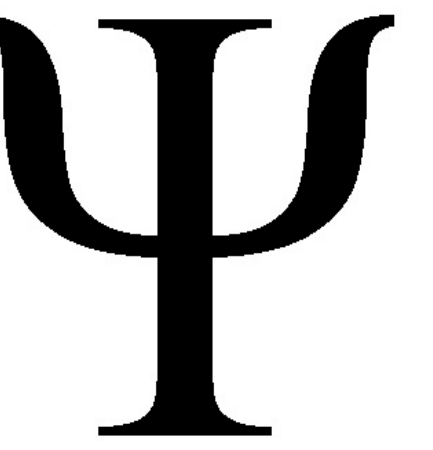




The Effects of Prepubertal Ovariectomy on Sexual Motivation and Reward in Female Rats

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Introduction

Prepubertal estrogen organizes the female brain but pubertal effects of ovarian hormones are less well understood.

The present study explored the role of pubertal ovarian hormones on sexual motivation, reward, and sensory discrimination in hormone-treated adult female rats.

Experimental Design

O@P	Puberty				Adulthood											
	age (wks)	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
No-O@P					OVX				Partner Preference				CPP & Paced Mating Behavior			
	age (wks)	3	4	5	6	7	8	9	10	11	12	13				

Female rats received ovariectomy:

- Before puberty: No-O@P (n=24)
- After puberty: O@P (n=24)

Behavioral testing in adulthood occurred after estradiol benzoate (EB) and progesterone (P) reintroduction.

Conclusions

Pubertal ovarian hormone exposure is not necessary for sexual motivation and reward in EB/P-treated, adult female rats.

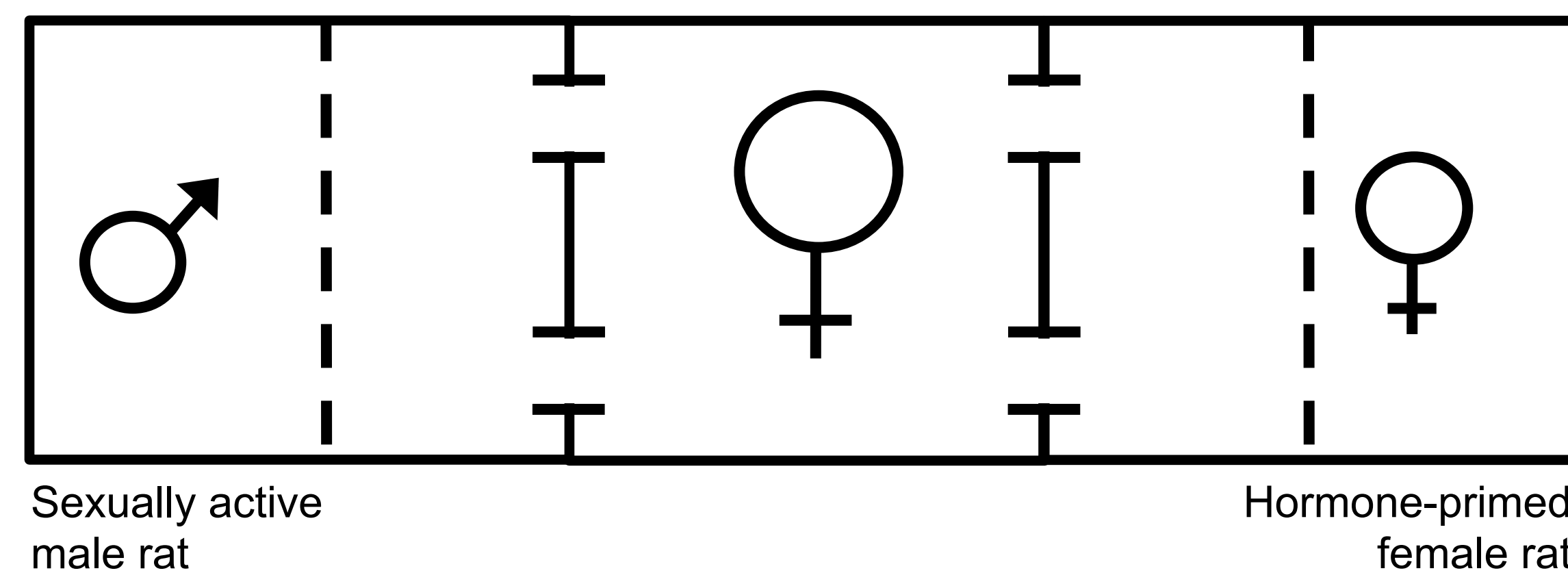
The elevated percentage of exits and activity levels in No-O@P rats indicate organizational effects of pubertal ovarian hormones.

