

Supplementary Material

Increased Effective Connectivity of the Left Parietal Lobe During Walking Tasks in Parkinson's Disease

Supplementary Table 1. Concentrations of HbO₂ and HHb during the walking task in the healthy controls and PD group.

Concentration	Healthy controls group	Parkinson's Disease group	p
HbO ₂			
LPFC (μmol/L)	0.25 (0.08-0.43)	0.22 (0.08-0.35)	0.709
RPFC (μmol/L)	0.33 (0.19-0.46)	0.31 (0.18-0.44)	0.867
LPL (μmol/L)	0.11 (0.01-0.22)	0.16 (0.06-0.26)	0.554
RPL (μmol/L)	0.16 (0.06-0.27)	0.18 (0.05-0.30)	0.880
HHb			
LPFC (μmol/L)	-0.03 (-0.08-0.01)	-0.02 (-0.06-0.02)	0.648
RPFC (μmol/L)	-0.04 (-0.07-0.00)	-0.01 (-0.05-0.03)	0.339
LPL (μmol/L)	-0.03 (-0.07-0.00)	-0.03 (-0.08-0.01)	0.992
RPL (μmol/L)	-0.05 (-0.09--0.02)	-0.04 (-0.08-0.00)	0.665

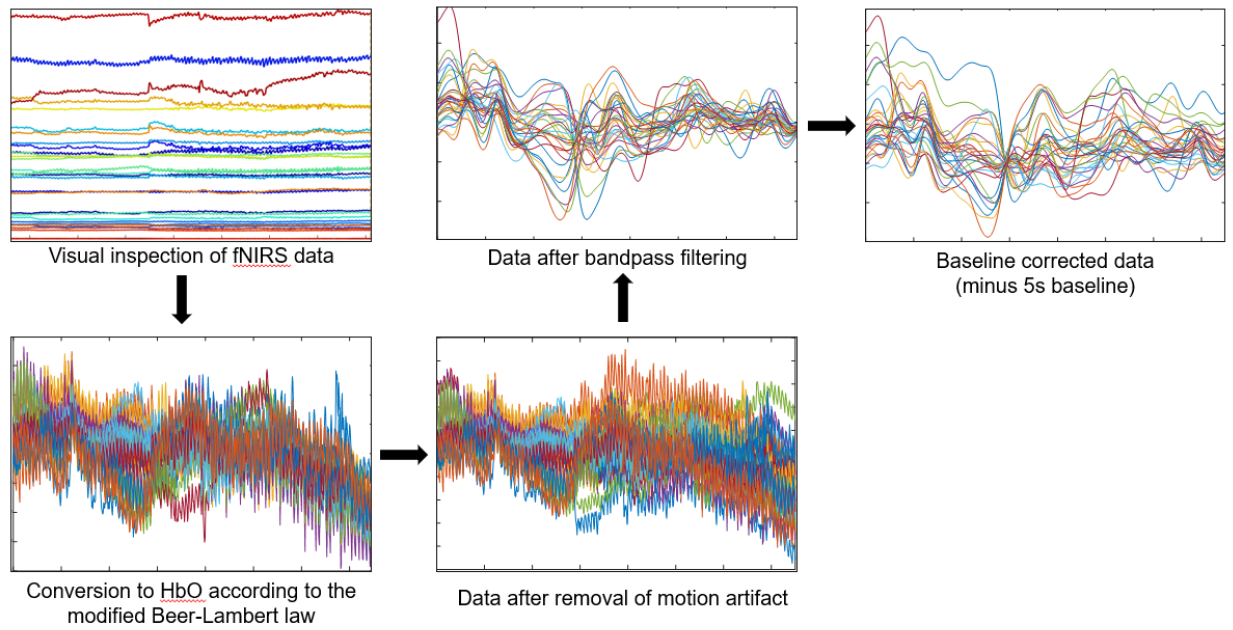
Values are mean (95% confidence intervals)

Supplementary Table 2. EC coupling strength during the walking task in healthy controls and PD group.

EC type	Healthy controls group	Parkinson's Disease group	p
LPFC→RPFC	0.62 (0.60-0.64)	0.60 (0.58-0.63)	0.240
LPFC→LPL	0.60 (0.57-0.63)	0.59 (0.57-0.62)	0.616
LPFC→RPL	0.60 (0.57-0.63)	0.59 (0.56-0.61)	0.422
RPFC→LPFC	0.62 (0.59-0.64)	0.61 (0.58-0.63)	0.582
RPFC→LPL	0.60 (0.57-0.63)	0.60 (0.57-0.62)	0.889
RPFC→RPL	0.60 (0.57-0.63)	0.60 (0.57-0.62)	0.721
LPL→LPFC	0.57 (0.53-0.60)	0.63 (0.60-0.66)	0.008*
LPL→RPFC	0.57 (0.54-0.61)	0.63 (0.60-0.66)	0.010*
LPL→RPL	0.57 (0.53-0.61)	0.62 (0.60-0.65)	0.018*
RPL→LPFC	0.58 (0.56-0.61)	0.60 (0.57-0.63)	0.420
RPL→RPFC	0.59 (0.56-0.61)	0.60 (0.57-0.63)	0.416
RPL→LPL	0.58 (0.56-0.61)	0.60 (0.57-0.63)	0.312

Values are mean (95 % confidence intervals)

* $p < 0.05$.



Supplementary Figure 1. Pre-processing flow chart. The different stages of fNIRS signals pre-processing