

SUPPLEMENTARY INFORMATION

Behavioral heterogeneity in host-seeking and post-feeding suppression among disease vector mosquitoes

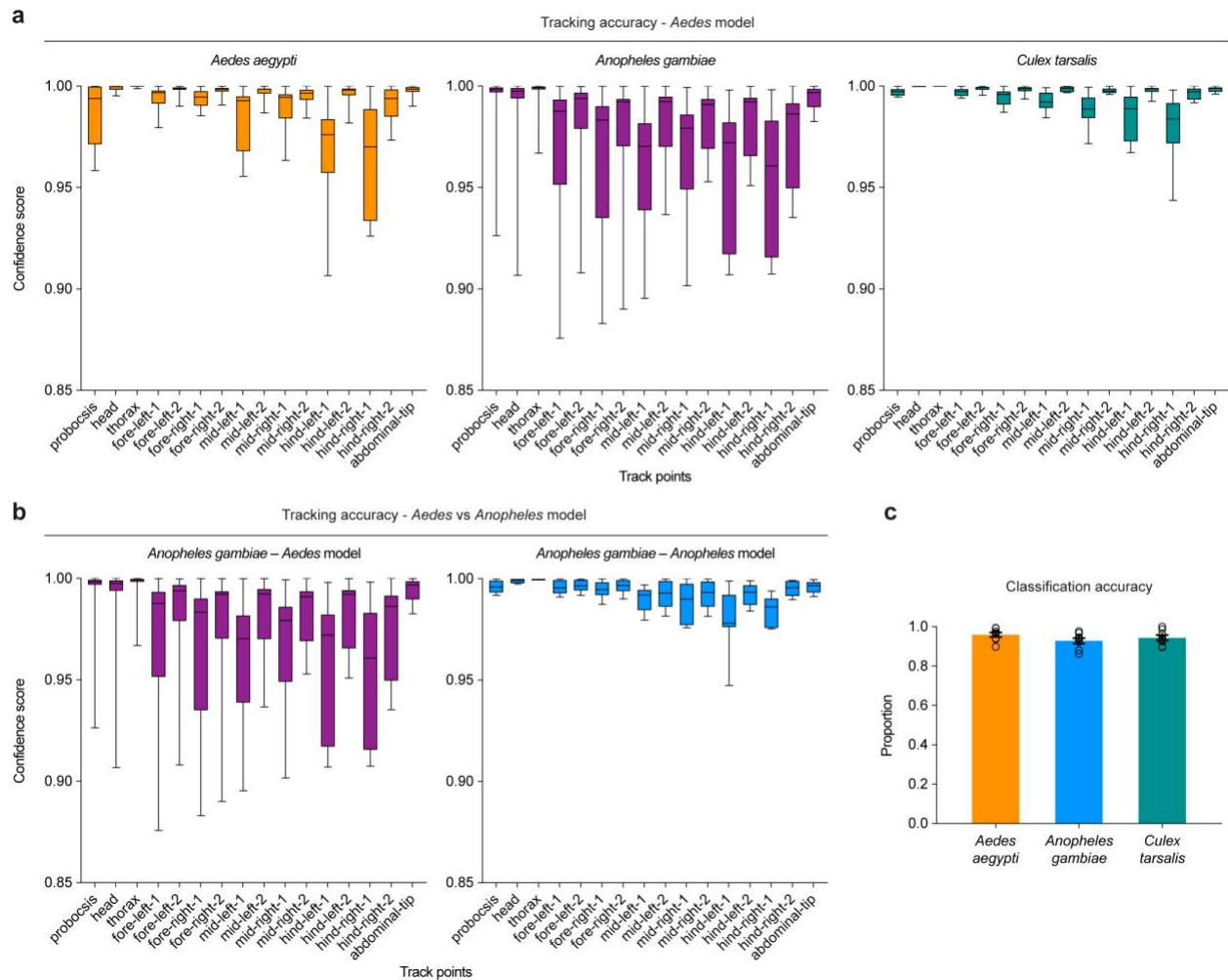
