# Supplementary

Supplementary Table 1:

Refractory abnormalities the parkinsonian patients

No°	Diopter		Correction (dpt)		Eye disease	Add. information
	right	*left*	*right*	*left*		
1	0	+0,5	-	-	Cataract	
2	0	0	-	-	age farsightedness	just reading glasses
3	+2,25	+2,25	+2,0	+2,0	-	
4	+1,0	+1,5	+1,0	+1,0	-	
5	+1,5	+1,5	+1,0	+1,0	-	
6	+1,5	+1,5	+1,0	+1,0	-	
7	-1,5	-1,25	-1,0	-1,0	Cataract	
8	0	+1,0	-	-	Disc drusen	no lenses tolerated
9	+0,25	+0,75	-	-	Cataract	
10	-1,0	+0.25	-1.0	-	Cataract	
11	-0.5	+1,5	-	+1,0	Cataract	
12	+0,5	+1,0	-	-	-	no lenses tolerated
13	+2,5	+2,5	+2,0	+2,0	-	
14	+1,5	+0,5	+1,0	-	-	
15	+4,0	+4,0	+4,0	+4,0	-	
16	-1,75	-2,0	-2,0	-2,0	-	
17	-1,75	-1,75	-2,0	-2,0	after eyelid op	
18	+1,75	-1,25	+2,0	-1,0	-	
19	-0,5	-0,25	-	-	Cataract	
20	-7,0	-6,5	-6,0	-6,0	-	
21	-1,0	-2,75	-	-3,0	Cataract	no lense on the right eye tolerated
22	+1,5	+1,25	+1,0	+1,0	-	dry eyes
23	+2,75	+2,75	+3,0	+3,0	-	-
24	+0,5	+0,5	-	-	-	-
25	0	0	-	-	Cataract, age farsightedness	just reading glasses
26	0	0	-	-	Cataract, age farsightedness	just reading glasses
27	-0,25	0	-	-	Cataract	-
28	+1,5	+1,5	+1,0	+1,0	-	-
29	-1,75	-1,75	-2,0	-2,0	-	-
30	0	0	-	-	age farsightedness	just reading glasses
31	0	0	-	-	trauma of the left eye, age farsightedness	just reading glasses
32	0	0	-	-	age farsightedness	just reading glasses
33	0	0	-	-	age farsightedness	just reading glasses

Supplementary Figure 1:

Tractography of the nigro-caudatal and nigro-collicular tract on the left side

Nigro-caudatal tract

Nigro-collicular tract

A

B
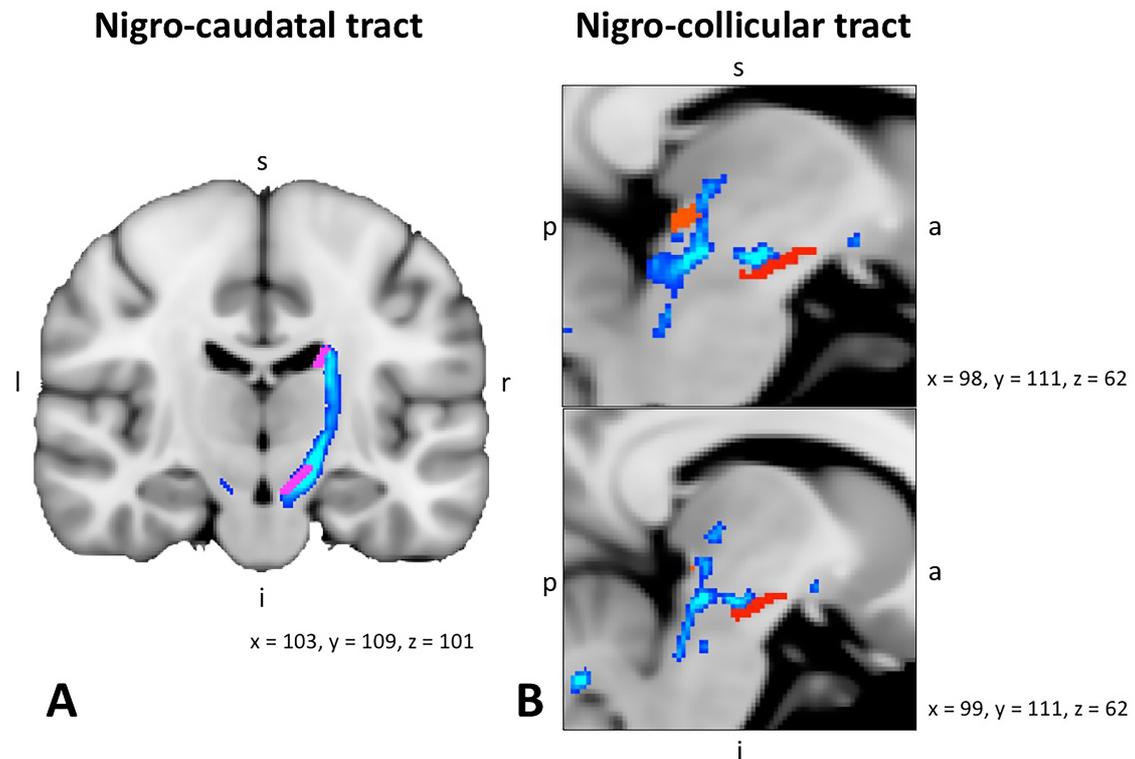
A Coronal view of projections from the SN to the CD at x = 103; y =109 and z =101.
*Pink= Masks of SN (inferior) and CD (superior); blue-lightblue= projections between these to structures.*
B Sagittal view projections from the SC (posterior-superior) to the SN (anterior-inferior) at level x =98 - 99; y =111; z = 62.
Red= Mask of SN (anterior-inferior) and SC (posterior-superior); blue-lightblue= projections between these two structures.

