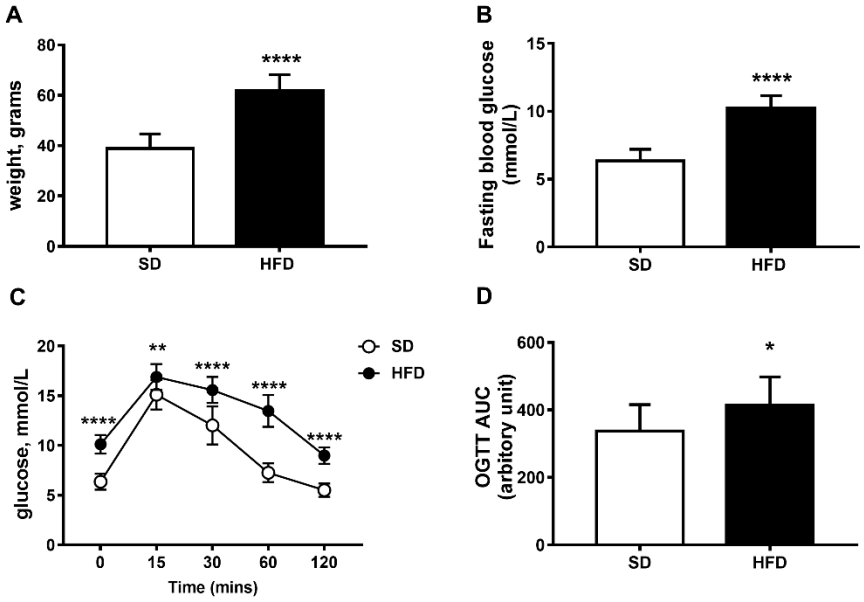
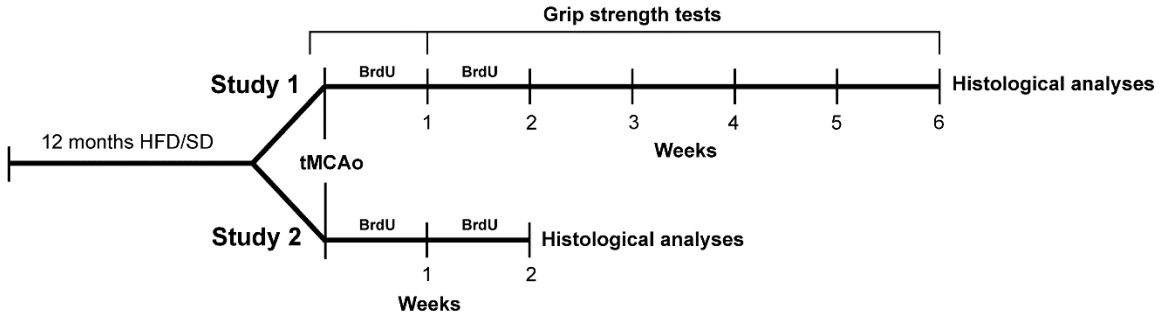
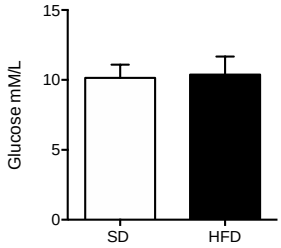
SUPPLEMENTARY MATERIAL