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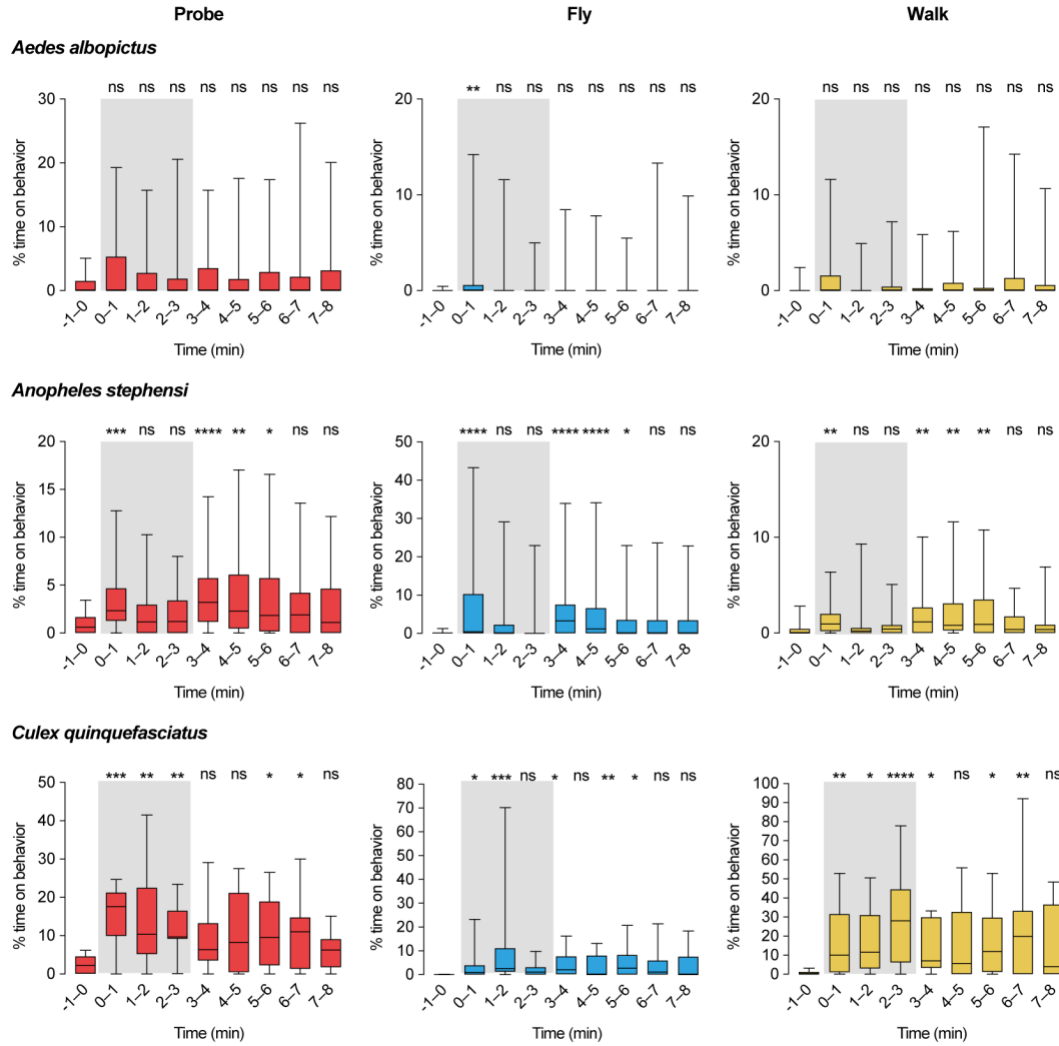
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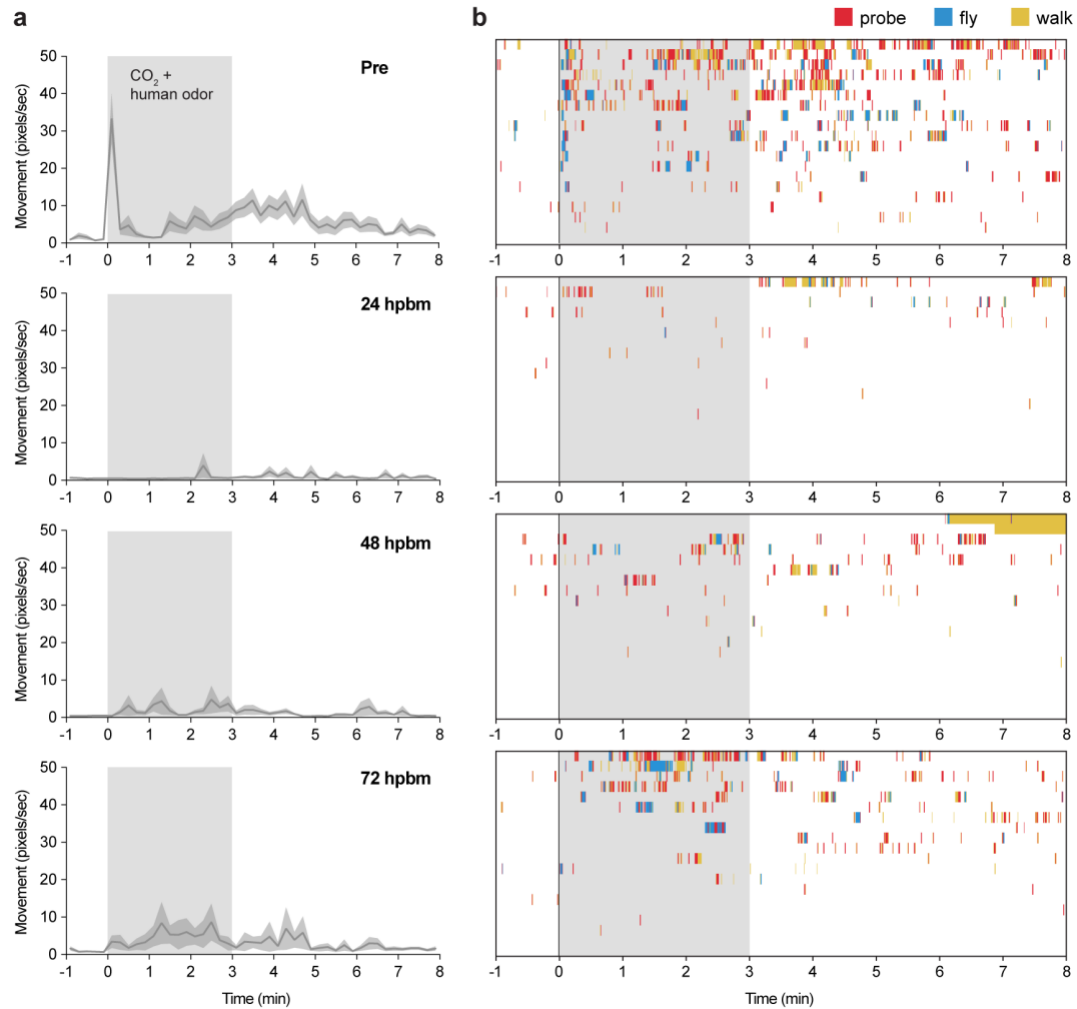


