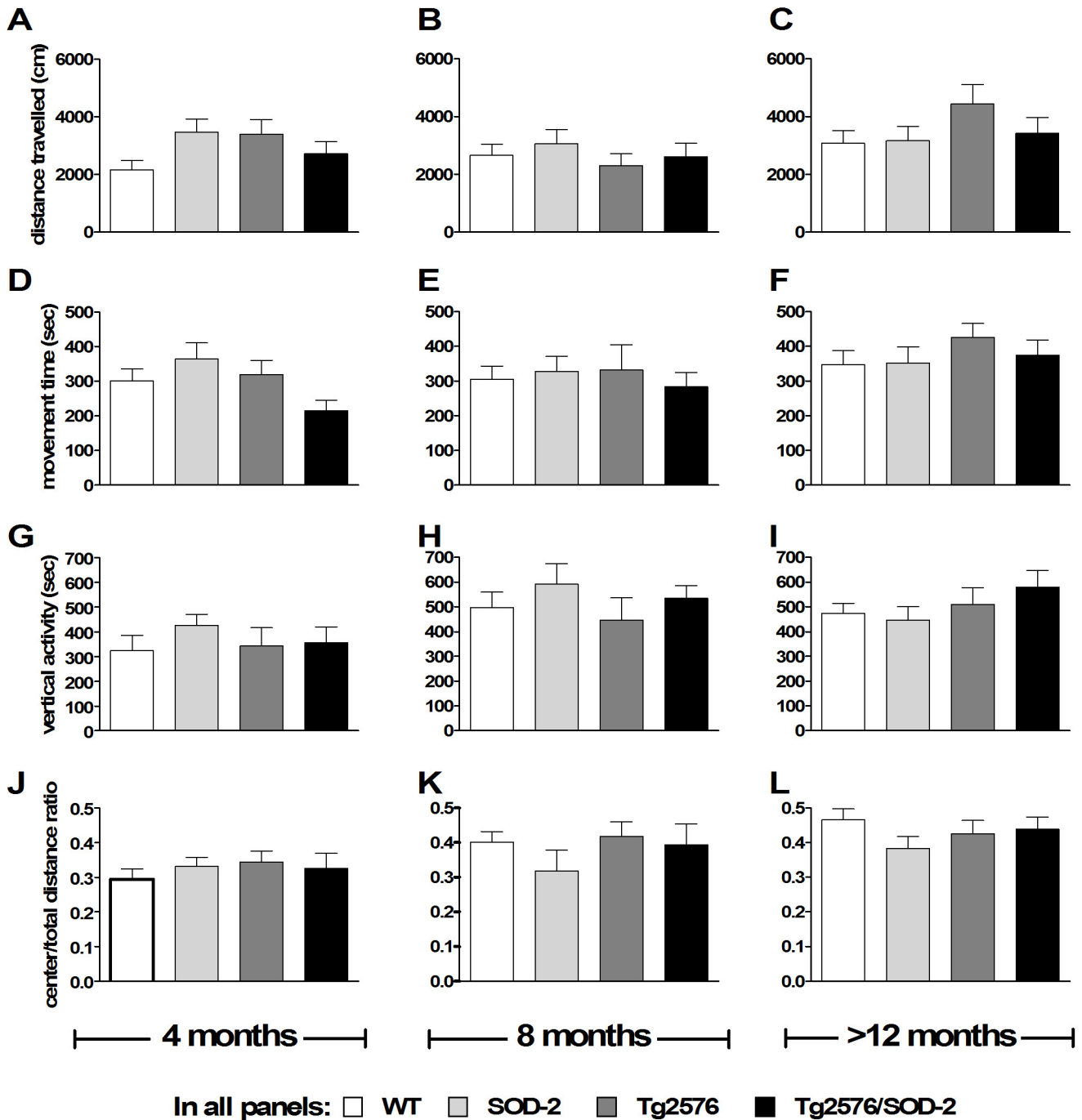


# Supporting Information

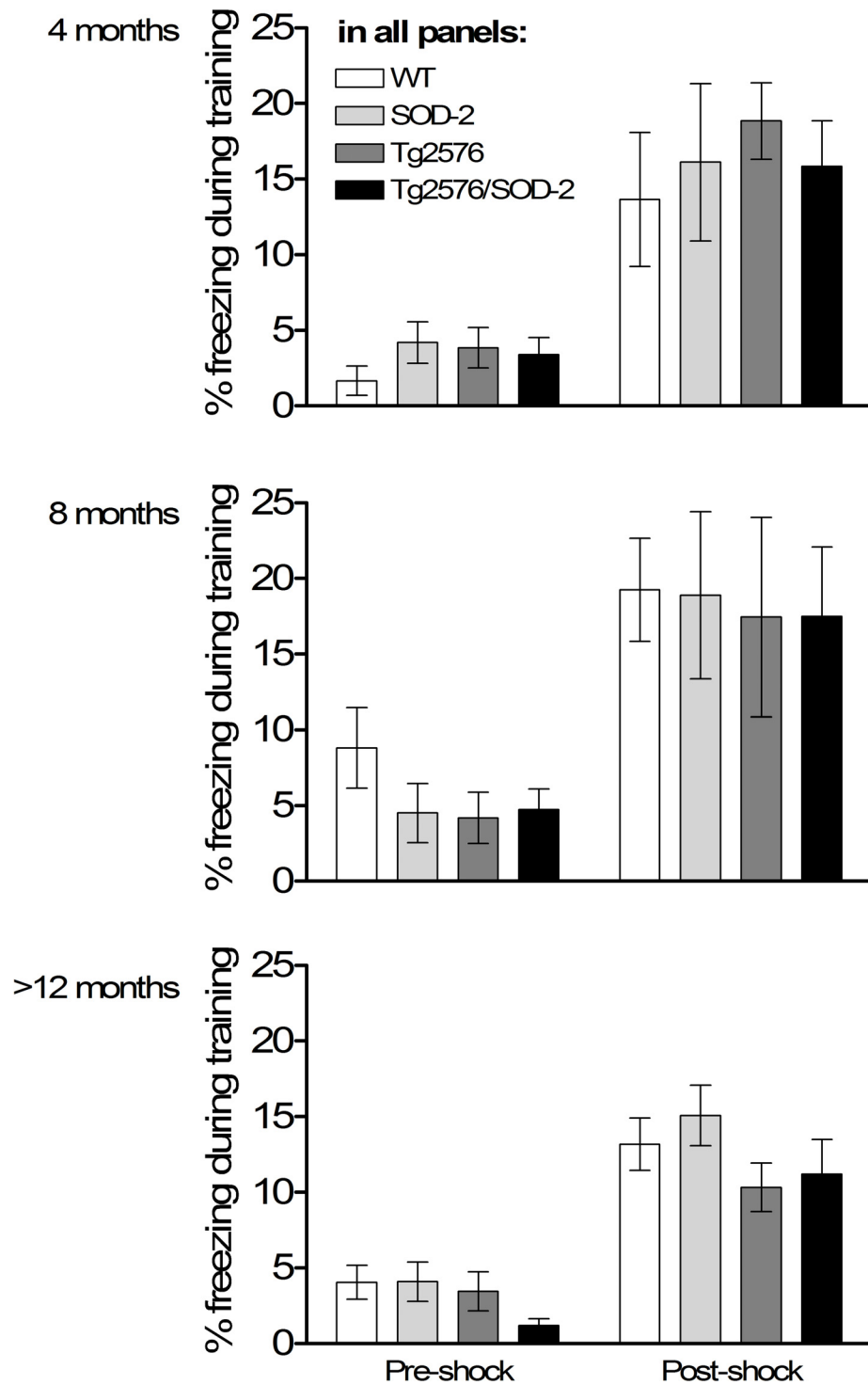
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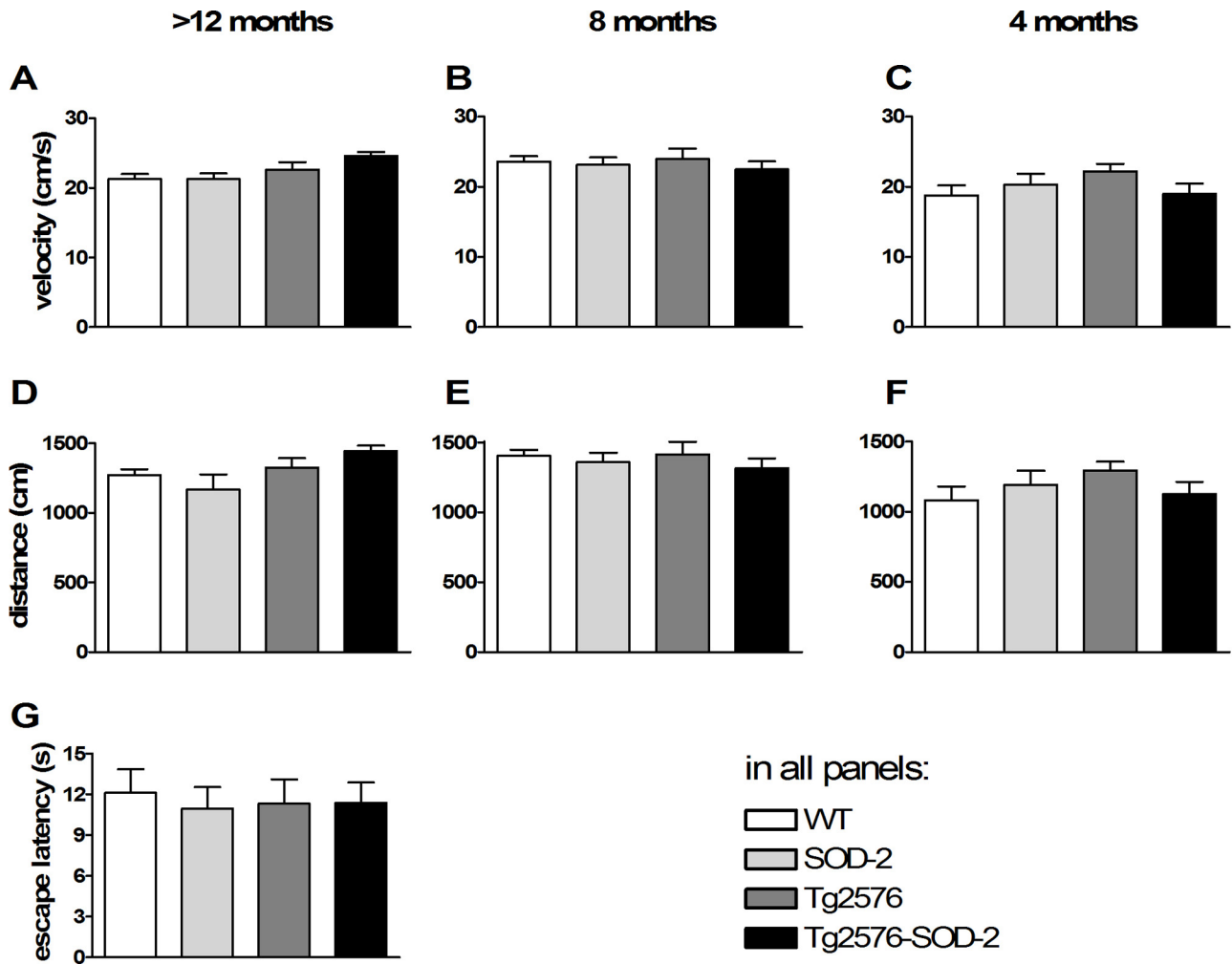
**Fig. S1.** Superoxide dismutase (SOD-2) overexpression and the Swedish amyloid precursor protein (APP) mutation do not affect the locomotor activity in the open field. (A–C) Total distance traveled in the testing arena. This is an indicator of mouse locomotor activity. (D–F) Total movement time in the testing arena, also indicative of locomotor activity. (G–I) Vertical activity, indicative of rearing behavior, as measured by vertical laser beam interruption. (J–L) Graphs represent the center-to-total-distance ratio which can be used as an indicator of anxiety-related behavior. (A–L) All measurements performed in 4-, 8-, and >12-month-old WT, SOD-2, Tg2576, and Tg2576/SOD-2 animals. Significance