
Hypothalamic deep brain stimulation augments walking after spinal cord injury

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Participants		P1			P2		
Sex		F			M		
Ethnicity		Caucasian			Caucasian		
Age at study enrolment (y)		29			51		
Years after SCI at study enrolment		5 years			16 years		
International standards for neurological classification of SCI (ISNCSCI)							
Assessment before rehabilitation period (Pre) and after rehabilitation period (Post)		Pre	Post		Pre	Post	
DBS status		OFF	OFF	ON	OFF	OFF	ON
Complete / Incomplete		I	I	I	I	I	I
American Spinal Injury Association Impairment Scale (AIS)		C	C	C	D	D	D
Neurological level of injury		T1	T1	T1	C7	C8	C7
Upper Extremity Motor Score							
C5, elbow flexors (right left)		5 5	5 5	5 5	5 5	5 5	5 5
C6, Wrist extensors (right left)		5 5	5 5	5 5	5 5	5 5	5 5
C7, Elbow extensors (right left)		5 5	5 5	5 5	5 5	5 5	5 5
C8, Finger extensors (right left)		5 5	5 5	5 5	4 5	5 5	5 5
T1, Finger abductors (right left) (max. 5 per side)		4 4	4 4	4 4	3 4	3 4	4 4
Total (max. 25 25)		24 24	24 24	24 24	21 24	23 24	24 24
Lower Extremity Motor Score							
L2, hip flexors (right left)		1 2	1 4	1 4	2 3	3 4	3 4
L3, knee extensors (right left)		1 1	2 3	4 4	1 4	2 4	4 4
L4, ankle dorsiflexors (right left)		1 1	0 2	2 2	1 4	1 4	1 4
L5, long toe extensors (right left)		0 0	0 2	1 2	3 4	1 4	1 4
S1, ankle plantar flexors (right left) (max. 5 per side)		0 2	0 2	2 2	1 4	1 4	2 4
Total (max. 25 25)		3 6	3 13	10 14	8 19	8 20	11 20
Deep anal pressure (DAP)		Yes	Yes	Yes	Yes	Yes	Yes
Voluntary anal contraction (VAC)		Yes	Yes	Yes	No	Yes	Yes
Light-Touch Sensory score							
Total (max. 56 56) (right left)		50 48	50 49	53 53	54 43	55 53	56 49
Pin Prick Sensory Scores							
Total (max. 56 56) (right left)		41 28	51 34	43 48	52 23	55 52	54 44

Supplementary Table 1 | Study participants

Systolic blood pressure (mmHg) throughout the study

	Pre-Implantation (n=2)		Post-Implantation (n=38 P1, n=20 P2)	
	Mean	Std	Mean	Std
P1	108	5.66	111	11.3
P2	125	7.08	123	8.52

Diastolic blood pressure (mmHg) throughout the study

	Pre-Implantation (n=2)		Post-Implantation (n=38 P1, n=20 P2)	
	Mean	Std	Mean	Std
P1	68	2.82	71	10.42
P2	67	12.02	65	8.92

Heart beat (bpm) throughout the study

	Pre-Implantation (n=2)		Post-Implantation (n=38 P1, n=20 P2)	
	Mean	Std	Mean	Std
P1	78	10	71	10
P2	69	9	65	4

Systolic blood pressure (mmHg): immediate DBS effects

	DBS OFF (n=13 P1, n=15 P2)		DBS ON (n=10)		p-value
	Mean	Std	Mean	Std	
P1	125	8.6	135	4.8	3.8E-03
P2	115	6.5	118	3.4	0.2193

Diastolic blood pressure (mmHg): immediate DBS effects

	DBS OFF (n=13 P1, n=15 P2)		DBS ON (n=10)		p-value
	Mean	Std	Mean	Std	
P1	91	15.8	87	3.8	6.7E-03
P2	56	3.1	59	2.7	0.0472

Heart Beat (bpm): immediate DBS effects

	DBS OFF (n=13 P1, n=15 P2)		DBS ON (n=10)		p-value
	Mean	Std	Mean	Std	
P1	81.8	7.7	95.6	11.5	7.0E-04
P2	76	2.1	77	1.3	0.3769

Supplementary Table 2 | Vital sign monitoring