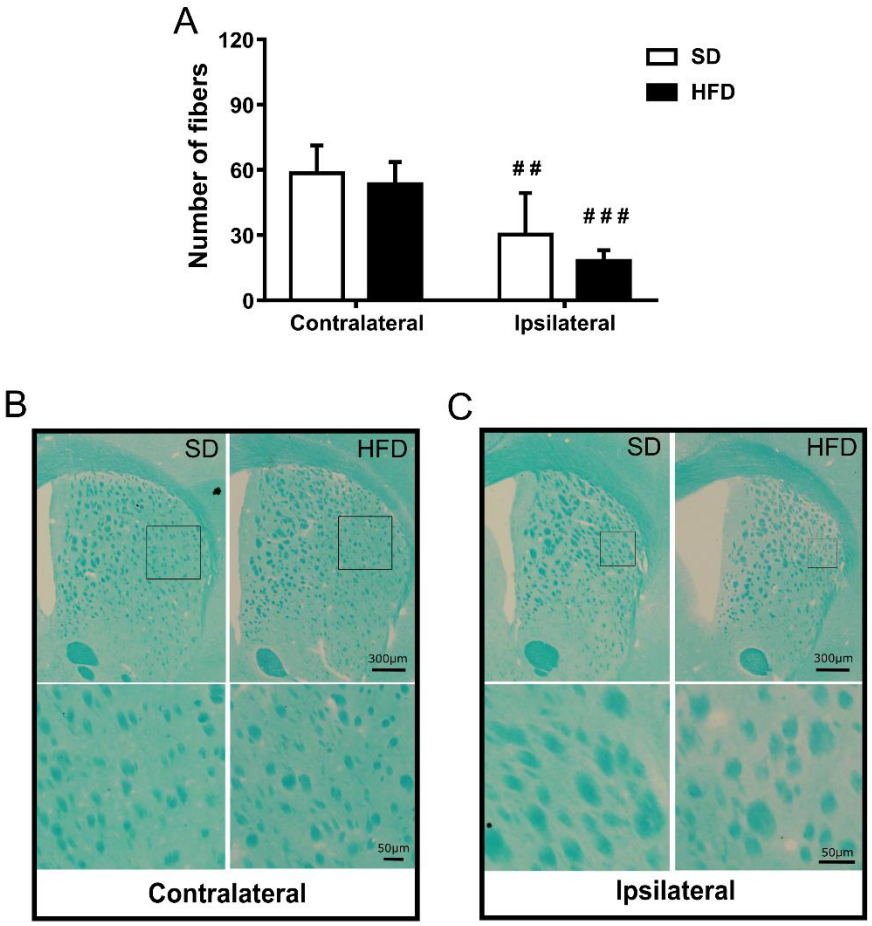
Supplementary Figure 1. Twelve months HFD feeding induces obesity and T2D in mice. Body weight (A), fasting blood glucose (B), blood glucose from oral glucose tolerance test (OGTT) (C), and area under the curve of OGTT (D) after 12 months of HFD-diet feeding. Means ± SD, Welch's t-test. *p<0.05, ** p<0.01, and **** p<0.0001 versus SD. SD-fed mice, n=8 and HFD-fed mice, n=8.



