Preparatory activity links frontal eye field activity with small amplitude motor unit recruitment of neck muscles during gaze planning

(SUPPLEMENTARY FIGURES AND LEGENDS)

SUPPLEMENTARY FIGURES AND LEGENDS

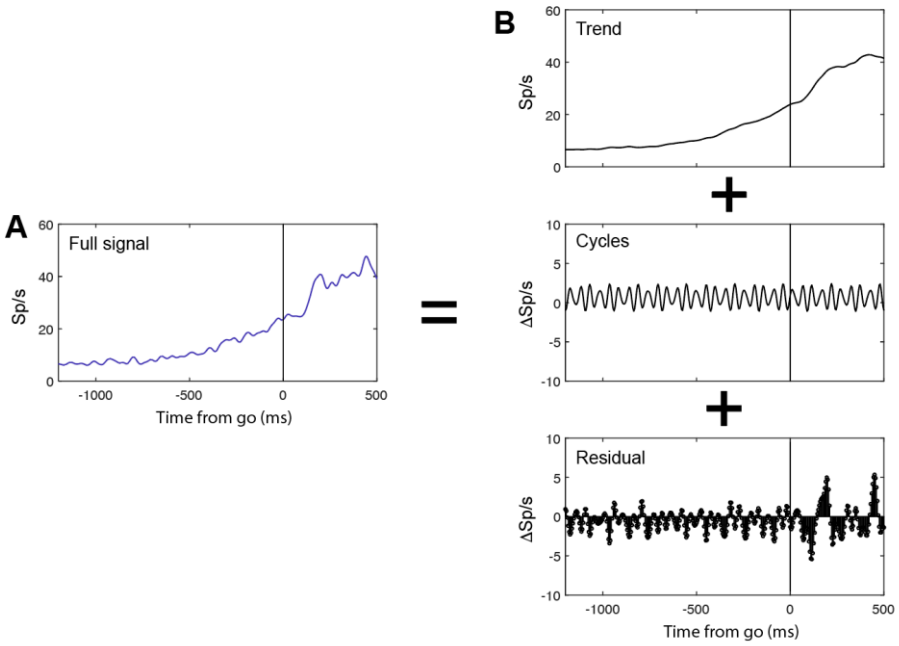

Figure S1: Trend, cycles and residual.

A. Single unit activity (blue) aligned on go cue, for an upcoming saccade towards in-RF, for a representative motor unit recorded from neck muscle.

B. Activity decomposed into individual components using an additive time series decomposition model - trend, cycles and residuals.

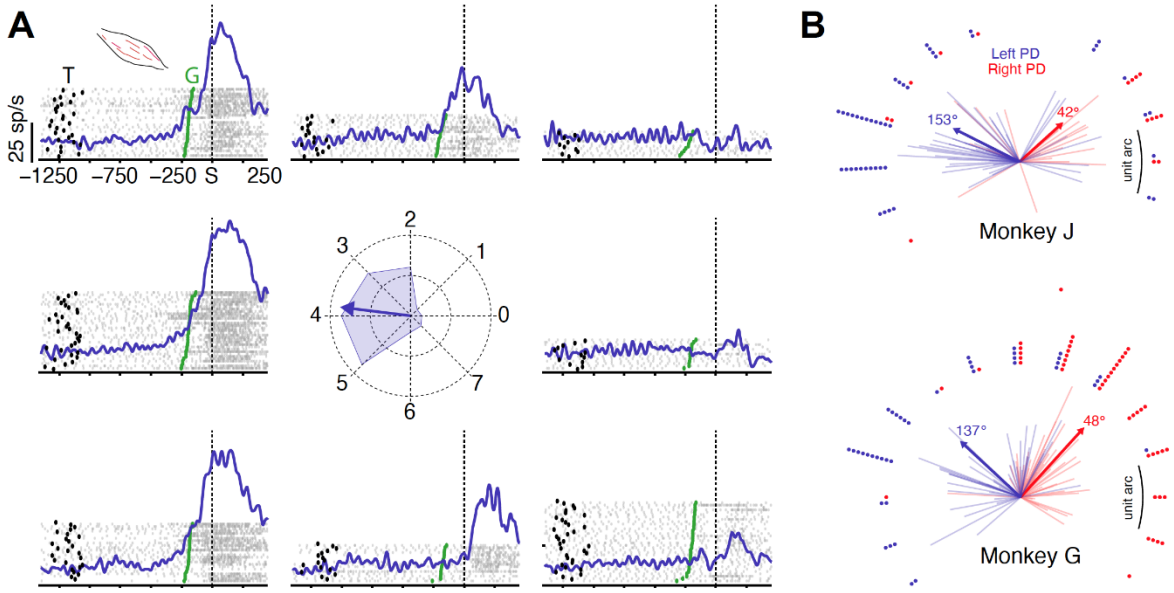

Figure S2: Motor units are spatially tuned.

A. EMG responses (blue) aligned on saccade onset, for eight different target locations, of a representative motor unit recorded from the neck muscle. Each gray marker represents a spike. Thick black markers are time of target onsets. Each spike train represents the response on a single trial and the trials were sorted on the time of go cue (green markers).

B. The plot at the center represents the preferred direction for the population (thick lines) and each motor unit (thin lines) that was recorded from left (blue) and right (red) neck muscles for monkey J (lighter shade) and monkey G (darker shade), respectively.

