Supplementary Information

Citric acid water as an alternative to food restriction to motivate task performance in mice during touchscreen testing

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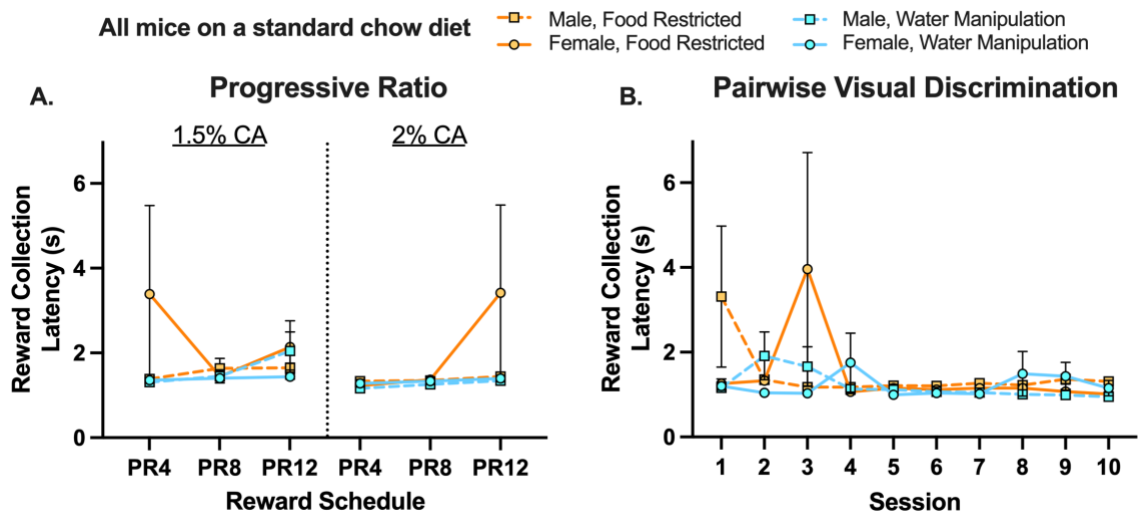
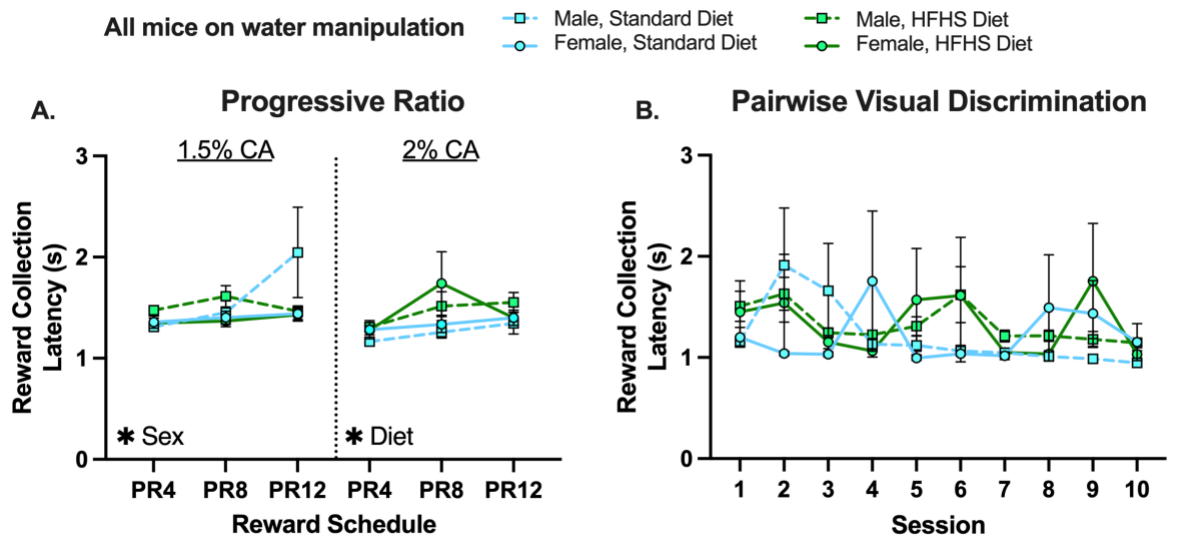


Supplementary Figure 1. Reward collection latencies during PR and PVD for mice on a standard diet.

Latency to collect reward in A) PR and B) PVD testing. Regardless of restriction type or sex, mice had similar reward collection latencies. Data presented as mean ± SEM. CA = citric acid, PR = progressive ratio, PVD = pairwise visual discrimination



Supplementary Figure 2. Reward collection latencies during PR and PVD for mice on a standard diet.

Latency to collect reward in A) PR and B) PVD testing. There were significant main effects of sex and diet during PR testing at 1.5% and 2% CA water, respectively (A). There were no effects of diet or sex on reward collection latencies during PVD testing (B). Data presented as mean ± SEM, *$p<0.05$. CA = citric acid, PR = progressive ratio, PVD = pairwise visual discrimination.

Supplementary Results

Latency to collect reward was evaluated as an additional measure relating to motivation and motor ability. Comparing restriction types, there were no significant main effects on PR reward collection latency when testing with either 1.5% CA water (ps>0.243) or 2% CA water (ps>0.146), nor were there any significant interactions (1.5% CA water: ps>0.183; 2% CA water: ps>0.222; Supplementary Figure 1A). Similarly, for PVD, there were no significant main effects (ps>0.149) or interactions (ps>0.096) with regards to reward collection latency (Supplementary Figure 1B).

Comparing diet groups, during PR testing there was a main effect of sex on latency to collect reward when mice were tested on 1.5% CA water ($F_{(1,51)}$=4.515, η^2=0.029, p=0.038, Supplementary Figure 2A) with male mice taking longer to collect reward than female mice. When tested on 2% CA water, there was a main effect of diet on reward collection latency ($F_{(1,51)}$=4.553, η^2=0.030, p=0.038, Supplementary Figure 2A) with HFHS fed mice taking longer to collect reward than standard chow-fed mice. There were no other significant main effects (1.5% CA water: ps>0.073; 2% CA water: ps>0.082; Supplementary Figure 2A) or interactions (1.5% CA water: ps>0.082; 2% CA water: ps>0.272; Supplementary Figure 2A). During PVD testing there were no significant main effects (ps>0.241) or interactions (ps>0.346) with regards to reward collection latency (Supplementary Figure 2B).