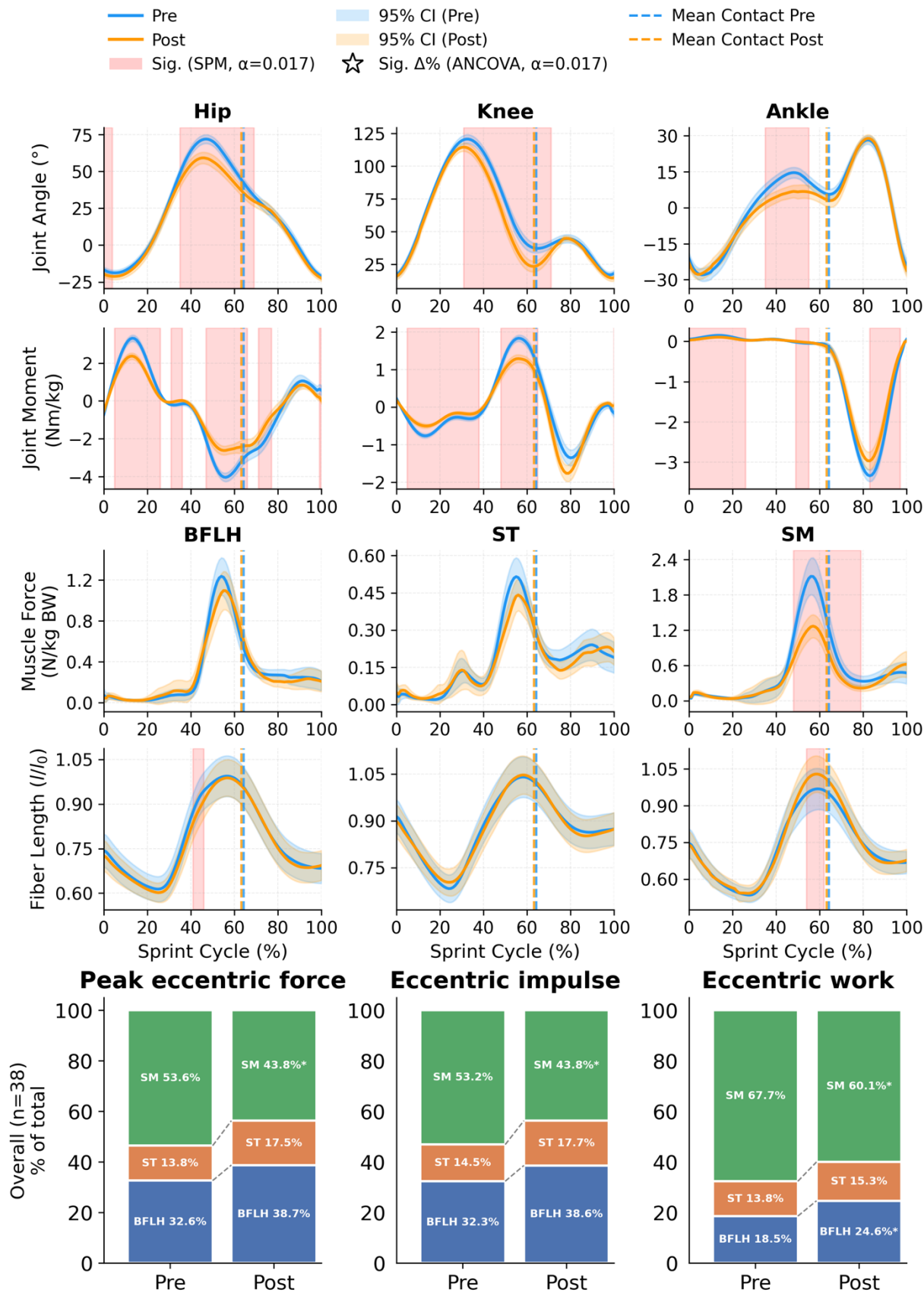


Figure 1. Ensemble averages of lower limb kinematics, kinetics, and hamstring muscle properties, and eccentric load-sharing pre- and post-repeated sprints fatigue protocol

Row 1: ensemble averages of hip, knee, and ankle joint angles ($^{\circ}$) during a sprint cycle pre- (solid blue) and post- (solid orange) repeated sprints fatigue protocol. Row 2: ensemble averages of hip, knee, and ankle internal net joint moments (Nm/kg). Row 3: ensemble averages of biceps femoris long head (BFLH), semitendinosus (ST), and semimembranosus (SM) muscle forces normalized to body weight (N/kg BW). Row 4: ensemble averages of normalized fiber lengths (l/l_0) of BFLH, ST, and SM. For Rows 1–4, blue and orange shaded regions indicate the 95% confidence intervals, vertical dashed lines denote mean foot contact at pre (blue) and post (orange) protocol, and red shaded regions denote statistically significant differences (Statistical Parametric Mapping; Bonferroni-corrected $\alpha = 0.017$). All waveform data were normalized to 101 points (0–100%), with 0% being foot strike and 100% being foot off. Row 5: mean percentage contribution of BFLH, ST, and SM to total hamstring peak eccentric fiber force (left), eccentric impulse (center), and eccentric work (right), pre and post the fatigue protocol. Dashed lines trace cumulative muscle boundaries between pre and post bars to highlight shifts in relative load sharing. Asterisks indicate significant differences (ANCOVA; Bonferroni-corrected $p < 0.017$). Eccentric metrics were computed within the second negative knee joint-power phase (knee joint power < 0).