Supplementary Figure 2. Experimental design

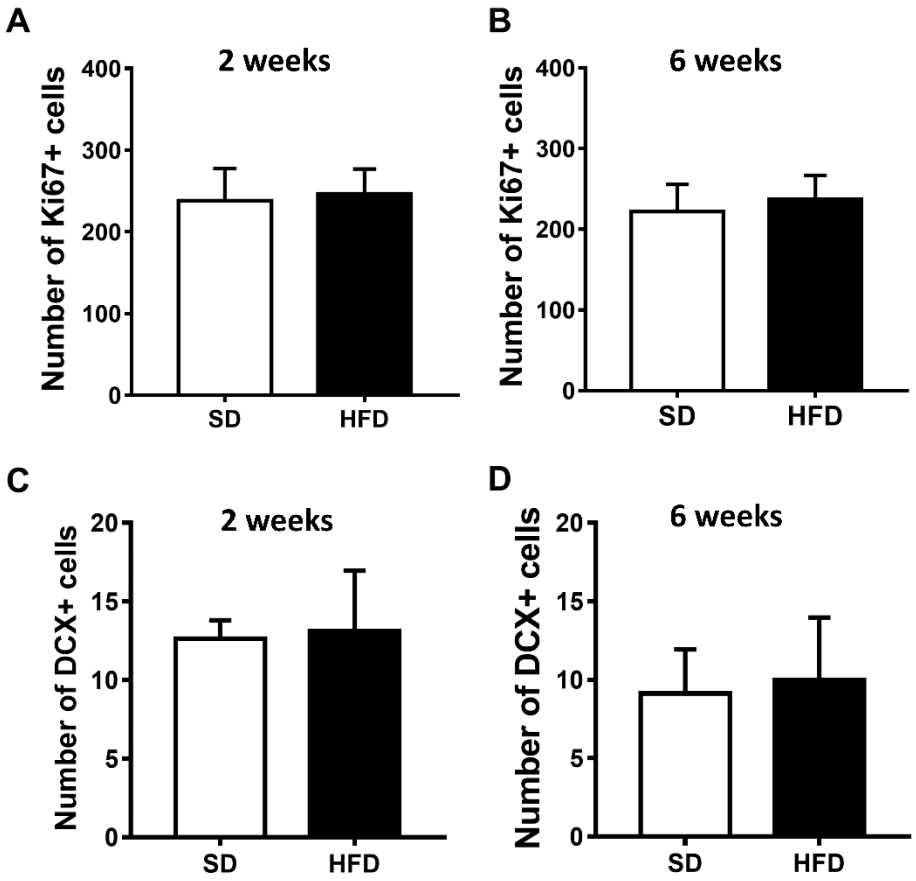


Supplementary Figure 3. Blood glucose at MCAO time. Blood glucose was measured after the filament was inserted into the internal carotid artery. SD n=20, HFD n=20).



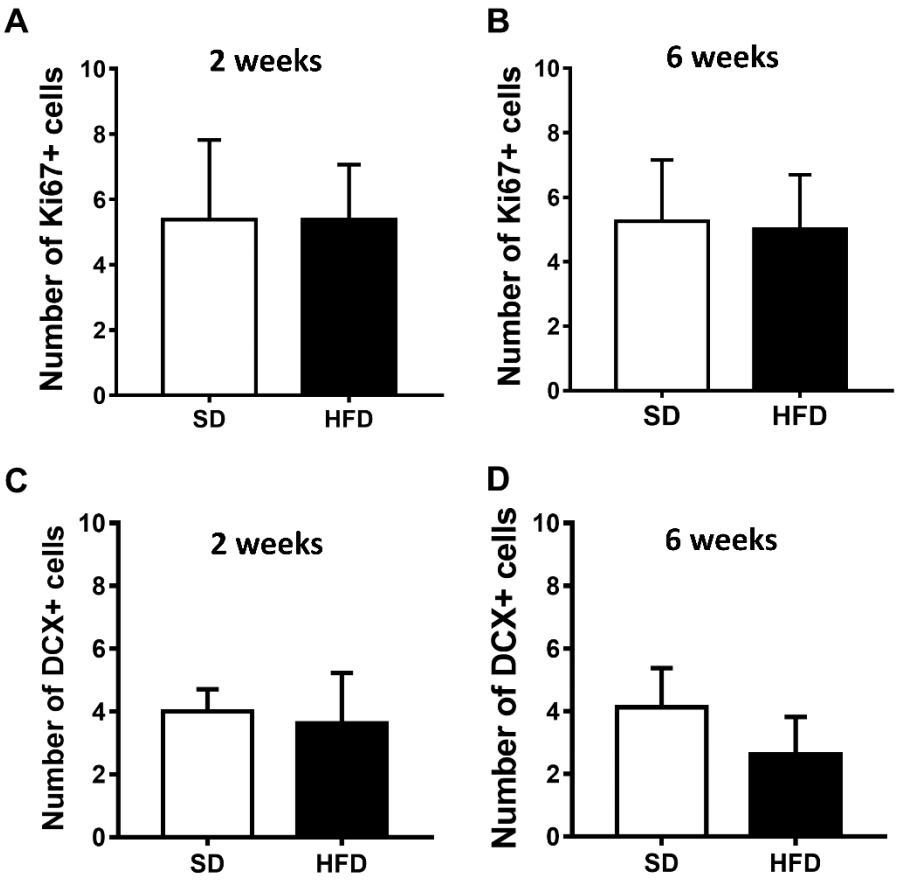
Supplementary Figure 4. The effects of stroke on the number of neuronal myelin fiber bundles after tMCAO. The number of neuronal myelin fiber bundles after tMCAO (A).