Supplementary Figure 2:

**Linear regression analysis of the HPS in the whole parkinsonian group**
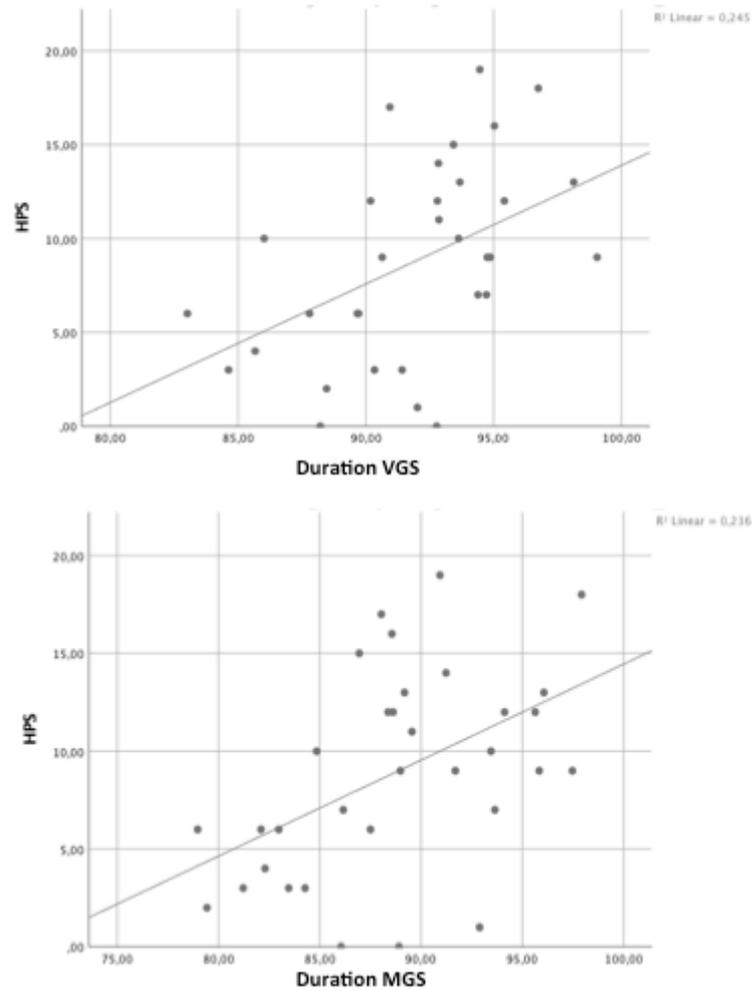
Both, the visually (top) and memory-guided (bottom) saccades are associated with the scores in the HPS reliably.