Additional experiments are needed to identify neural targets organized by pubertal ovarian hormones.

Partner Preference:

Sexual motivation

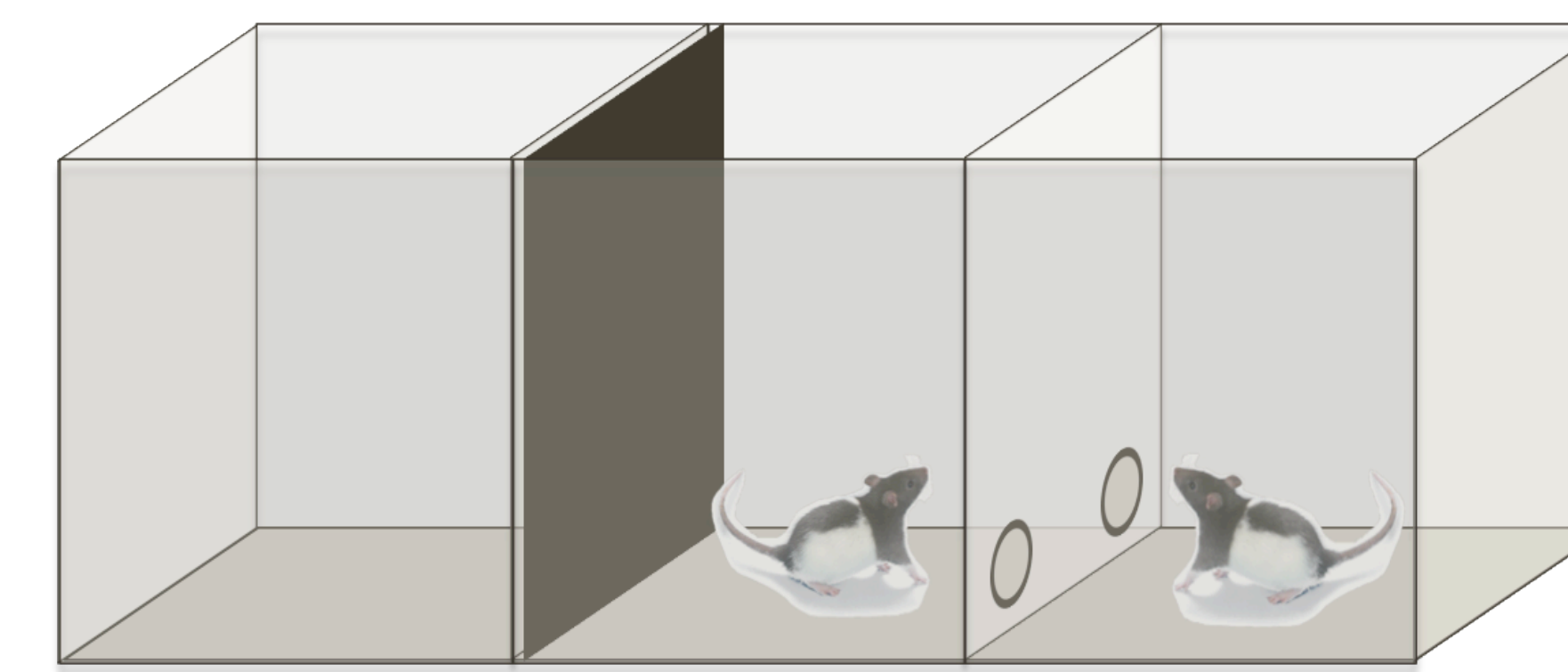
10 minute no contact test



Paced Mating Behavior:

Sensory discrimination

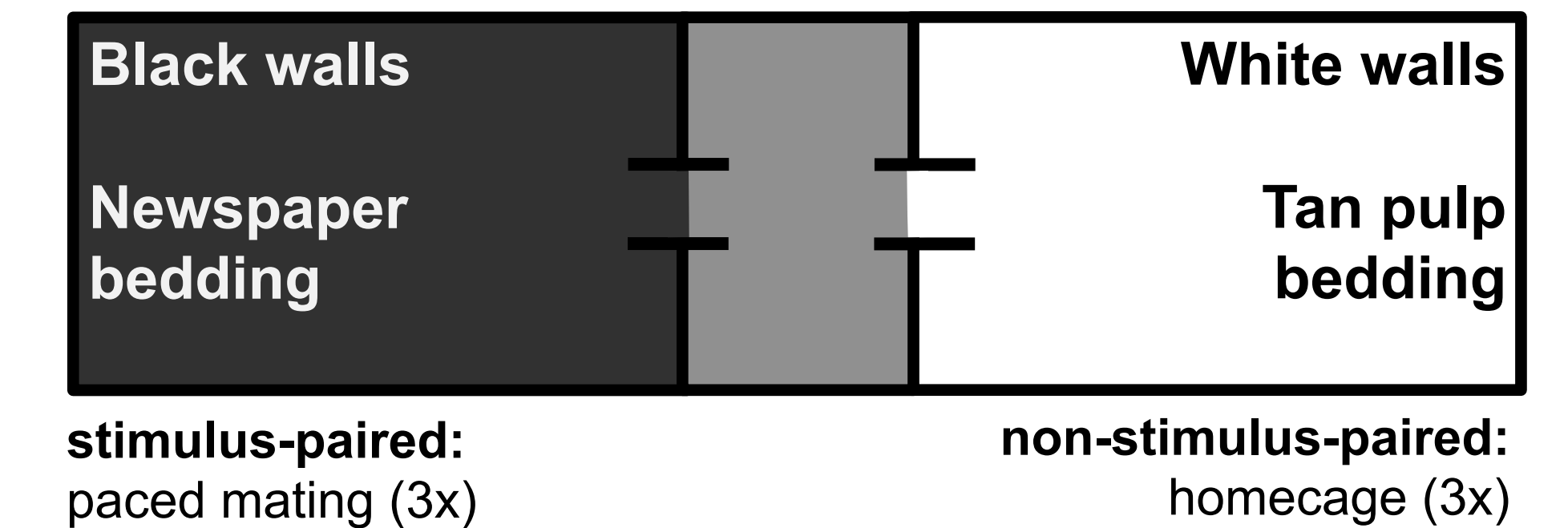
During a 15-intromission mating interaction, female rats approach and withdraw from the male rat to control the rate and timing of receipt of sexual stimulation.