Means ±SD, Two-way ANOVA followed by Tuckey's test. ## p<0.01 versus contralateral hemisphere of SD-fed mice, ### p<0.001 versus contralateral hemisphere of HFD-fed mice (SD stroke n=14, HFD stroke n=8). Representative images of Luxol fast blue staining of neuronal myelin fiber bundles in SD- and HFD-fed mice at 6 weeks after tMCAO (B and C).

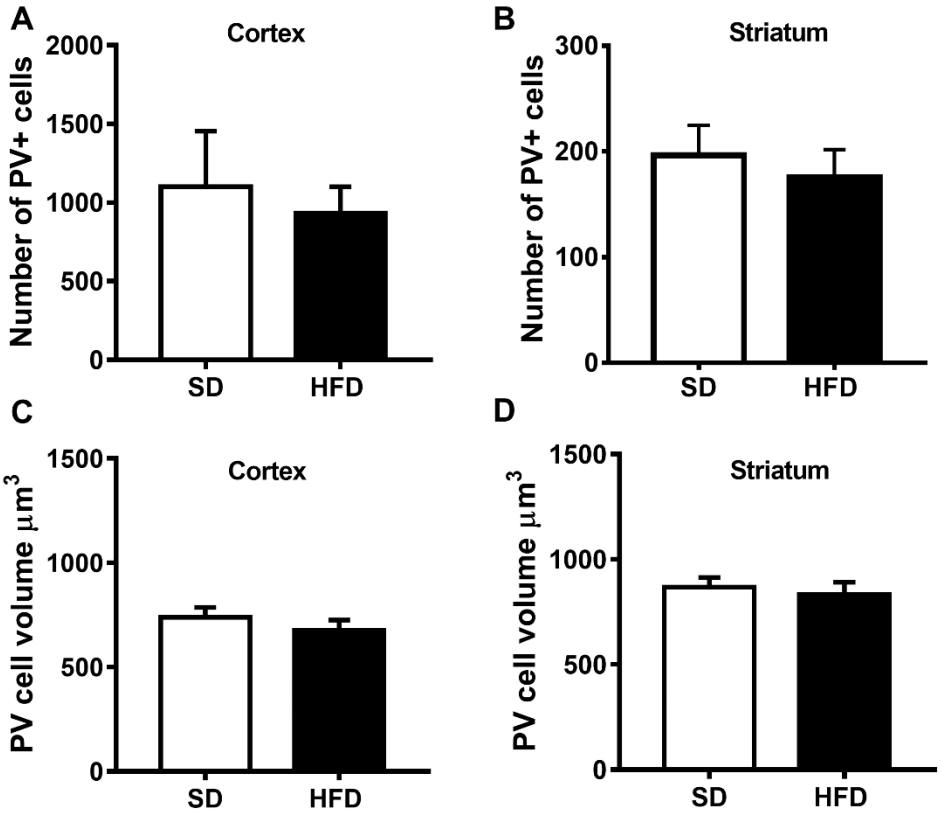


Supplementary Figure 5. The effects of T2D on neural stem cells proliferation and neuroblast formation at 2 and 6 weeks after sham surgery. The number of Ki67+ cells in SVZ at 2 and 6 weeks after sham surgery (A and B). The number of DCX+ cells in striatum at 2 and 6 weeks after sham surgery (C and D). Means ± SD, Welch's t-test. At 2 weeks after