Supplementary Figure 3:

Linear regression analysis of the HPS in the DRD3- group
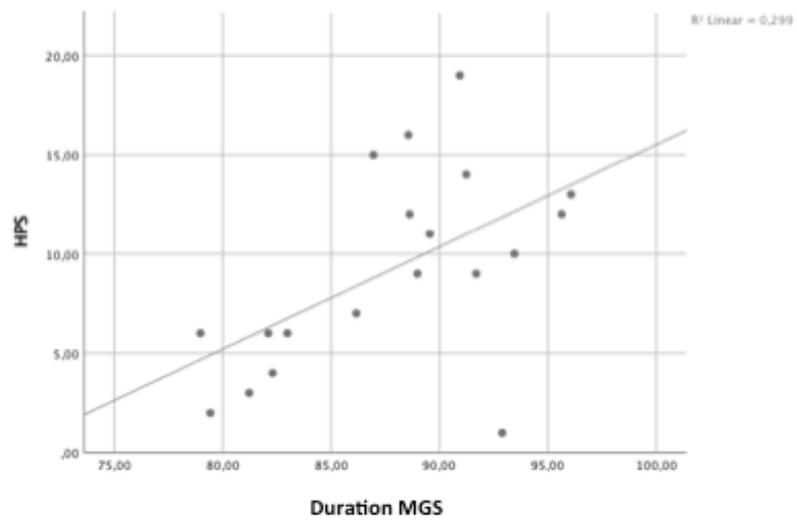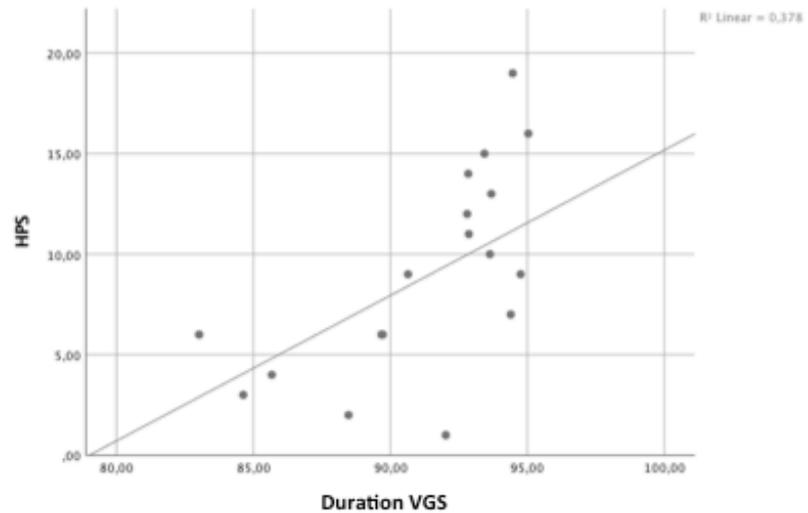
Both, the visually (top) and memory-guided (bottom) saccades are associated with the scores in the HPS reliably.

Supplementary Figure 4:

Linear regression analysis of the HPS in the DRD2- group
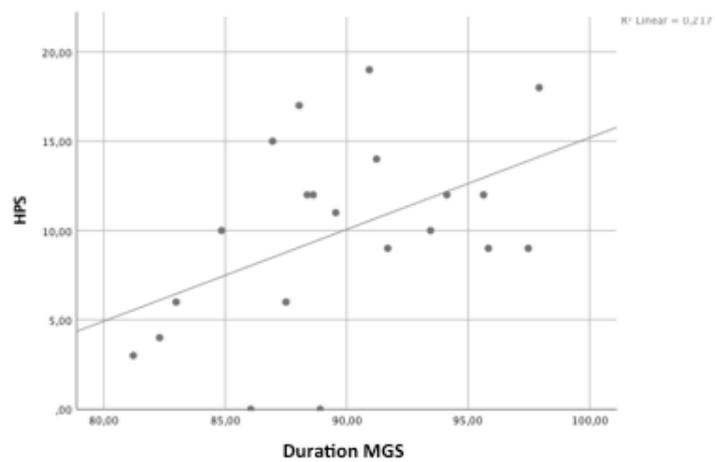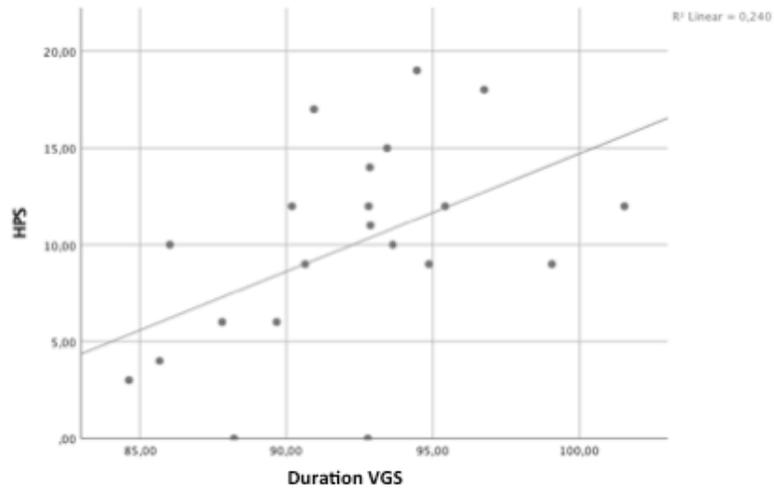

Both, the visually (top) and memory-guided (bottom) saccades are associated with the scores in the HPS reliably.