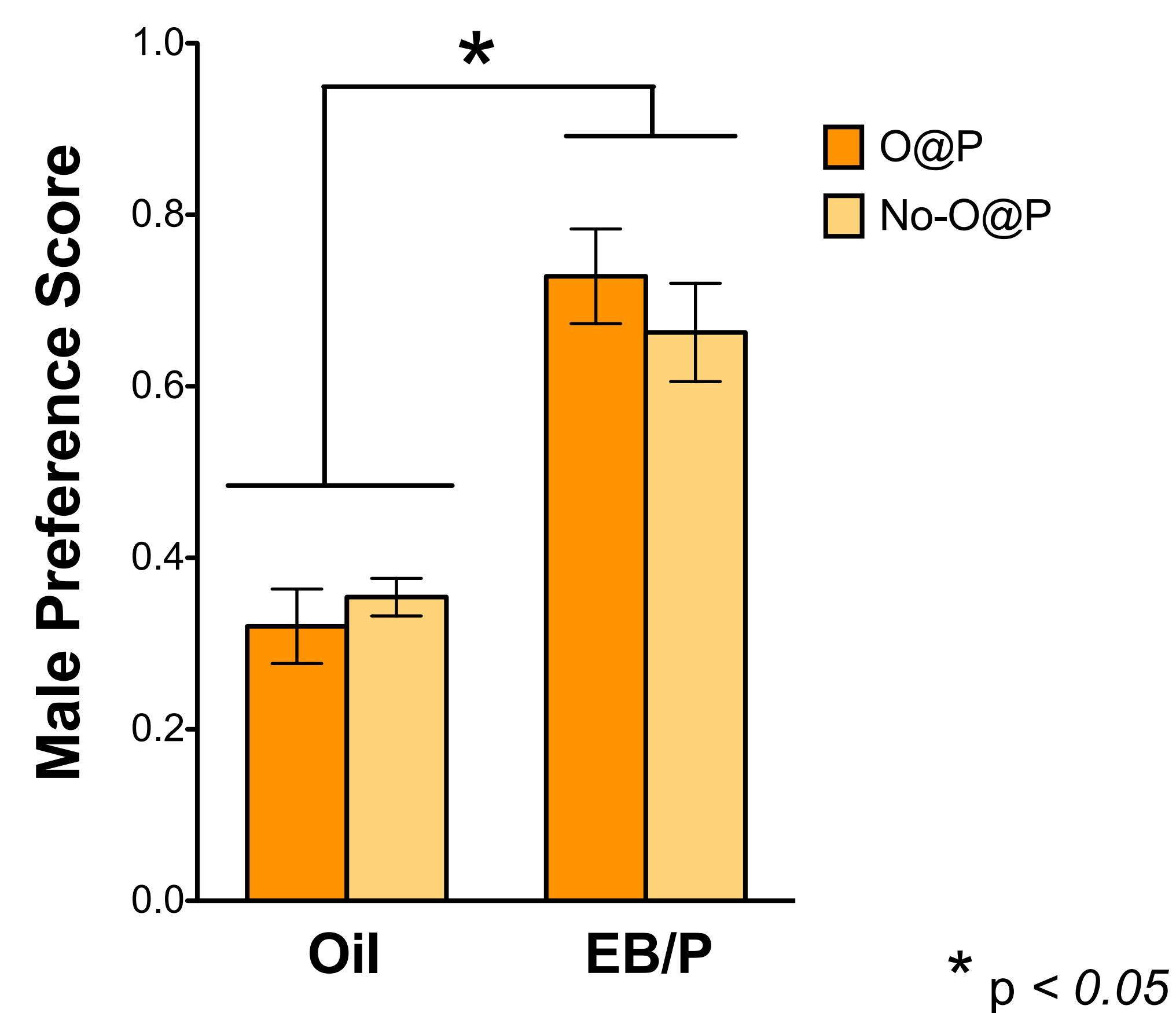
Conditioned Place Preference (CPP):

