

Retrieval+Extinction following alcohol cue



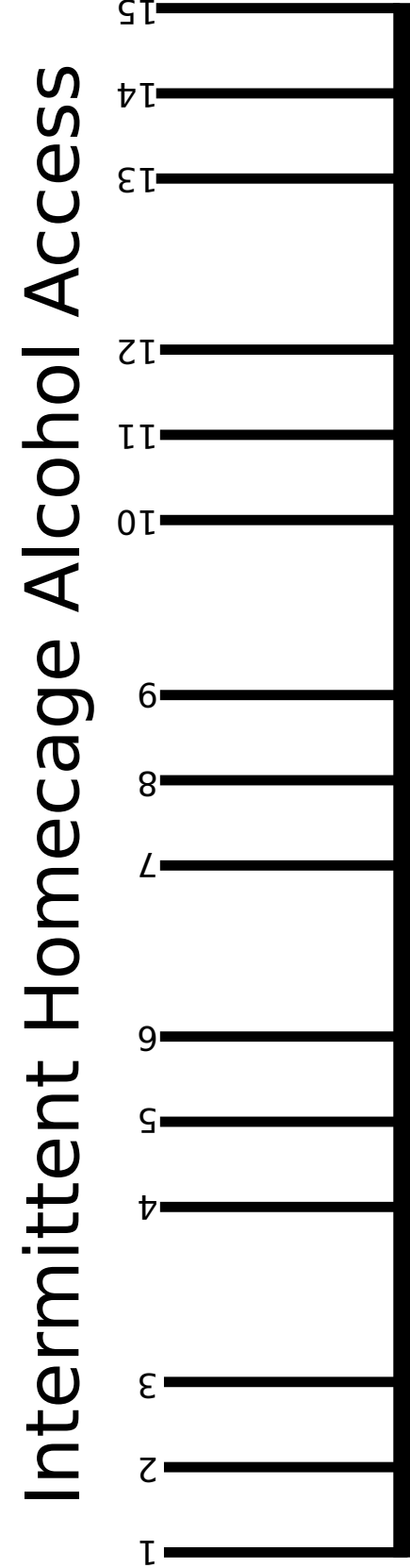
conditioning prevents relapse in rats

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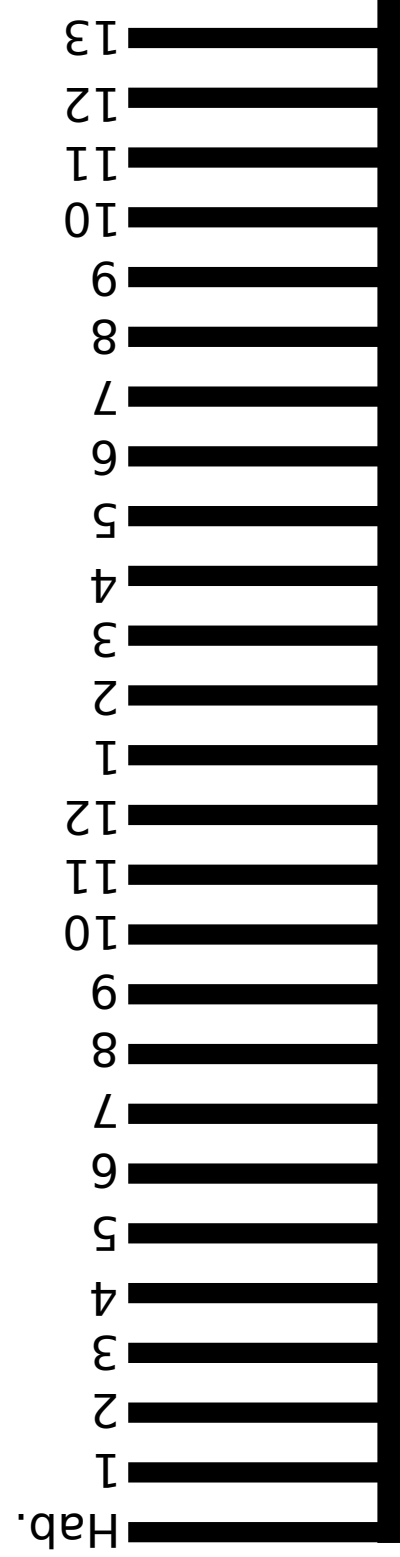
Rationale

Alcohol cue elicited appetitive responses can hinder attempts at drinking abstinence or moderation. Exposure therapy (standard cue extinction) can mitigate these responses, but they tend to return when subjects finish treatment. Here we assess whether conducting cue extinction during reconsolidation of the cue memory can reduce response return.

