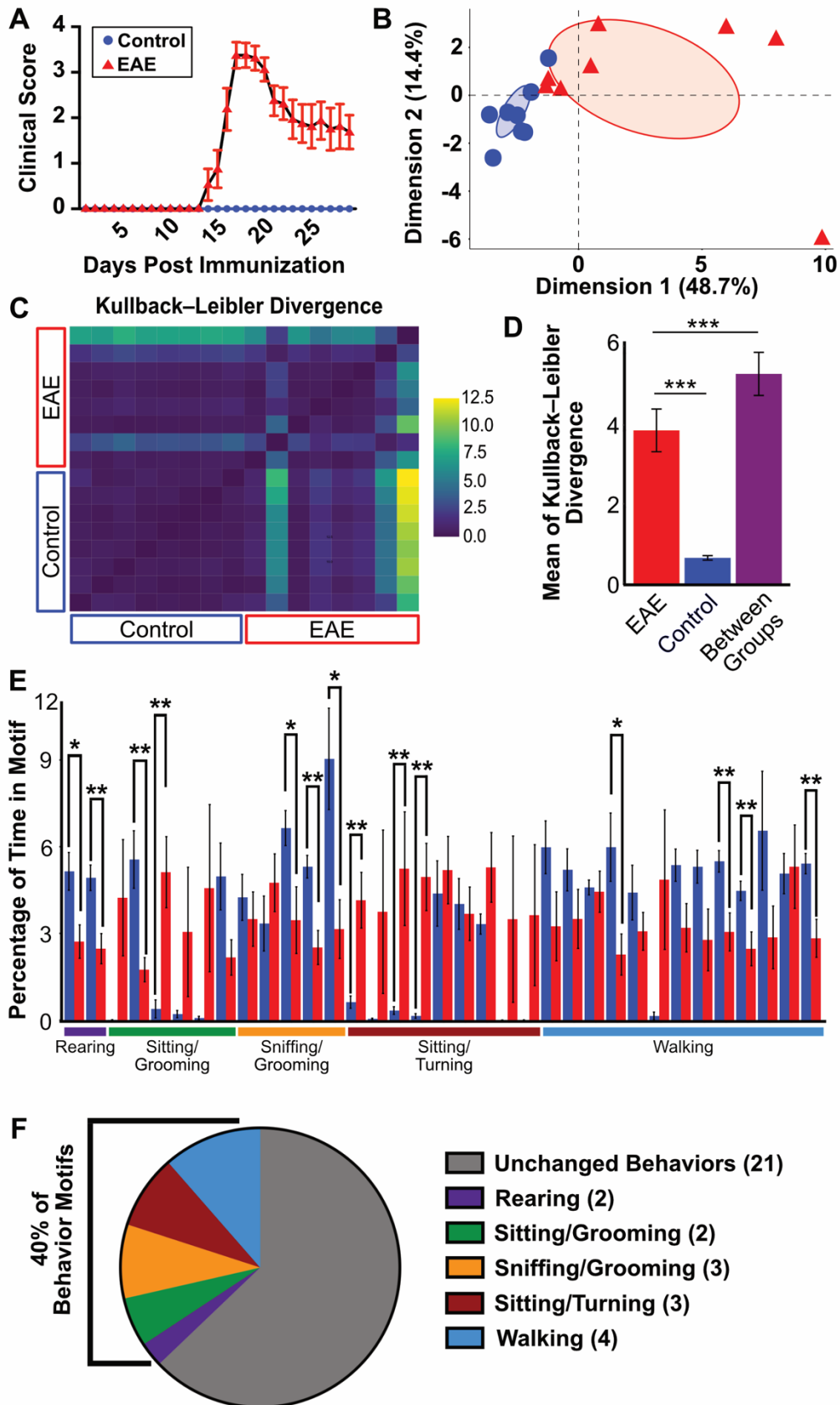
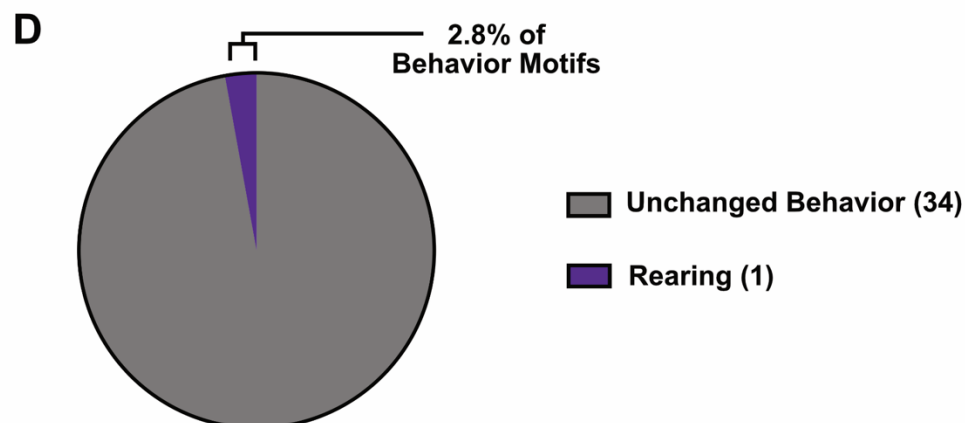
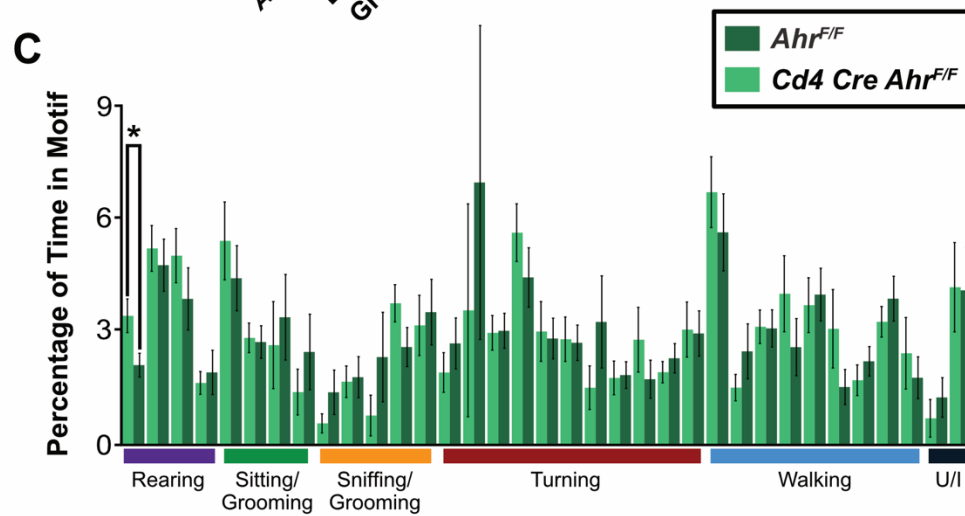
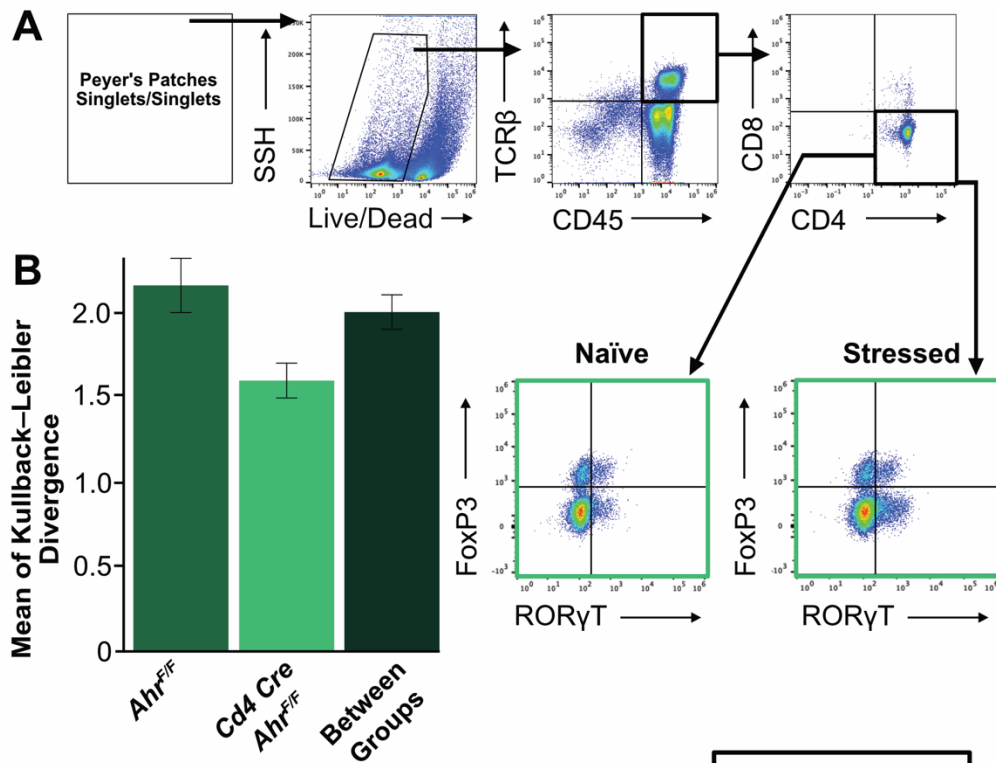


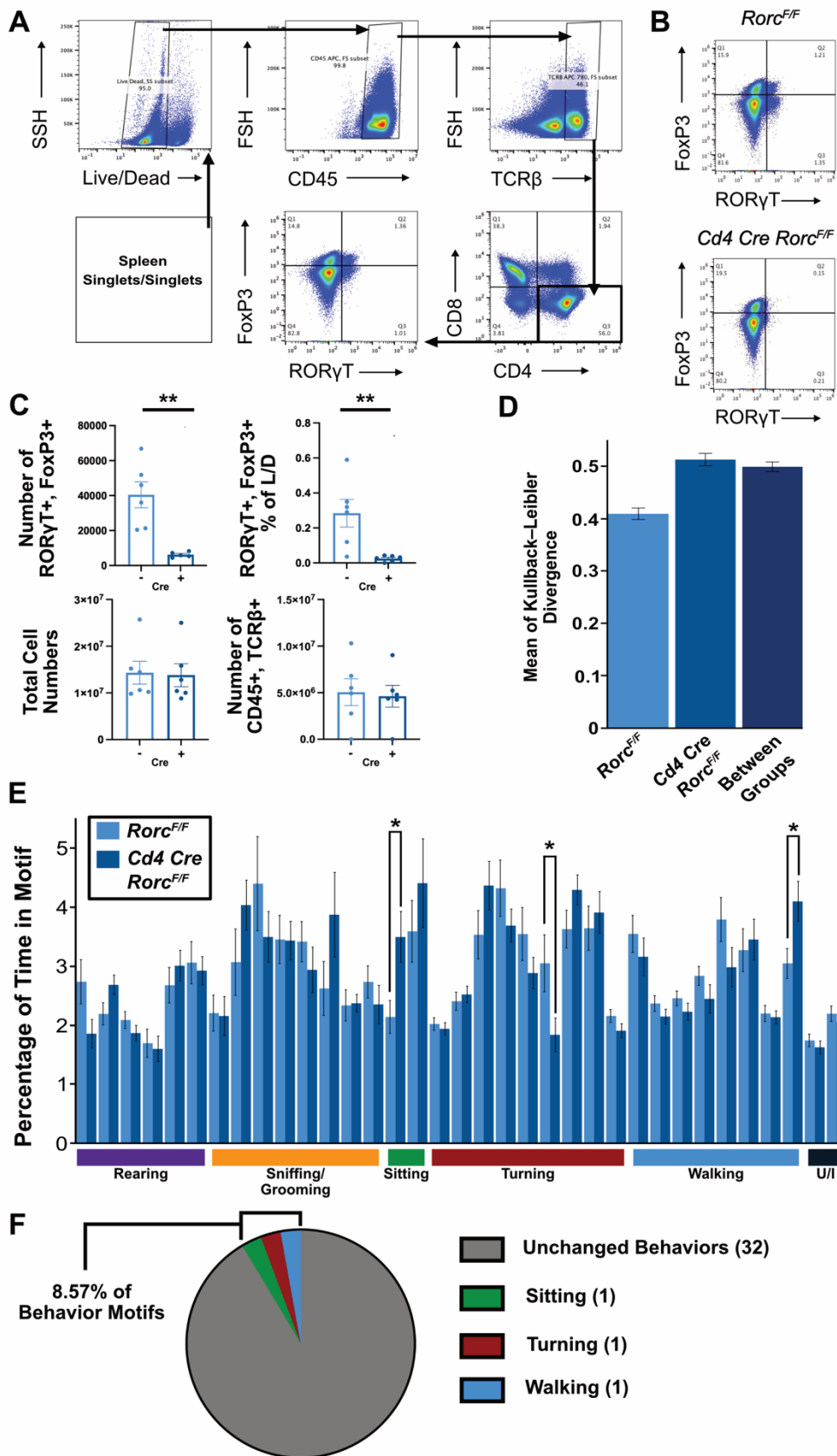


Supplemental Figure 1: Validation of DeepLabCut in EAE Mice. Average clinical scores of EAE and control mice (A). PCA (B) and Kullback-Leibler Divergence (C) plots representing differences between EAE and control animals. Means of Kullback-Leibler Divergence scores in control mice, EAE mice, and between groups (D). One-way ANOVA. Percentage and grouping of motif usage by EAE vs control mice in DeepLabCut analyzed videos (E). T tests. Quantification and grouping of significantly changed motifs (by % usage) in EAE vs control mice. Each dot represents an animal, N=1, All female mice.