Sexual reward

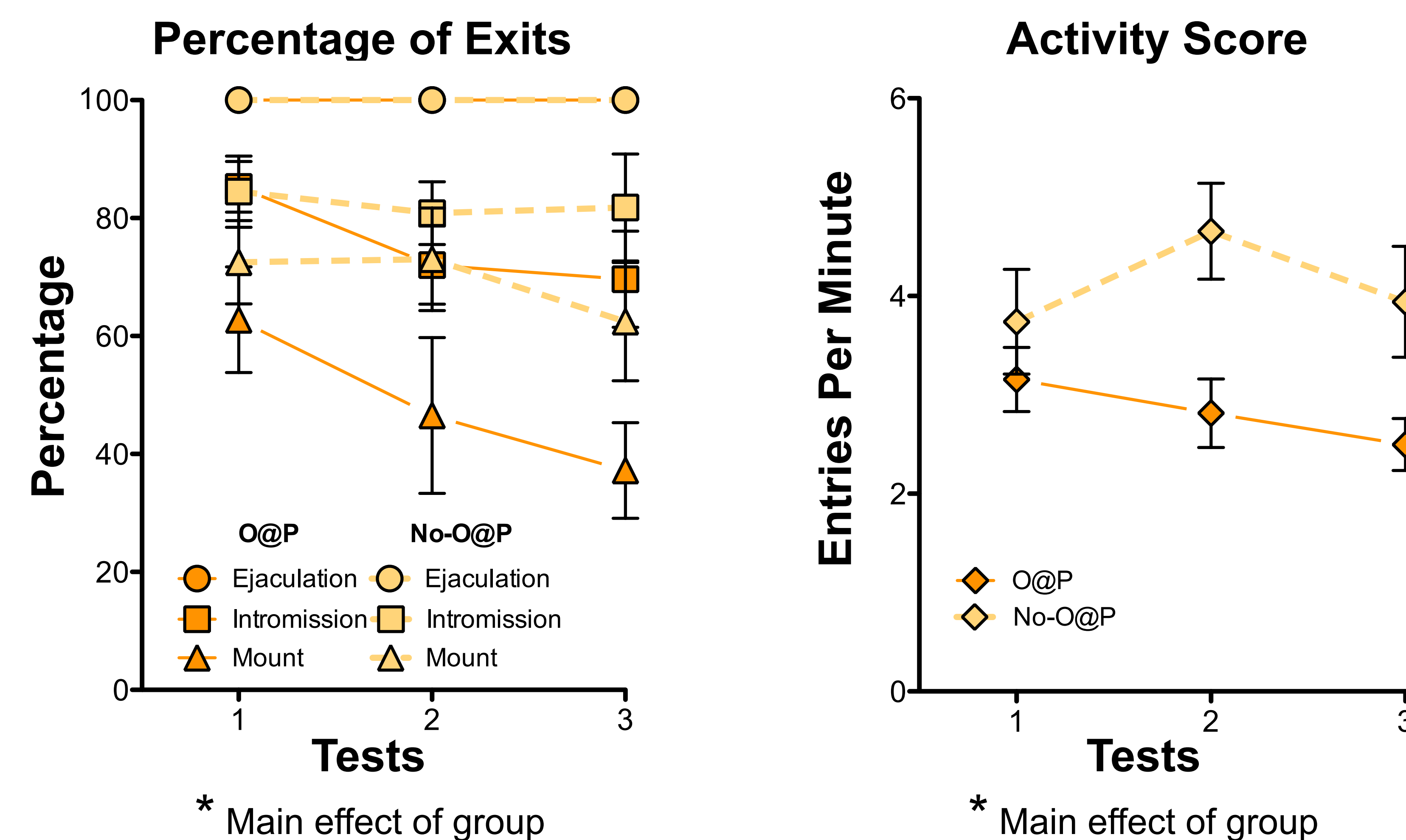
- 10 minute baseline
- 30 minute conditioning trials
- 10 minute test



Both No-O@P and O@P rats exhibit elevated male preference after EB/P, but not oil, administration in adulthood.



No-O@P rats withdraw from the male more often and are more active compared to O@P rats, but do not differ in latency to return to the male after receipt of sexual stimulations (not shown).



Both No-O@P and O@P rats display a CPP for paced mating behavior.