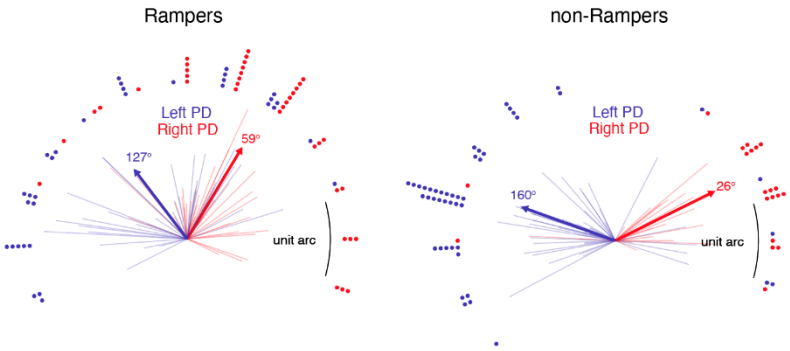

Figure S3: Preferred directions for ramper and non-ramper motor units.

A. The plot shows the preferred direction for the population (thick lines) and each motor unit (thin lines) that was recorded from left (blue) and right (red) neck muscles for rampers (left panel) and nn-rampers (right panel) from both the monkeys.

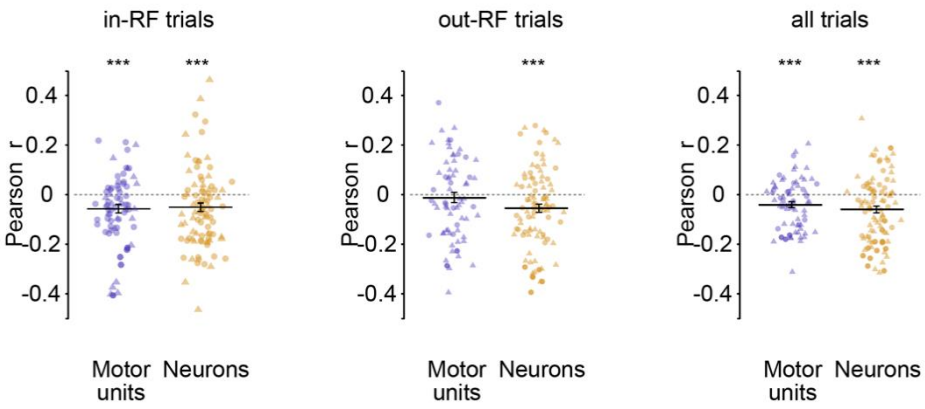

Figure S4: Temporal information leaking across different spatial conditions for ramper motor units.

Left: Same as **Fig 4D**. Middle: Same as **Fig 4D** but for out-RF trials. Right: Same as **Fig 4D** but for all trials

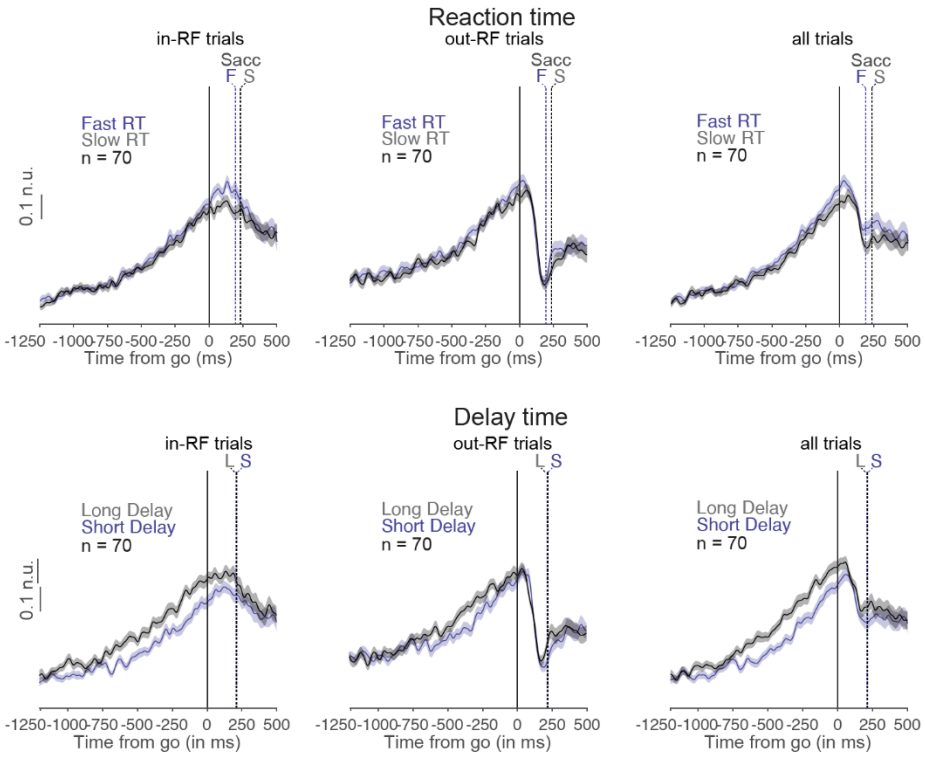

Figure S5: Accumulator models for ramper motor units across different spatial conditions.

Top row: Reaction time. Population response of all motor units for in-RF trials (left; same as **Fig 5A right panel**) out-RF trials (middle) and all trials (right), aligned on the go cue for fast (purple) and slow (gray) reaction times. Vertical broken lines in the right panel denote the time of saccade. The solid line indicates the mean firing rate and the shading indicate mean ±SEM

Bottom row: Delay time. Population response of all motor units for in-RF trials (left; same as **Fig 6A right panel**) out-RF trials (middle) and all trials (right), aligned on the go cue for short (purple) and long (gray) delay times. Vertical broken lines in the right panel denote the time of saccade. The solid line indicates the mean firing rate and the shading indicate mean ±SEM