

Figure 2-figure supplement 1

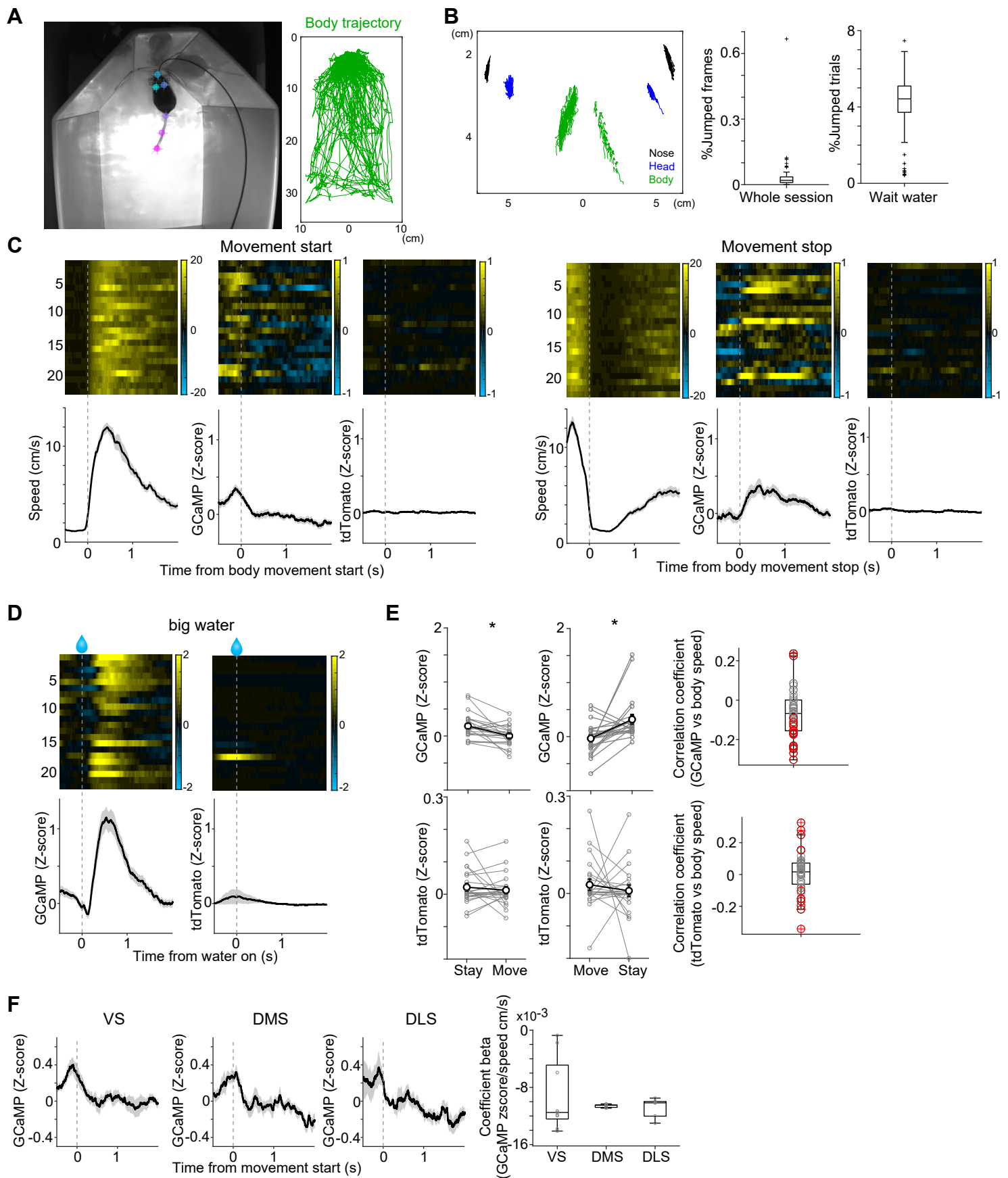


Figure 2-figure supplement 1. Dopamine axon activity outside of the task (A)

Labeling of body parts by DeepLabCut. (B) Verification of tracking. Disconnected tracking was detected by 5.5cm displacement with one frame (Whole session). Nose tracking was verified in frames when a mouse stays at a water port for <1s (Wait water). Trials when the tracked nose positions stayed within 2cm were used for further analyses in later sections. n=43 videos. (C) GCaMP and tdTom signals when a mouse starts or stops movement (>3cm/s) for >0.5s (mean \pm SEM, n = 22 animals) outside of the task. (D) Responses to big water in the same videos as C are shown for comparison. (E) Left, GCaMP signals were decreased when a mouse moves ($t(21) = 3.4$, $p=2.3 \times 10^{-3}$ for start; $t(21) = 3.0$, $p=5.6 \times 10^{-3}$ for stop, n = 22 animals, paired t-test), whereas tdTom did not show consistent modulation ($t(21) = 0.6$, $p=0.51$ for start; $t(21) = -0.6$, $p=0.54$ for stop, n = 22 animals, paired t-test). Right, Pearson's correlation coefficients of GCaMP signals and body speed of random frames (5000 frames per video) are slightly but significantly negative ($t(42) = -3.2$, $p=0.0021$, n = 43 videos, one sample t-test). Whereas tdTom and body speed did not show consistent correlation ($t(42) = 0.5$, $p=0.56$, n = 43 videos, one sample t-test), signals in each video showed significant correlation, indicating motion artifacts in recording. Red circle indicates significant correlation coefficient for each video. (F) GCaMP signals in all 3 striatal areas showed similar modulation by movement ($F(2,19) = 0.35$, $p=0.71$, ANOVA).