

Fig. S1. TDP-43 expression lowered the level of exogenous mycUPF1 co-expression in transfected human embryonic kidney 293T cells ($P < 0.05$), but did not affect the expression level of the green fluorescent protein (GFP) control. The bands were normalized to glyceraldehyde-3-phosphate dehydrogenase (GAPDH).

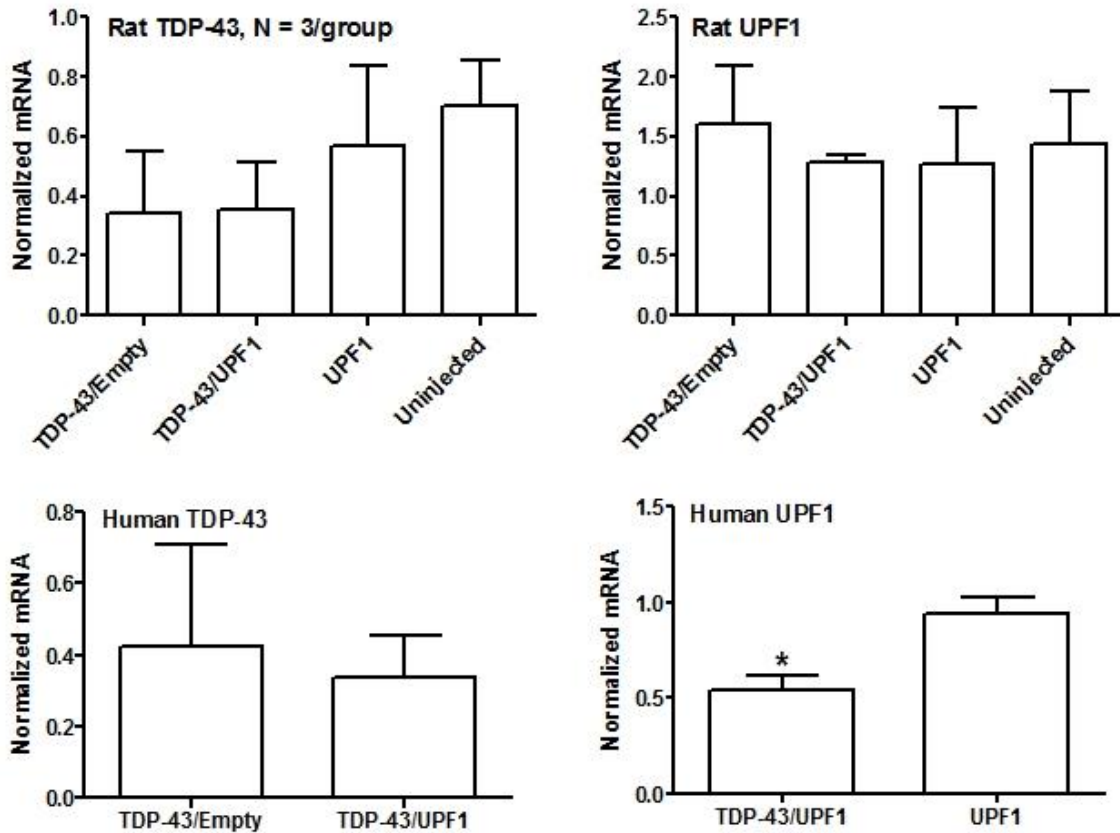


Fig. S2. RT-qPCR analyses of TDP-43 and UPF1 transcripts. Results are from three subjects per condition. Using RNA extracted from the cerebellum, PCR primers generated products of the expected sizes in assays of endogenous rat TDP-43 and UPF1 mRNAs and the recombinant forms of human TDP-43 and mycUPF1 mRNA. In agreement with protein data (Fig. 2), expression of human TDP-43 lowered the level of human mycUPF1 mRNA compared to when mycUPF1 was expressed alone ($P < 0.05$). PCR data were normalized to the expression of glyceraldehyde-3-phosphate dehydrogenase (GAPDH).

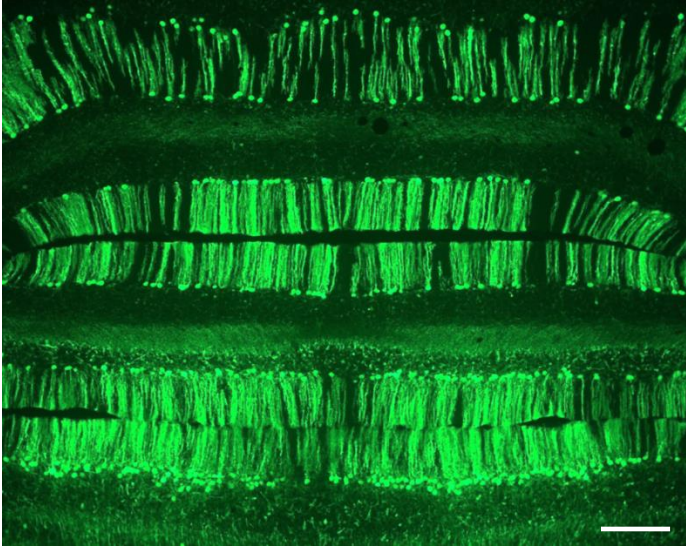


Fig. S3. As a comparison to Fig. 5F, the rat cerebellum is more thoroughly transduced in subjects treated with AAV9 GFP as in Wang et al. (2010).⁶ Same magnification as Fig. 5F. Bar = 268 μ m.