was assessed by one-way ANOVA with Tukey's post test. For WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice, respectively,  $n = 6, 8, 8,$  and  $8$  at 4 months of age;  $n = 10, 8, 9,$  and  $10$  at 8 months of age; and  $n = 18, 16, 17,$  and  $19$  at >12 months of age.







**Fig. 54.** Tg2576 animals have normal shock sensitivity. Graphs represent the freezing reaction of 4-, 8-, and >12-month-old WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice, before and after a foot shock during the fear-conditioning training session. Significance was assessed by one-way ANOVA with Tukey's post test. For WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice, respectively,  $n = 6, 8, 8,$  and  $8$  at 4 months of age;  $n = 10, 8, 9,$  and  $10$  at 8 months of age; and  $n = 18, 16, 17,$  and  $19$  at >12 months of age.



**Fig. 55.** SOD-2 overexpression and the Swedish APP mutation do not affect the swim speed, distance traveled, or the visual acuity of mice in the Morris water maze. (A–C) Swimming velocity of 4-, 8-, and >12-month-old WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice. (D–F) Total distance traveled in the pool of 4-, 8-, and >12-month-old WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice. (G) Graphs represent the latency to find the platform in the pool in the presence of a visual cue. The >12-month-old WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice were tested to rule out the possibility of losing visual acuity with age. Significance was assessed by one-way ANOVA with Tukey's post test. For WT, SOD-2, Tg2576, and Tg2576/SOD-2 mice, respectively,  $n = 6, 8, 8,$  and  $8$  at 4 months of age;  $n = 10, 8, 9,$  and  $10$  at 8 months of age; and  $n = 18, 16, 17,$  and  $19$  at >12 months of age.