Supplementary Figure 1 | Performance metrics of pose estimation and classification.

a Average confidence score (0–1; $N = 8$ females) for each predicted key point from the *Aedes* model. Scores are calculated for every video frame from model-generated heatmaps, then averaged per key point. These values represent the model's certainty in body-part localization, where higher values indicate more reliable tracking. Box: median and IQR, whiskers: 5–95 percentile. **b** Comparison of average confidence scores obtained from the original *Aedes* and the new *Anopheles* models in *Anopheles gambiae* ($N = 8$ females). Box: median and IQR, whiskers: 5–95 percentile. **c** Example pose classification accuracy between manual annotation and the trained classifier (VAME) ($N = 8$ females). Mean and SEM. Raw data is provided in Supplementary Data 1.

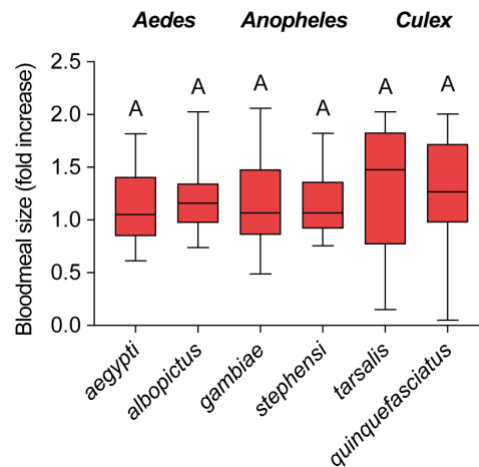


Supplementary Figure 2 | Analysis of host-seeking behavior in *Aedes albopictus*, *Anopheles stephensi*, and *Culex quinquefasciatus*. Percent of time spent on each behavior. N = 55, 43, and 15, respectively. The gray shaded bar in group activity plots represents the period of host cue stimulation. Box: median and IQR, whiskers: 5–95 percentile. Kruskal-Wallis test with Dunn’s multiple comparisons test using -1–0 min as control. *P<0.05; **P<0.01; ***P < 0.001; ****P < 0.0001; P > 0.05: not significant (ns). Raw data and statistical test details are provided in Supplementary Data 1.



Supplementary Figure 3 | Detailed activity analysis of host-seeking suppression in *Aedes aegypti*.

a Average movement of females in response to host cues. (N = 43, 23, 22, and 21 for nonfed, 24, 48, and 72 h post-blood-meal timepoints). Mean and SEM. **b** Activity traces of individual females after blood feeding. (20 representative actograms were randomly selected for visual clarity). Raw data is provided in Supplementary Data 1.



Supplementary Figure 4 | Size of blood-meals ingested by female mosquitoes using an artificial blood-feeder Data is shown as fold increase in body weight. N = 24, 30, 23, 37, 27, and 20 for *Aedes aegypti*, *Aedes albopictus*, *Anopheles gambiae*, *Anopheles stephensi*, *Culex tarsalis*, and *Culex quinquefasciatus*, respectively. Box: median and IQR, whiskers: 5–95 percentile. Kruskal-Wallis test with Dunn's multiple comparisons test. Columns are not significantly different from each other $P > 0.05$. Raw data and statistical test details are provided in Supplementary Data 1.