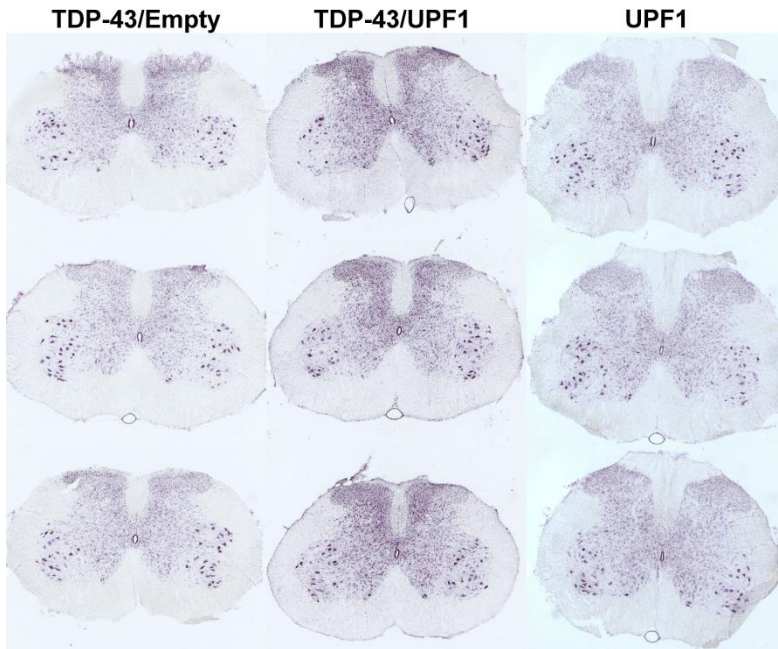


Fig. S4. Nissl analysis of lumbar spinal cord. Large motor neurons are visualized in the ventral horn. Three serial sections from the lumbar region are shown for one subject from the TDP-43/Empty, TDP-43/UPF1, and UPF1 only vector groups. There was no indication of neuronal loss in the TDP-43/Empty group, which was the most impaired behaviorally, relative to the other groups.

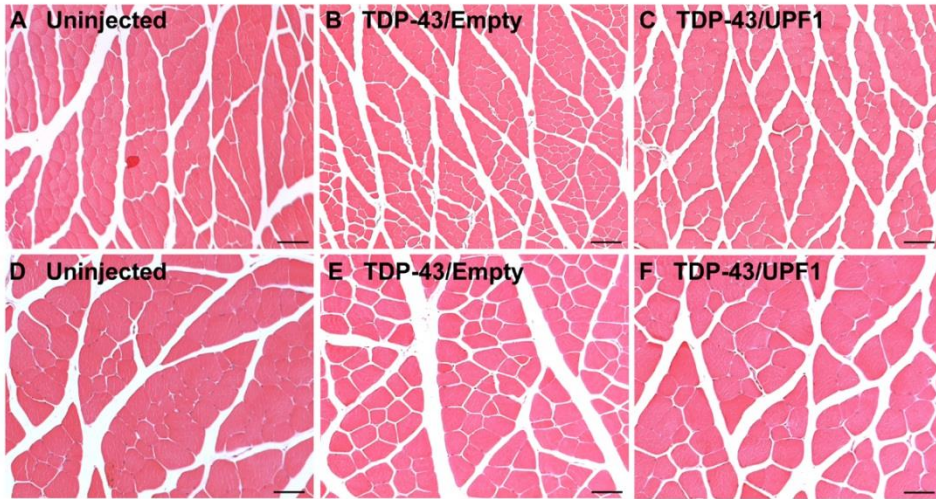


Fig. S5. Gastrocnemius muscle (hematoxylin & eosin stain). A-C) Samples from untreated control group, AAV9 TDP-43/Empty group, AAV9 TDP-43/UPF1 group, respectively. D-F) Same groups as above at higher magnification. We did not observe severe muscle atrophy induced by the AAV9 TDP-43 in this study. Bar in A = 134 μ m; same magnification in A-C. Bar in D = 67 μ m; same magnification in D-F.

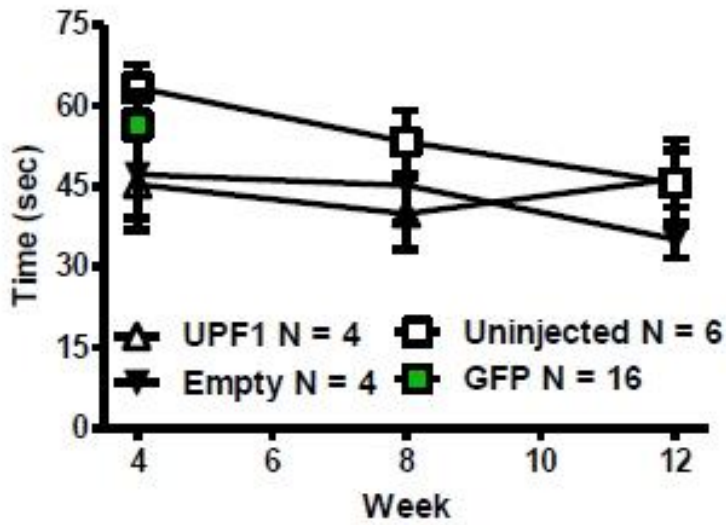


Fig. S6. Control vector treatments do not affect rotarod performance. Groups of uninjected rats, and rats injected with either AAV9 empty vector or AAV9 UPF1 are shown with N value indicated. There were no statistical differences among the control groups. A group of AAV9 GFP rats are also shown for the 4 week time point demonstrating that this control treatment also does not affect rotarod performance. The AAV9 GFP data point is reference data from a previously published study.⁶