Automated CANTAB neuropsychological assessment

The automated CANTAB tests yielded more variable results. As shown in Table 7, only 9 of the 22 measures revealed highly significant progression over time (Years, $F_{5,69} = 5.37 - 27.45$, all $p<0.001$), this subset included, most notably, 5 of the subtests of the ED/ID shift test. Moreover, three of these measures (compound reversal, ID shift and ID shift reversal) also differed significantly between the two groups in both the main effect of Group and the interaction with Time (see Table 5). However, on these three measures the transplanted patients performed worse than the reference controls, although only at the very last time bin 6-8 years post transplantation, and notably there were no significant differences either between the groups or in overall disease progression on the sub-test that has often been considered as defining of the fundamental cognitive impairment of HD, ED shift.

Supplementary Table 2. Automated CANTAB neuropsychology assessments

Tests	Years	0-2 (T1-3) Mean ± sem	2-4 (T1-1) Mean ± sem	4-6 (T1+1) Mean ± Sem	6-8 (T1+3) Mean ± sem	8-10 (T1+5) Mean ± sem	10-12 / (T1+7) Mean ± sem	Groups $F_{1,15}$	Time $F_{5,58}$	GroupxTime $F_{5,58}$
Motor screen	Control	1349 ± 90	1227 ± 29	1228 ± 77	1236 ± 91	1442 ± 164	1509 ± 241	0.64	1.65	**4.97 +****
	Transplant	1276 ± 82	1266 ± 125	1355 ± 109	1359 ± 79	1309 ± 188	1248 ± *			
Pattern Recognition (no. correct)	Control	19.4 ± 0.7	19.7 ± 0.7	19.2 ± 0.8	17.1 ± 0.7	18.0 ± 1.2	18.4 ± 1.4	2.69	**11.86****	3.82*
	Transplant	20.8 ± 0.2	18.3 ± 0.7	18.5 ± 0.3	16.3 ± 0.6	14.5 ± 1.0	11.0 ± *			
Pattern Recognition (latencies)	Control	2.83 ± 0.18	2.97 ± 0.23	3.33 ± 0.28	3.54 ± 0.39	7.41 ± 3.66	3.64 ± 0.71	0.26	4.33*	0.27
	Transplant	2.79 ± 0.27	2.77 ± 0.43	3.49 ± 0.52	3.76 ± 0.68	9.65 ± 5.68	3.80 ± *			
Spatial Recognition (no. correct)	Control	15.4 ± 0.6	15.5 ± 0.4	14.8 ± 0.4	14.0 ± 0.5	14.4 ± 0.6	15.1 ± 0.2	0.31	**7.16****	2.47
	Transplant	16.7 ± 0.4	15.7 ± 0.6	15.3 ± 0.5	15.0 ± 0.8	12.9 ± 0.8	16.1 ± *			
Spatial Recognition (latencies)	Control	2.91 ± 0.19	2.99 ± 0.18	3.31 ± 0.29	3.38 ± 0.40	3.93 ± 0.63	3.00 ± 0.59	0.03	4.25*	0.63
	Transplant	2.82 ± 0.31	2.76 ± 0.35	3.29 ± 0.38	3.91 ± 0.79	3.40 ± 0.72	2.88 ± *			
ID/ED Set Shifting (simple discrimination)	Control	6.87 ± 0.17	6.58 ± 0.12	6.96 ± 0.33	7.04 ± 0.26	6.43 ± 0.17	6.60 ± 0.25	5.01*	0.96	3.40*
	Transplant	6.72 ± 0.17	6.80 ± 0.20	7.20 ± 0.34	7.10 ± 0.66	16.62 ± 10.13	8.00 ± *			
ID/ED Set Shifting (simple reversal)	Control	7.17 ± 0.13	7.00 ± 0	7.00 ± 0	7.00 ± 0	7.00 ± 0	6.80 ± 0.49	6.23*	1.31	3.12*
	Transplant	7.10 ± 0.10	7.00 ± 0	7.50 ± 0.39	7.40 ± 0.40	13.00 ± 6.00	7.00 ± *			
ID/ED Set Shifting (compound discrimin.)	Control	7.42 ± 0.60	7.12 ± 0.76	7.46 ± 0.56	7.25 ± 0.57	7.79 ± 0.71	6.20 ± 0.80	0.46	1.09	0.82
	Transplant	6.50 ± 0.35	7.20 ± 1.60	6.60 ± 0.60	7.40 ± 1.40	11.50 ± 5.50	6.00 ± *			
ID/ED Set Shifting (compound 2)	Control	6.29 ± 0.25	6.75 ± 0.66	6.37 ± 0.33	6.17 ± 0.13	6.07 ± 0.07	6.00 ± 0	1.40	1.03*	3.02*
	Transplant	6.26 ± 0.26	6.00 ± 0	6.00 ± 0	6.00 ± 0	11.00 ± 5.00	6.00 ± *			
ID/ED Set Shifting (compound reversal)	Control	7.54 ± 0.39	7.42 ± 0.29	7.12 ± 0.09	7.88 0.56	8.50 ± 0.67	9.20 ± 1.08	**29.56****	**7.95****	**12.49 –****
	Transplant	7.36 ± 0.29	9.40 ± 2.28	9.50 ± 2.13	15.70 8.20	18.25 ± 10.59	50.00 ± *			
ID/ED Set Shifting (ID shift)	Control	6.88 ± 0.37	7.17 ± 0.76	7.29 ± 0.93	8.08 ± 0.74	6.71 ± 0.31	10.70 ± 2.84	**42.62****	**27.45****	**39.87 –****
	Transplant	6.38 ± 0.17	6.10 ± 0.10	6.40 ± 0.19	6.30 ± 0.20	17.75 ± 10.76	50.00 ± *			
ID/ED Set Shifting (ID shift reversal)	Control	7.38 ± 0.22	7.00 ± 0	7.54 ± 0.28	8.67 ± 1.38	7.86 ± 0.64	7.80 ± 0.37	**54.54****	**22.04****	**49.55 –****
	Transplant	7.20 ± 0.20	7.00 ± 0	7.40 ± 0.40	7.00 ± 0.00	17.75 ± 10.75	50.00 ± *			
ID/ED Set Shifting (ED shift)	Control	20.1 ± 3.9	18.7 ± 3.4	18.9 ± 2.7	27.7 ± 6.0	14.6 ± 4.1	20.4 ± 7.0	0.37	4.18*	3.62*
	Transplant	10.5 ± 0.8	24.8 ± 8.24	15.4 ± 4.0	22.3 ± 8.0	21.5 ± 9.5	50.0 ± *			
ID/ED Set Shifting (ED shift reversal)	Control	16.1 ± 4.6	12.4 ± 3.6	8.8 ± 1.1	23.6 ± 5.8	10.8 ± 2.6	15.3 ± 3.6	0.70	**5.90****	4.14*
	Transplant	7.3 ± 0.2	17.9 ± 8.1	15.8 ± 0.6	17.9 ± 8.1	19.0 ± 10.4	50.0 ± *			
ID/ED Set Shifting (total scores)	Control	85.8 ± 7.5	80.2 ± 6.3	77.5 ± 3.3	103.4 ± 11.9	75.9 ± 6.8	89.0 ± 11.8	7.40*	**10.15****	**14.36 –****
	Transplant	65.4 ± 1.6	92.2 ± 17.3	81.8 ± 11.5	97.1 ± 15.2	146.4 ± 78.5	277.0 ± *			
Matching to sample (no. correct)	Control	47.9 ± 0.1	48.0 ± 0	48.0 ± 0	47.8 ± 0.1	47.8 ± 0.1	47.8 ± 0.2	0.03	**3.86****	1.94
	Transplant	48.0 ± 0	48.0 ± 0	48.0 ± 0	47.5 ± 0.3	48.0 ± 0	* *			
Matching to sample (reaction times)	Control	3.22 ± 0.19	3.17 ± 0.19	3.85 ± 0.39	3.85 ± 0.46	4.13 ± 0.46	3.94 ± 0.58	0.14	**5.39****	1.20
	Transplant	2.95 ± 0.33	2.86 ± 0.38	3.69 ± 0.49	5.02 ± 1.14	4.83 ± 0.13	* *			

