## **Supplementary Information**

- 1. Supplementary Table 1.
- 2. Supplementary Fig. 1
- 3. Figure legends for supplementary Fig. 1

Supplementary Fig. 1. Effects of enriched environment treatment (EET) on distance moved in the open field test across ages (male: left; female: right). a. Distance moved in WT and KIV mice after 2 months of EET (SCT and EET,  $T_1$ ), then after 1 month of SCT (SCT-SCT and EET-SCT,  $T_2$ ). Asterisks on the columns show a significant difference between WT and KIV mice. b. EET effects shown as % SCT across ages at  $T_1$  (top) and at  $T_2$  (bottom). Asterisks on the columns show a significant effect of EET compared to SCT. ED, early-life development; YA, young adult; OA, old adult. \*P<0.05, \*\*P<0.01, \*\*\*P<0.005. N=10–16 (shown at the columns).