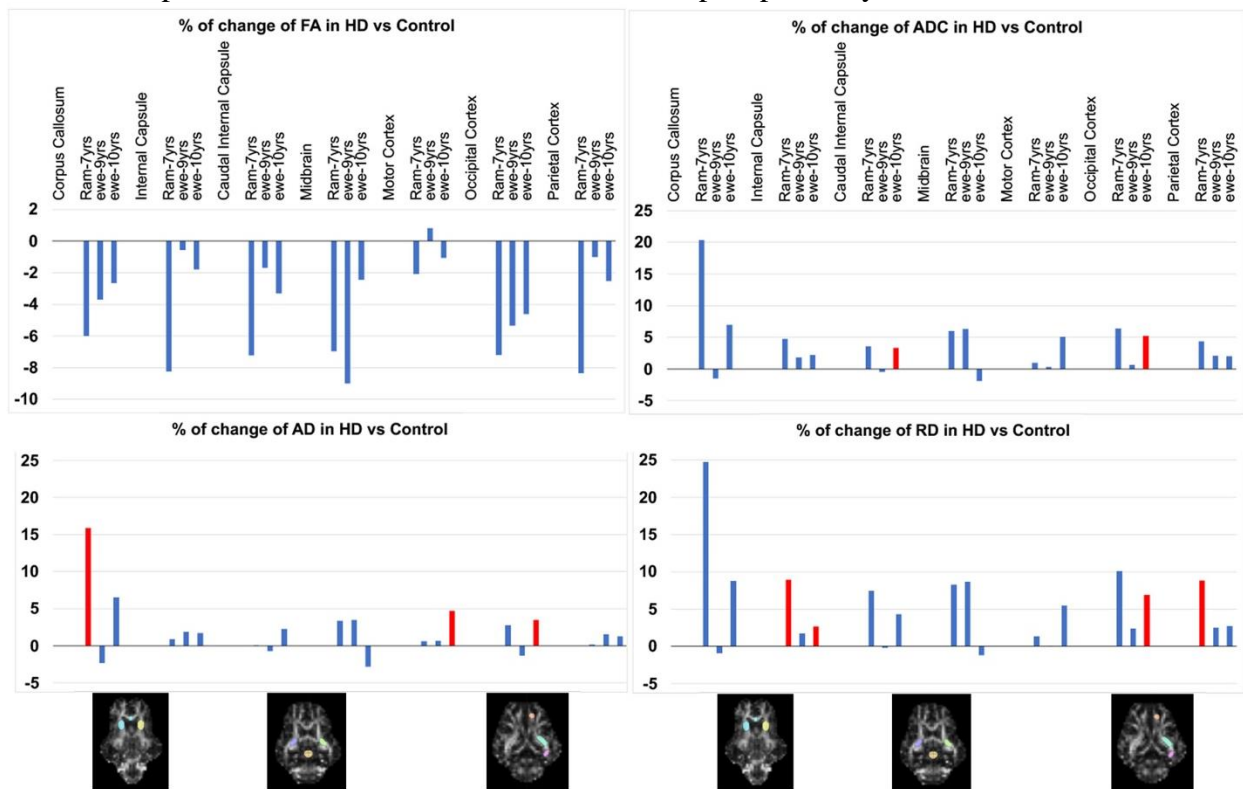


# Supplementary Material

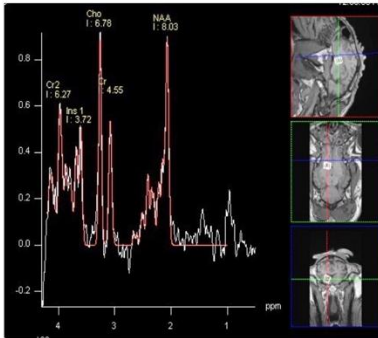
## Brain Alterations in Aged OVT73 Sheep Model of Huntington's Disease: An MRI Based Approach

**Supplementary Figure 1.** Percentage of change of DTI scalars in HD sheep with respect to the control sheep for 7-year-old males and 9- and 10-year-old females. The DTI scalars calculated in regions of interest (ROIs) located in corpus callosum, rostral and caudal internal capsule, midbrain, motor, parietal, and occipital cortices. Red bars show the change that is significantly different than control sheep. Ram and ewe are male and female sheep respectively.