Experiment Timeline



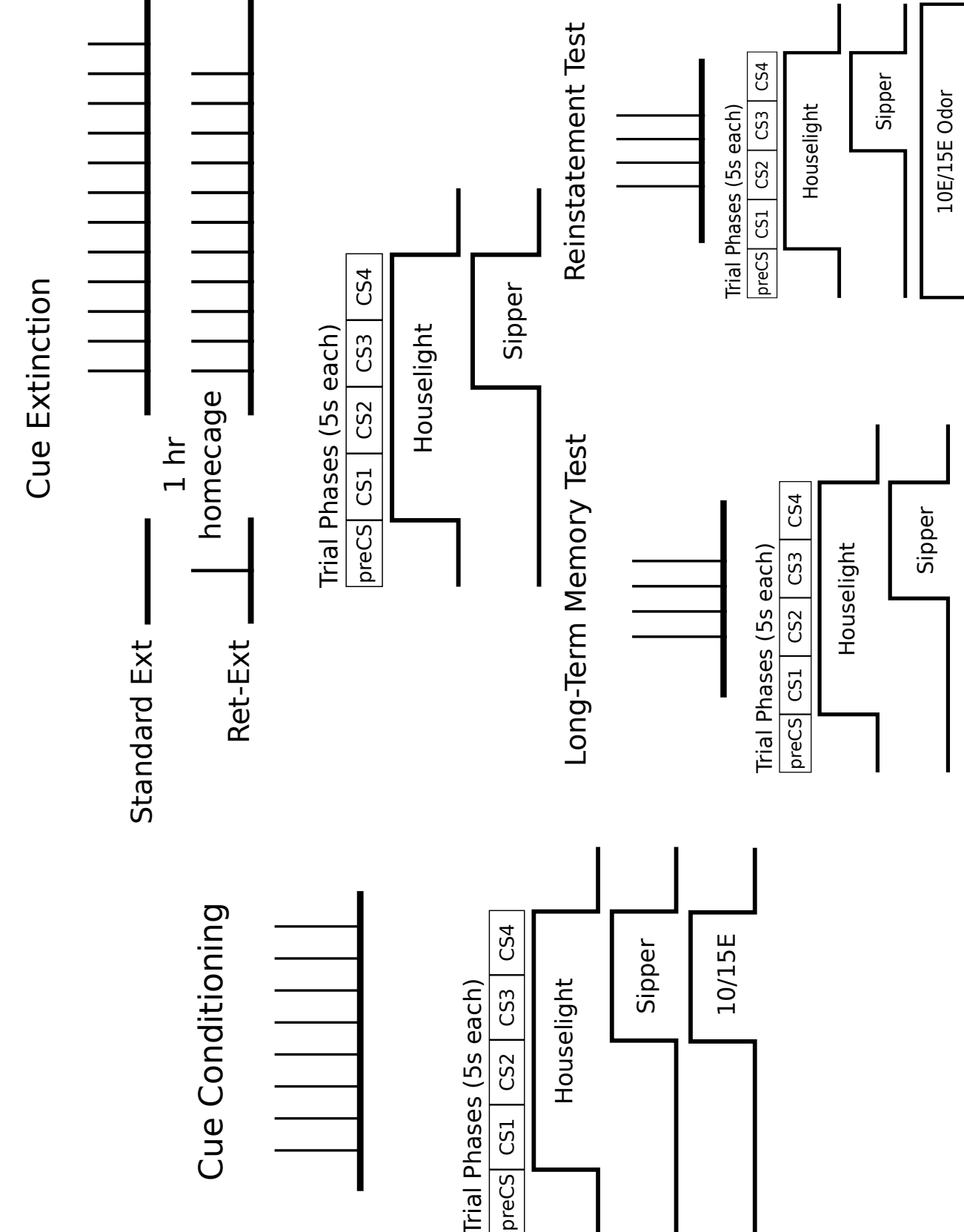
Cue Conditioning Cue Extinction



Key Sessions:

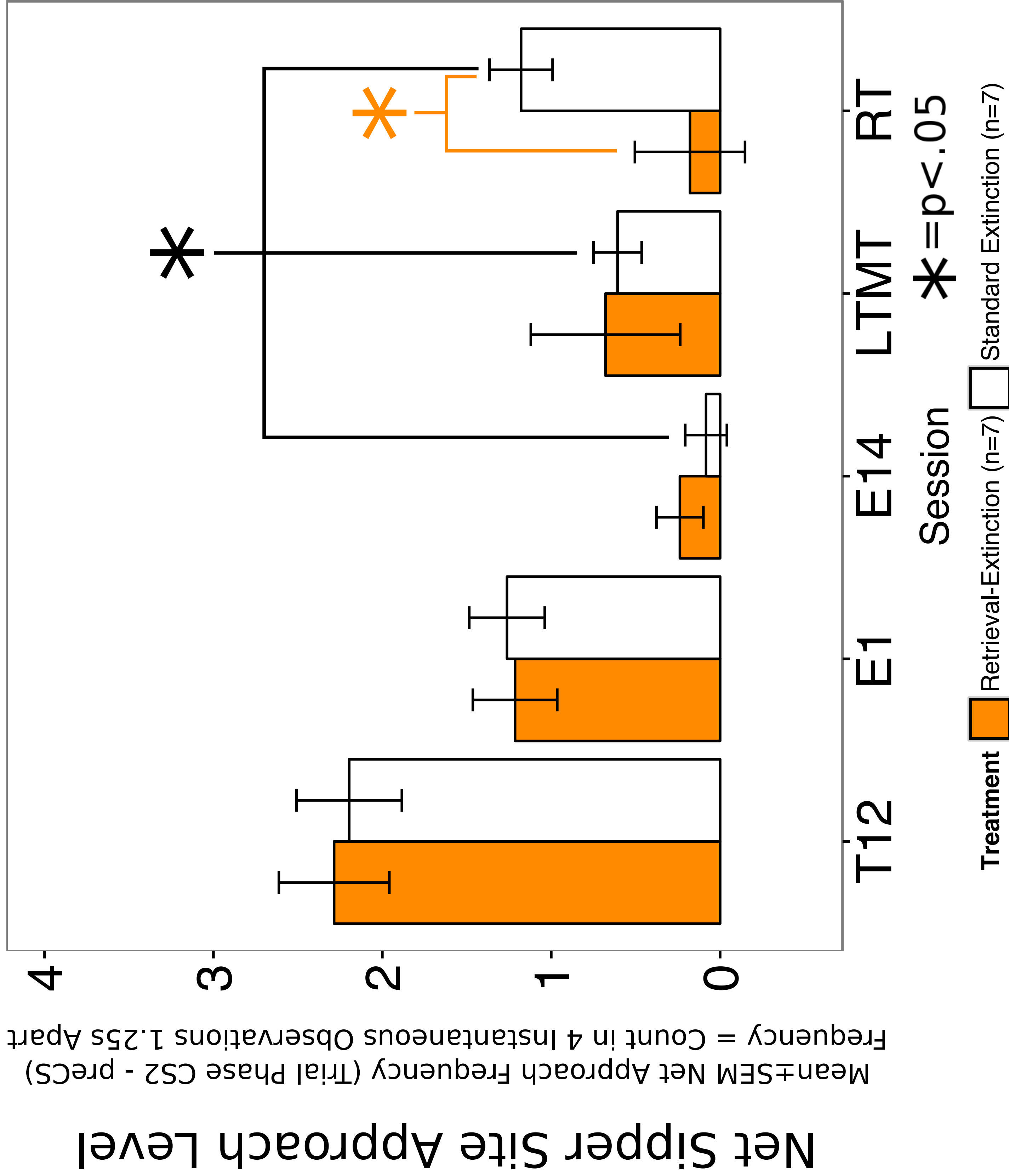


Within-Session Event Timelines

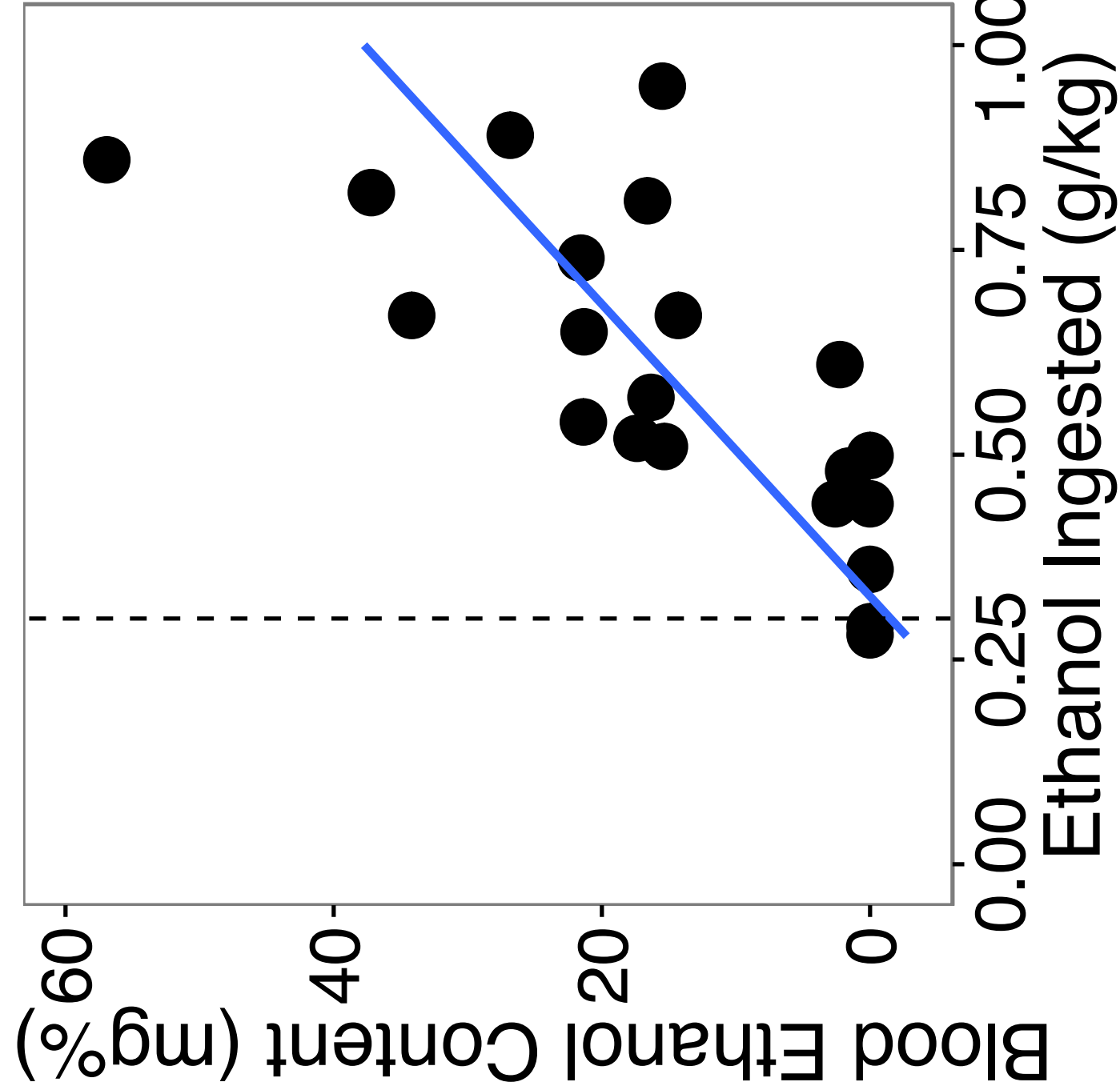


Cued Alcohol Seeking Response:

Acquisition, Extinction, Spontaneous Recovery & Reinstatement



BECs in Cue Conditioning



Blood samples were taken from retrained rats (n=21) after the last trial in a conditioning session (sample time: 2.5-12min, median=6.5min). Ethanol content was determined via GC-FID. Ingested doses significantly predicted end of session BEC despite uncontrolled stomach contents and temporally constrained drinking.

Discussion

Rats treated with Standard Extinction (n=7) showed significant return of cued alcohol seeking after a break in treatment (net approach in LTMT > E14) and upon exposure to an unextinguished cue (alcohol odor) (net approach in RT > LTMT).