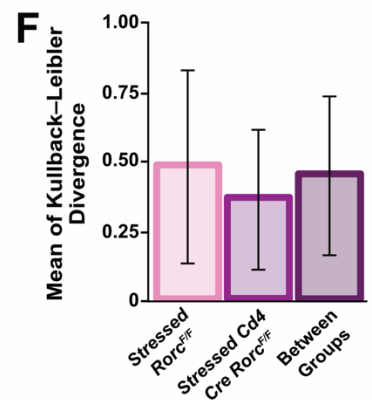
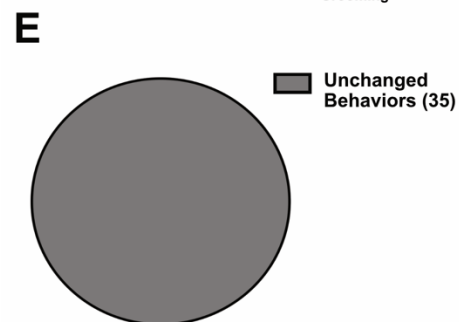
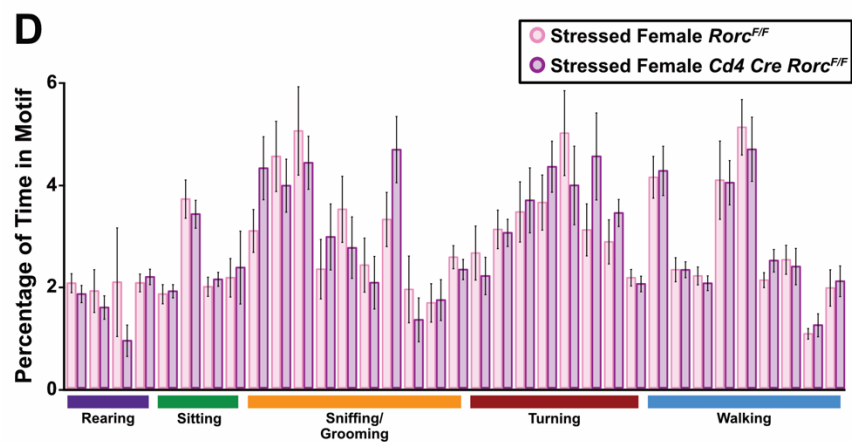
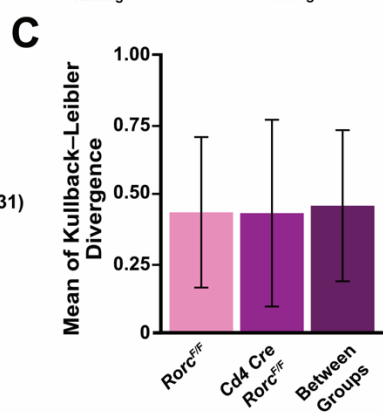
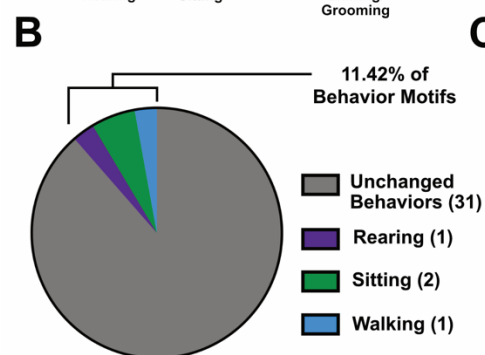
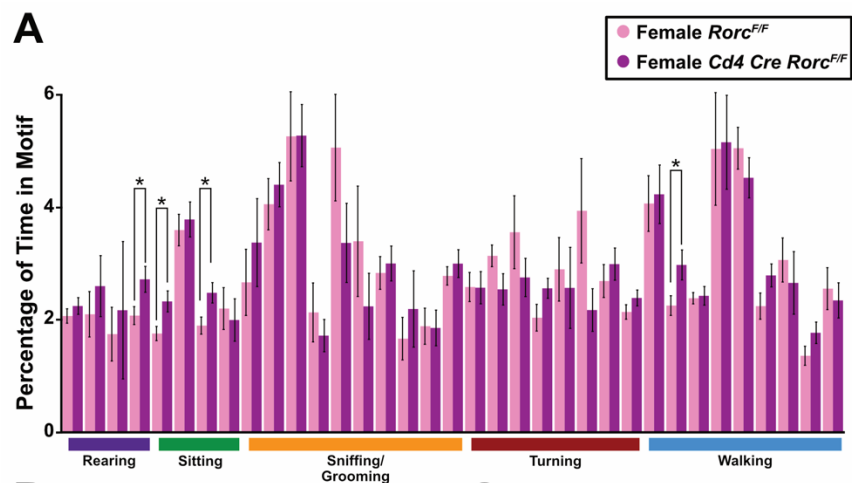


Supplemental Figure 2: *Ahr* Depletion does not Impact Subtle Behaviors After Stress

Exposure. Representative flow cytometry gating strategy for Th17s in naïve vs stressed mice (A). Graphical quantification of mean of Kullback-Leibler Divergence scores in *Ahr* KO, littermate controls, and between groups (B). Percentage and grouping of motif usage from DeepLabCut analyzed behaviors between *Ahr* KO and littermate controls (C and D). Percentage and grouping of significantly changed motifs (by % usage) between *Ahr* KO and control groups.



Supplemental Figure 3: *Rorc* Depletion does not Impact Subtle Behaviors in Male Mice at Baseline. Representative gating strategy for spleen Foxp3 and ROR γ T positive cells between *Rorc* KO and control animals (A). Representative flow cytometry quadrants for FoxP3 and ROR γ T positive cells between *Rorc* KO and littermate controls (B). Quantification of the number and percent of spleen ROR γ T+ and FoxP3+ cells and total cell and t cell numbers between *Rorc* KO and littermate controls(C). Means of Kullback-Leibler Divergence