Supplementary Figure 5:

a) Preprocessing of structural data
(see https://github.sf.mpg.de/TNC/kfo2-parkinson.git;
Makefile.koeln-probands.struct2_fs)
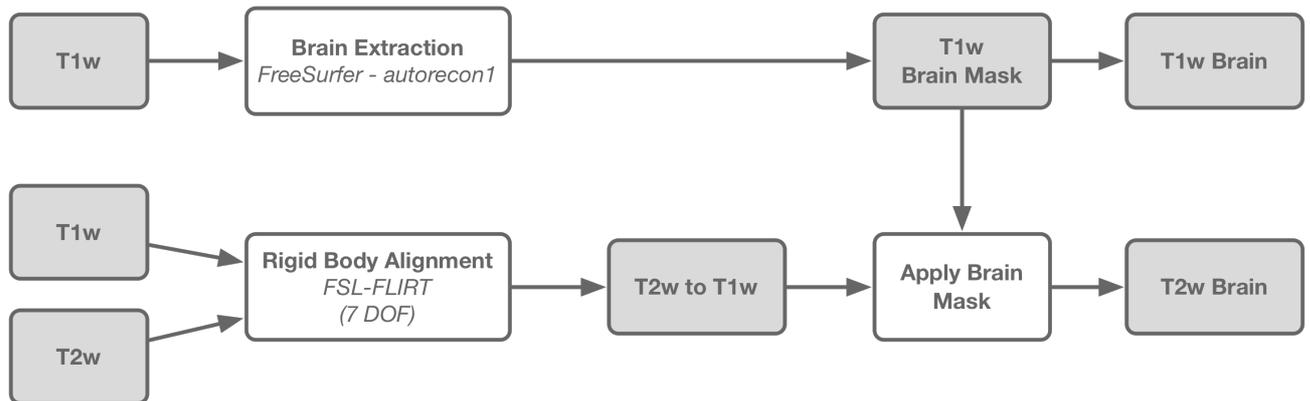
b) Preprocessing of diffusion weighted data
(see https://github.sf.mpg.de/TNC/kfo2-parkinson.git;
Makefile.koeln_prisma.dwi)