Matching to sample (movement times)	Control	1.09 ± 0.09	1.15 ± 0.10	1.09 ± 0.91	1.21 ± 0.21	1.25 ± 0.41	1.07 ± 0.20	2.68	3.11*	4.67*
	Transplant	1.02 ± 0.12	0.99 ± 0.12	1.74 ± 0.78	2.31 ± 1.07	2.53 ± 1.04	* *			
Spatial Span	Control	5.37 ± 0.33	5.12 ± 0.28	4.77 ± 0.38	4.33 ± 0.34	4.86 ± 0.52	5.20 ± 0.60	0.78	4.34**	0.36
	Transplant	4.94 ± 0.29	4.60 ± 0.37	4.60 ± 0.29	3.80 ± 0.37	4.00 ± 0.82	4.00 ± *			
Spatial Working Memory	Control	32.4 ± 6.2	34.7 ± 7.1	34.4 ± 7.4	40.6 ± 8.4	22.4 ± 12.2	29.6 ± 9.1	0.24	**15.17****	2.70*
	Transplant	32.7 ± 6.9	28.0 ± 5.9	40.5 ± 6.9	43.2 ± 5.1	50.0 ± 8.0	60.0 ± *			
Tower of London (no. of strategies)	Control	32.6 ± 1.4	31.7 ± 2.0	32.3 ± 1.8	32.8 ± 1.8	29.6 ± 3.0	32.3 ± 2.9	0.03	3.09*	1.31
	Transplant	35.0 ± 0.6	33.2 ± 1.9	34.7 ± 1.6	34.3 ± 1.4	29.2 ± 6.3	32.0 ± *			
Tower of London (total tries)	Control	2.21 ± 0.19	2.31 ± 0.12	2.48 ± 0.18	2.64 ± 0.28	2.70 ± 0.38	2.54 ± 0.37	0.61	3.64*	0.15
	Transplant	2.12 ± 0.12	2.22 ± 0.16	2.16 ± 0.10	2.20 ± 0.20	2.37 ± 0.37	3.00 ± *			

******, P<0.001; *, P<0.05 in individual analysis (not significant when correcting for multiple comparisons); Transplant improved (+), or impaired (-) with respect to the reference controls