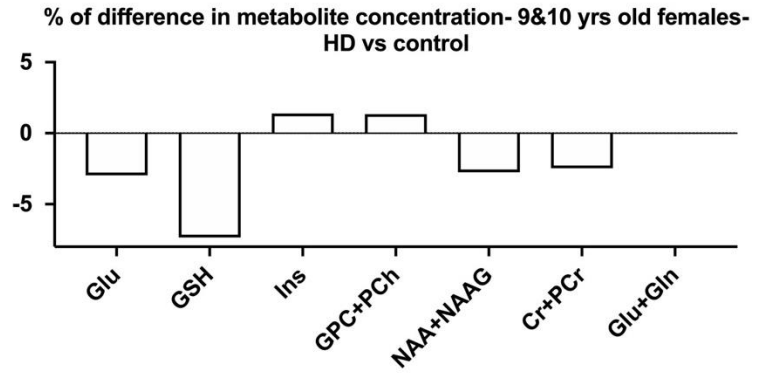


**Supplementary Figure 2.** A) Example of MR spectroscopy data set. B) Visual representation of percentage of total change of metabolite concentrations in 9- and 10-year-old HD females with respect to the control female sheep.

**A**



**B**



**Supplementary Table 1.** Quantified values of mHTT, DTI scalars, and MRS for sheep in longitudinal study.

female sheep numbers-longitudinal study	transgenic					normal				
	HD807	HD822	HD849	HD851	HD869	HD843	HD845	HD873	HD882	
<b>mHTT</b>										
MEAN HTT levels [fM]-9-year-old	32.92	79.75	134.19	98.66	124.18	12.02	0.00	0.84	0.00	Fig. 1C
MEAN HTT levels [fM]-10-year-old	111.01	93.84	104.90	48.89	157.83	14.17	21.21	33.50	9.39	Fig. 1C
<b>DTI</b>										
Internal Capsule-FA-9-year-old	1.01	1.16	0.97		1.05	0.95	1.05	1.00		Fig. 3B
Internal Capsule-FA-10-year-old	0.88	0.82	0.94		0.89	1.00	1.02	0.98		Fig. 3B
Caudal Internal Capsule-FA-9-year-old	1.04	1.15	1.01		1.03	0.96	1.03	1.01		Fig. 3B
Caudal Internal Capsule-FA-10-year-old	0.94	0.94	1.01		0.95	1.02	0.96	1.02		Fig. 3B
Motor cortex-FA-9-year-old	1.05	1.20	0.98		1.06	1.00	1.07	0.93		Fig. 3B
Motor cortex-FA-10-year-old	0.95	0.83	0.95		0.83	1.00	1.00	1.00		Fig. 3B
Parietal cortex-FA-9-year-old	1.07	1.16	0.99		1.05	0.98	1.03	0.99		Fig. 3B
Parietal cortex-FA-10-year-old	0.96	0.93	0.95		0.94	1.00	0.94	1.05		Fig. 3B
Occipital cortex-FA-9-year-old	1.03	1.02	0.95		0.97	0.91	1.06	1.03		Fig. 3B
Occipital cortex-FA-10-year-old	0.94	0.90	0.99		0.90	0.97	0.98	1.05		Fig. 3B
Internal Capsule-ADC-9-year-old	0.98	0.92	1.00		0.95	1.00	0.98	1.02		Fig. 3C
Internal Capsule-ADC-10-year-old	1.06	1.14	1.06		1.03	1.01	0.97	1.02		Fig. 3C
Caudal Internal Capsule-ADC-9-year-old	0.94	0.97	1.06		0.95	1.01	0.99	1.00		Fig. 3C
Caudal Internal Capsule-ADC-10-year-old	1.06	1.09	1.03		1.00	1.00	1.02	0.98		Fig. 3C
Motor cortex-ADC-9-year-old	1.03	0.84	1.11		0.91	1.04	0.96	1.00		Fig. 3C
Motor cortex-ADC-10-year-old	1.05	1.11	1.04		1.12	0.99	1.01	1.00		Fig. 3C
Parietal cortex-ADC-9-year-old	0.93	1.00	1.05		0.93	1.00	0.98	1.02		Fig. 3C