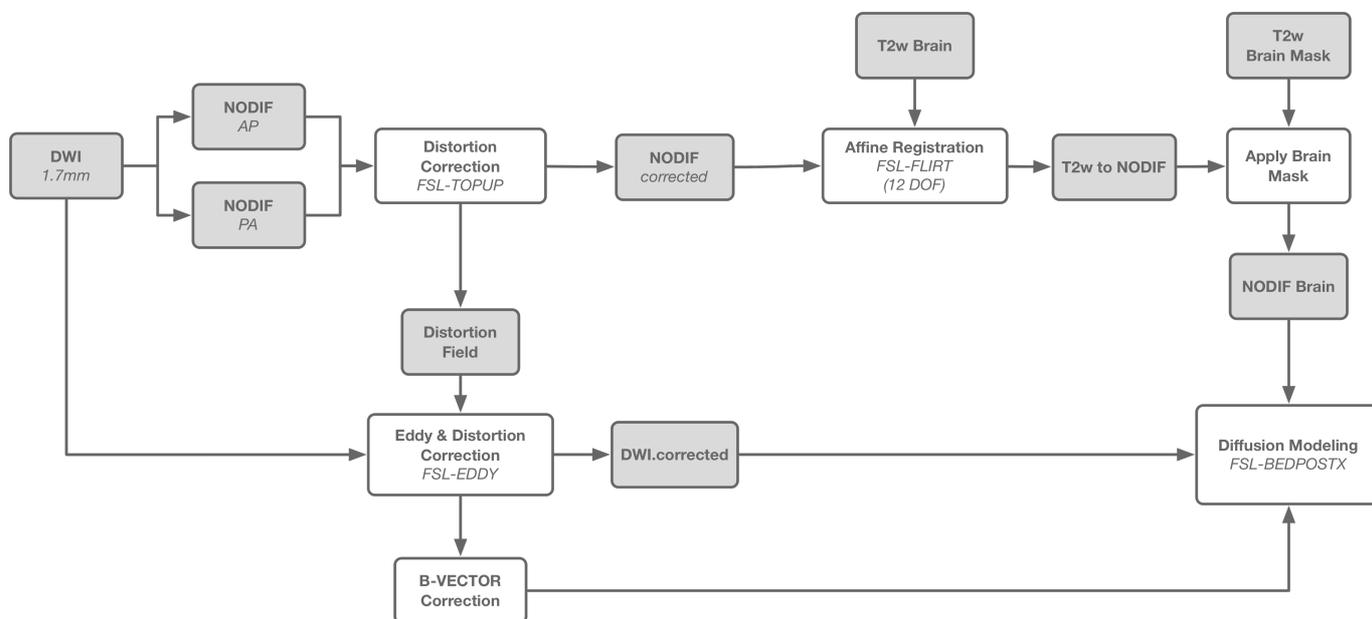
c) Registration of structural datasets to diffusion weighted data
(see https://github.sf.mpg.de/TNC/kfo2-parkinson.git;
Preproc_Eyepark)
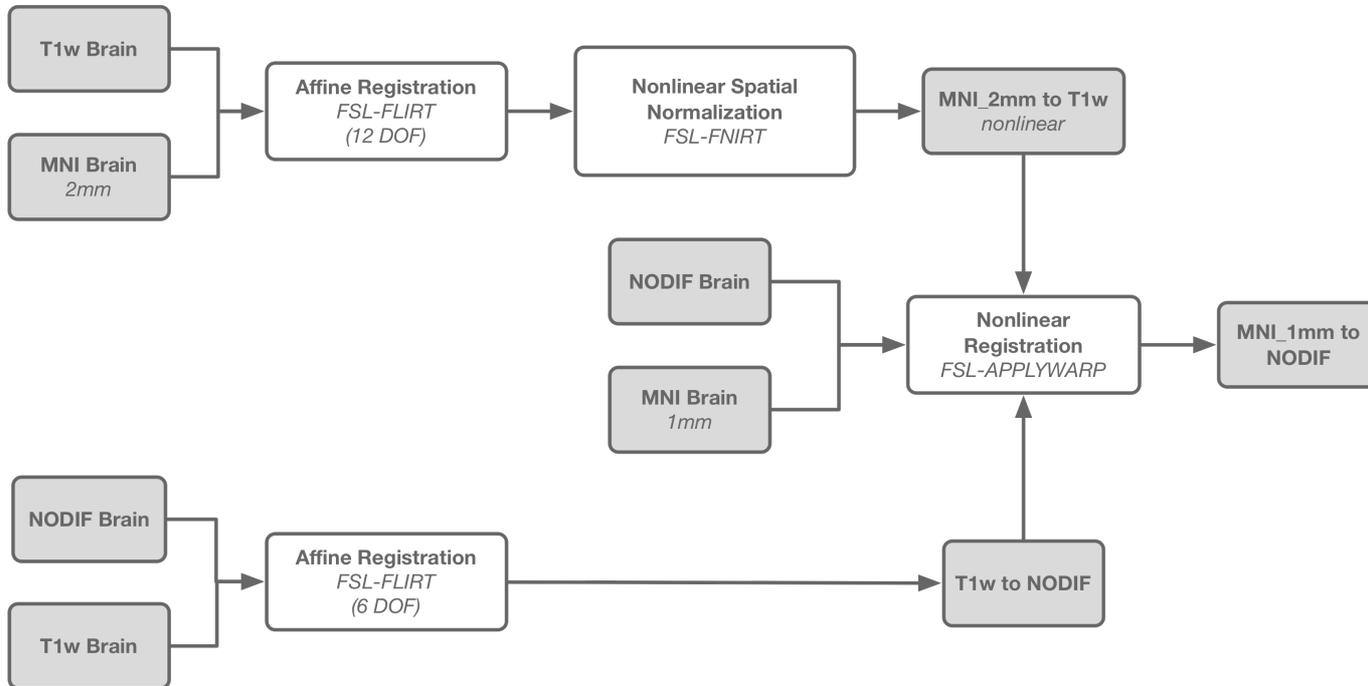
d) Processing steps to run diffusion tractography
(see https://github.sf.mpg.de/TNC/kfo2-parkinson.git;
EYE_ANAT_TRAKTOGRAPHY)