scores in littermate controls, *Rorc* KO mice, and between groups (D). One-way ANOVA. Percentage and grouping of motif usage by *Rorc* KO vs littermate controls in DeepLabCut analyzed videos (E). T tests. Quantification and grouping of significantly changed motifs (by % usage) in *Rorc* KO vs littermate controls. Male mice.



Supplemental Figure 4: *Rorc* Depletion does not Impact Subtle Behaviors in Female Mice at Baseline or after Stress. Percentage and grouping of baseline motif usage by female *Rorc* KO vs littermate controls in DeepLabCut analyzed videos (A). T tests. Means of baseline Kullback-Leibler Divergence scores in female littermate controls, *Rorc* KO mice, and between groups (B). One-way ANOVA. Quantification and grouping of significantly changed motifs (by % usage) at baseline in female *Rorc* KO vs littermate controls (C). Percentage and grouping of motif usage by stressed female *Rorc* KO vs stressed female littermate controls after 3 weeks of UCMRS in DeepLabCut analyzed videos (D). T tests. Means of Kullback-Leibler Divergence scores after 3 weeks of UCMRS in female littermate controls, *Rorc* KO mice, and between groups (F). One-way ANOVA. Quantification and grouping of significantly changed motifs (by % usage) after 3 weeks of UCMRS in female *Rorc* KO vs littermate controls (E).