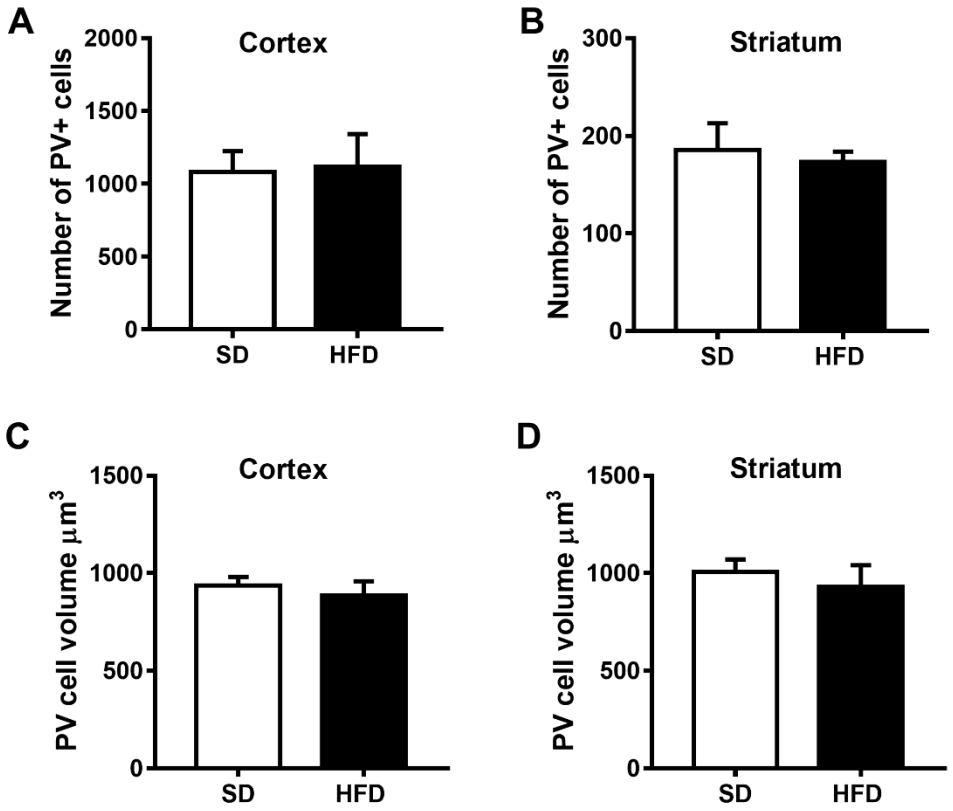
sham surgery; sham SD-fed mice, n=4 and sham HFD-fed mice, n=4. At 6 weeks after sham surgery; sham SD-fed mice, n=4 and sham HFD-fed mice, n=4.



Supplementary Figure 6. T**he effects of T2D on neural stem cells proliferation and neuroblast formation at 2 and 6 weeks in these rare gyrus of hippocampus after sham surgery.** The number of Ki67+ cells in SGZ at 2 and 6 weeks (A and B). The number of DCX+ cells in GCL at 2 and 6 weeks (C and D). Means ± SD, Welch's t-test. At 2 weeks after sham surgery; sham SD-fed mice, n=4 and sham HFD-fed mice, n=4. At 6 weeks after sham surgery; sham SD-fed mice, n=4 and sham HFD-fed mice, n=4.



Supplementary Figure 7. The effects of T2D on the number and soma volume of ---- cortical and striatal PV+ interneurons at 2 weeks after sham surgery. The number of PV+ interneurons in cortex and striatum (A and B). The PV soma volume in cortex and striatum (C and D). Means ± SD, Welch's t-test. sham SD-fed mice, n=4 and sham HFD-fed mice, n=4.



Supplementary Figure 8. The effects of T2D on the number and soma volume of cortical and striatal PV+ interneurons at 6 weeks after sham surgery. The number of PV+ interneurons in cortex and striatum (A and B). The PV soma volume in cortex and striatum (C and D). Means ± SD, Welch's t-test. sham SD-fed mice, n=4 and sham HFD-fed mice, n=4.