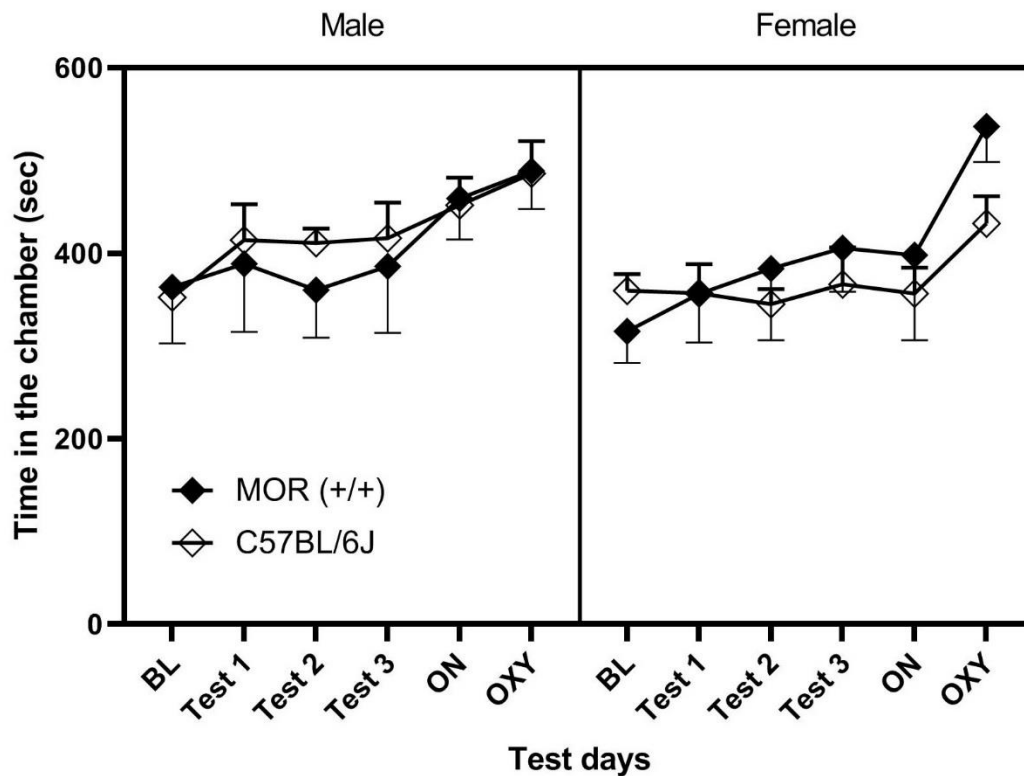


### Supplemental Data:

**Comparison of the amount of time that male and female C57BL/6J mice spent in the paired chamber (PCh) with that of MOR wildtype (MOR+/+) mice.** Figure S1 shows the amount of time that male and female MOR wildtype and C57BL/6J mice spent in the PCh. A mixed effect ANOVA revealed no significant effect of any factor or interaction between the factors except there was a significant effect of session ( $P < 0.001$ ). The detail of the data analysis is provided below. Thus, we combined the amount of time that mice of each sex spent in the PCh to have more power given that our study is underpowered ( $n = 6-8$  mice of each sex per genotype).



**Figure S1.** Comparison of the amount of time that male and female C57BL/6J mice spent in the paired chamber (PCh) in comparison with MOR wildtype mice. Data represent as mean  $\pm$  standard error of the mean ( $\pm$  S.E.M) of the amount of time that mice spent in the PCh in male and female C57BL/6J (closed circles,  $n = 6$  mice of each sex) and MOR (+/+) mice ( $n = 6-8$  mice of each sex).

# Mixed ANOVA of the data in male C57BL/6J male HFD vs. RCD group

Table Analyzed	PCh in male and female MOR mice		
Mixed-effects model (REML)	Matching by factor: Genotype		
Assume sphericity?	Yes		
Alpha	0.05		
Fixed effects (type III)	P value	P value summary	F (DFn, DFd)
Session	0.0007	***	F (5, 132) = 4.548
Sex	0.0994	ns	F (1, 132) = 2.754
Genotype	0.6720	ns	F (1, 132) = 0.1800
Session x Sex	0.8730	ns	F (5, 132) = 0.3630
Session x Genotype	0.8774	ns	F (5, 132) = 0.3564
Sex x Genotype	0.2319	ns	F (1, 132) = 1.442
Session x Sex x Genotype	0.8454	ns	F (5, 132) = 0.4039
Random effects	SD	Variance	
Subject	0.000	0.000	
Residual	113.7	12933	
Was the matching effective?			
Chi-square, df			
P value			
P value summary			
Is there significant matching (P < 0.05)?		No	
Data summary			
Number of columns		2 x 2	
Number of rows (Session)		6	
Number of subjects (Subject)		84	
Number of missing values		12	