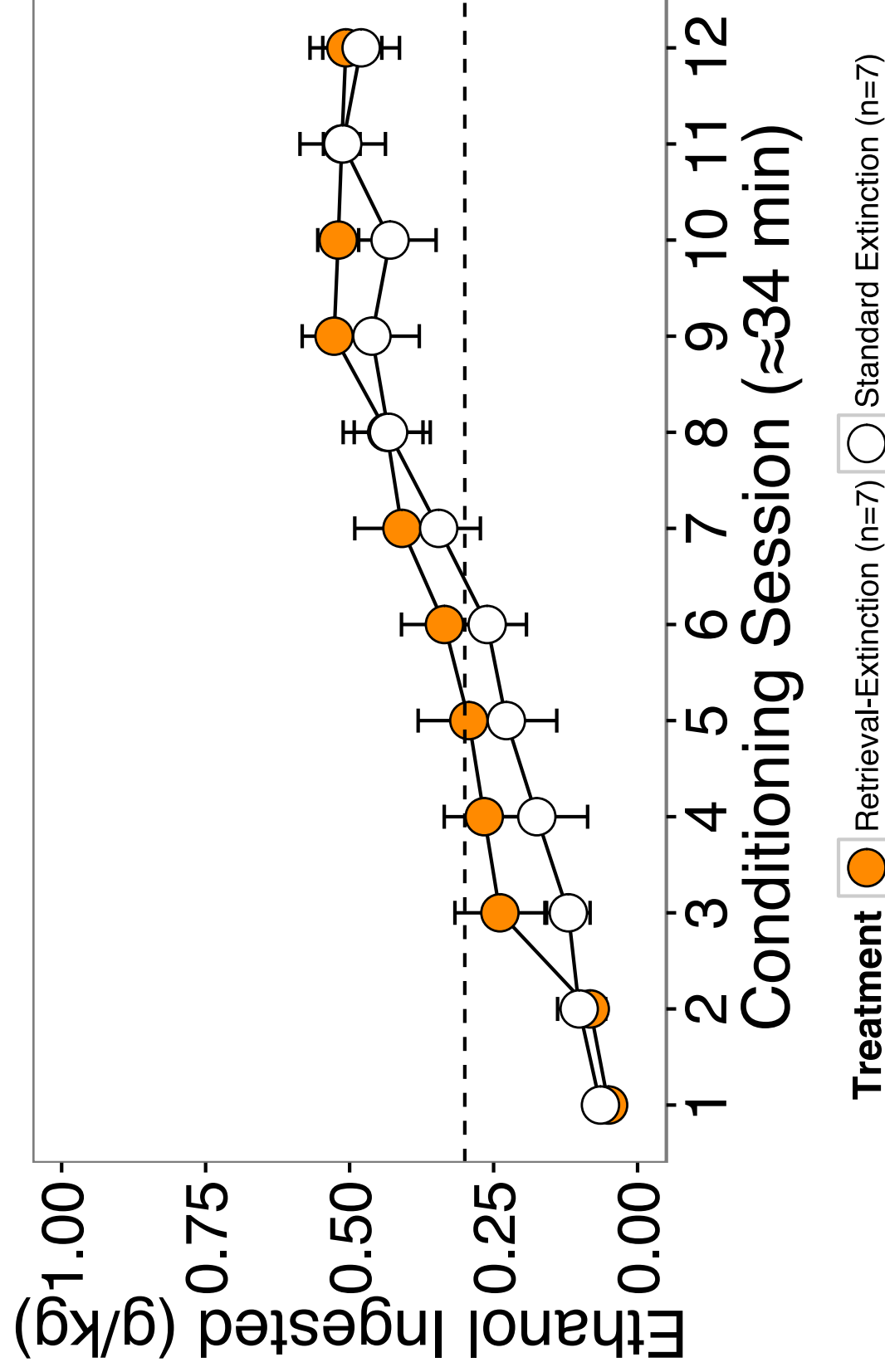
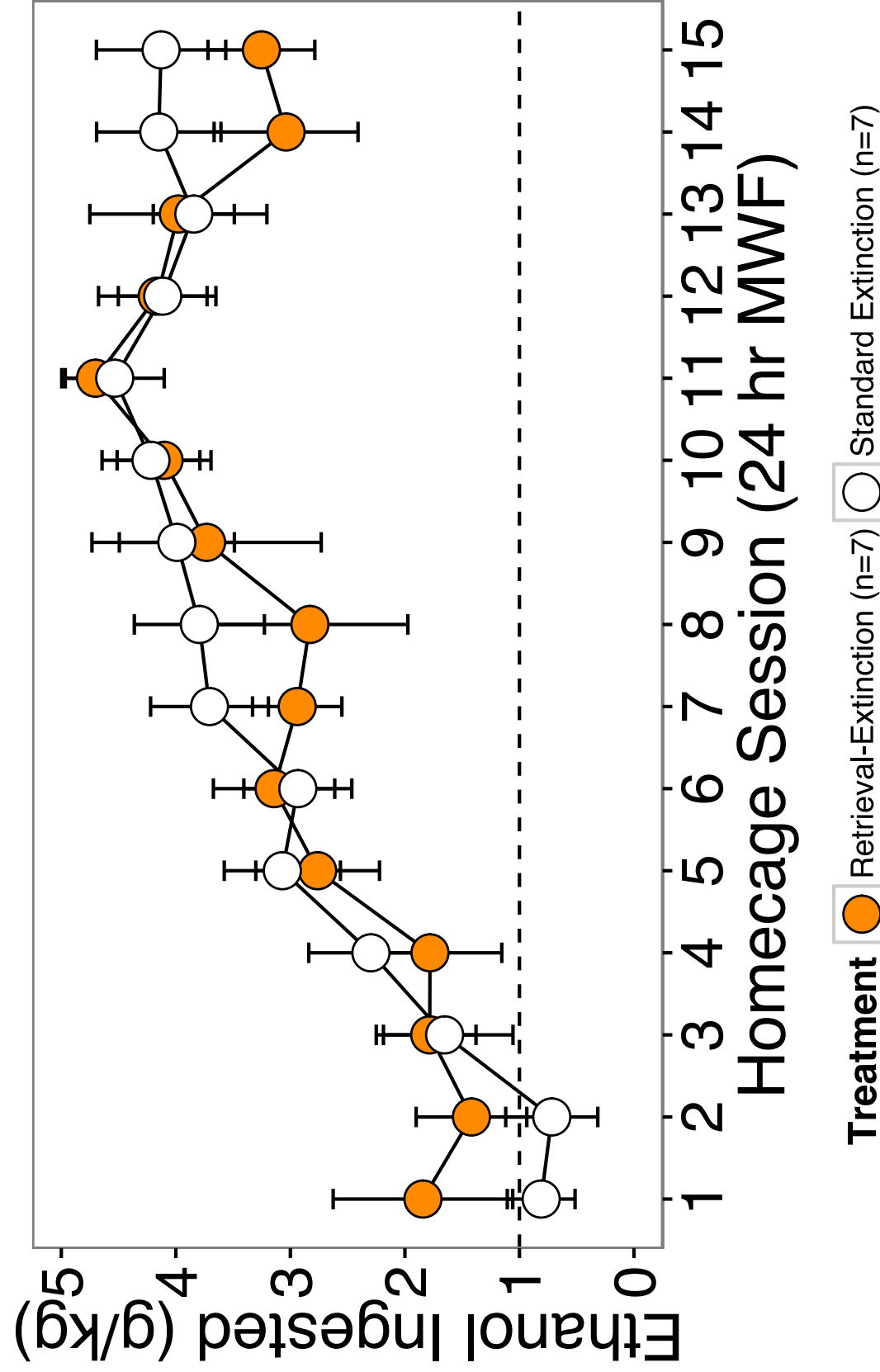
Future Directions

Will memory retrieval + cue extinction attenuate cued alcohol seeking by rats with history of alcohol dependence or longer history of cue conditioning?

Funding

NIH NIAAA T32AA007471
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Doses Ingested in Homeage & Conditioning



Visually cued approach acquisition and drinking history were similar between male, Long-Evans rats later assigned to Retrieval-Extinction or Standard Extinction treatment (n=7/group). Drinking during cue conditioning sessions likely resulted in BECs within the 20-60 mg% range.