Parietal cortex-ADC-10-year-old	1.03	1.08	1.08		1.01	1.04	0.99	0.97		Fig. 3C
Occipital cortex-ADC-9-year-old	0.92	0.96	1.09		0.95	1.03	0.97	1.00		Fig. 3C
Occipital cortex-ADC-10-year-old	1.04	1.07	1.16		1.10	1.02	0.99	0.98		Fig. 3C
Internal Capsule-RD-9-year-old	0.98	0.88	1.01		0.93	1.01	0.96	1.03		Fig. 3D
Internal Capsule-RD-10-year-old	1.10	1.22	1.08		1.06	1.01	0.96	1.03		Fig. 3D
Caudal Internal Capsule-RD-9-year-old	0.93	0.94	1.06		0.93	1.02	0.97	1.01		Fig. 3D
Caudal Internal Capsule-RD-10-year-old	1.08	1.11	1.02		1.00	1.00	1.03	0.97		Fig. 3D
Motor cortex-RD-9-year-old	1.03	0.80	1.11		0.89	1.05	0.94	1.02		Fig. 3D
Motor cortex-RD-10-year-old	1.05	1.17	1.06		1.18	0.98	1.01	1.01		Fig. 3D
Parietal cortex-RD-9-year-old	0.92	0.96	1.05		0.91	1.01	0.96	1.03		Fig. 3D
Parietal cortex-RD-10-year-old	1.03	1.10	1.08		1.02	1.04	1.00	0.96		Fig. 3D
Occipital cortex-RD-9-year-old	0.92	0.97	1.11		0.97	1.06	0.94	1.00		Fig. 3D
Occipital cortex-RD-10-year-old	1.05	1.09	1.16		1.12	1.04	0.99	0.97		Fig. 3D
<b>MRS</b>										
Ins-9-year-old	0.91	0.90	0.39	0.71	0.69			1.09	0.91	Fig. 5A
Ins-10-year-old	1.17	1.04	0.99	2.03	1.04			1.03	1.06	Fig. 5A
NAA-9-year-old	0.96	1.13	1.23	1.27	1.20	1.01	1.05	0.93	1.02	Fig. 5A
NAA-10-year-old	0.97	0.88	0.99	1.17	0.78	0.94	1.04	1.10	0.92	Fig. 5A
NAA+NAAG-9-year-old	0.92	1.03	1.08	1.02	0.97		1.03	0.98	0.95	Fig. 5A
NAA+NAAG-10-year-old	0.92	0.91	0.79	1.01	0.76		1.08	0.96	0.95	Fig. 5A
GPC+PCh-9-year-old	0.99	1.05	0.96	0.93	0.96	0.96			1.00	Fig. 5A
GPC+PCh-10-year-old	1.21	0.89	0.93	1.12	0.89	0.96			1.02	Fig. 5A

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**Supplementary Table 2.** DTI acquisition parameters for each group of sheep in the study.

<b>Sheep groups</b>	<b>DTI voxel size</b>	<b>Figure # illustrating the data</b>
7-year-old male sheep	2.5X2.5X2.5 mm <sup>3</sup>	Fig. 2
9-year-old female sheep	2.5X2.5X2.5 mm <sup>3</sup>	Fig. 2
10-year-old female sheep	2X2X2 mm <sup>3</sup>	Fig. 2
sheep in longitudinal study	2.5X2.5X2.5 mm <sup>3</sup>	Fig. 3