

Supplementary Table 1: Summary of patient admission days, anti-seizure medications (ASMs), and lorazepam (LZP)

Patient ID	Sex	Age (yrs)	Epilepsy type*	Main seizure type	EMU Days	Study Days	ASMs at admission	ASM addition (day)	Lowest ASM dose (day)	LZP dose (day)	LZP reason
001	M	47	Bitemporal	FBTCS	17	7-17	PHT 200 BID LTG 150 BID		0 (7) 0 (7)	3mg (9) 2mg (11) 1mg (12) 2mg (14) 2mg (15)	cluster cluster cluster psychosis cluster
002	F	32	Right temporal	FBTCS	25	2-25	LCM 200 BID ESL 600		0 (8) 0 (14)	1mg (3) 1mg (12) 1mg (14) 1mg (22)	sustained SPECT other* other*
003 (first stay)	M	29	Right temporal	FAS	23	2-23	BRV 50 BID LTG 200 BID CBZ CR 800 BID		0 (3) 0 (14) 0-400 (15)		
003 (second stay)	M	31	Right temporal	FAS	9	7-9	BRV 100 BID LCM 200 BID LTG 200 BID		0-25 (4) 0 (3) 200 BID (1)	1mg (5)	SPECT
004	M	49	Right temporal	FBTCS	18	3-6	CBZ CR 400-600 LCM 200 BID		100 BID (5) 0 (5)	1mg (6) 1mg (15)	sustained SPECT
005	F	59	Left temporal	FBTCS	14	6-14	VPA 500-250-500 CLB 5-10 PER 2 HS		0 (7) 0-2.5 (9) 0 (7)	1mg (11)	sustained
006	M	38	Generalized	GTCS	12	3-9	PHT 100 HS LEV 1500 BID VPA 750 BID	TPM 100 BID (2) BRV 100 BID (4) LTG 25 BID (10)	0 (2) 0 (4) 0 (7) 0 (9) 100 BID (4) 100 BID (10)	2mg (1) 1mg (7)	sustained sustained
007	M	43	Right frontotemporal	FIAS	14	3-14	LCM 150-250 CBZ CR 800 BID	PER 2 HS (11)	0 (7) 200-400 (10) 2 HS (11)		
008	M	58	Left frontotemporal	FBTCS	15	3-13	LEV 1250 BID LTG 100 BID PHT 100 BID CNZ 0.5 HS		250 BID (8) 0 (8) 0 (3) 0.5 HS (1)		
009	M	55	Right temporal	FIAS	19	4-18	BRV 100 BID		0 (3)		

							CBZ 400-600 CLB 30 HS Pb 30-60	PGB 150 BID (17)	0 (11) 0 (10) 0 (4) 150 BID (17)		
010	M	22	Generalized	GTCS	5	2-5	VPA 125 BID LCM 250 BID CLB 10 BID		125 BID (1) 250 BID (1) 0 (3)	1mg (4)	SPECT
011	F	35	Right temporoparietal	FAS	3	2-3	LCM 200 BID		200 BID (1)		
012	M	46	Left temporal	FBTCS	17	5-17	CBZ CR 600 BID CLB 30 HS LTG 200 BID		100 BID (6) 0 (7) 0 (6)	2mg (8) 2mg (12)	sustained sustained
013	F	27	Bitemporal	FAS, FIAS	24	2-14	LCM 100-150 LEV 1750 BID LTG 25 BID		0 (4) 0 (15) 0 (12)		
014	M	28	Left temporoinsular	FBTCS	5	2-5	BRV 100 BID LCM 200 BID		50 BID (2) 100 BID (2)		
015	M	48	Right temporal	FBTCS (controlled), PNES	8	2-7	LEV 750 BID CBZ CR 400 BID PGB 150 HS		750 BID (1) 0 (3) 150 HS (1)		
016	F	66	Left temporal	FAS	12	2-12	CBZ CR 300 BID LCM 50 BID		0 (3) 50 BID (1)		
017	F	24	Combined generalized and multifocal	GTCS, FBTCS	10	2-10	VPA 500 TID TPM 100 BID LEV 1500 BID		0 (3) 0 (3) 0 (8)		
018	F	42	Right temporal	FBTCS	16	2-16	OXC 900-1200 CLB 10-20		300 BID (9) 10 BID (6)	3mg (11)	cluster
019	M	22	Right insular	FIAS	15	3-14	LEV 2000 BID VPA 1250 BID TPM 300 BID		1000 BID (12) 0 (12) 0 (5)	1mg (7) 2mg (8) 2mg (13) 2mg (15)	sustained MRI sustained sustained
020	F	20	Right frontal	FBTCS	19	4-18	PHT 200-300 OXC 750-900		0 (6) 0 (8)	2mg (9) 2mg (11)	MRI sustained
021	M	55	Bitemporal	FAS	7	5-7	CLB 5-10 CBZ CR 600 BID TPM 100 BID	LCM 50 BID (5)	10 HS (4) 600-0 (2) 100 BID (1) 50 BID (5)		

022	M	34	Bitemporal	FIAS, FBTCS	12	2-12	ESL 1000 BID TPM 100 BID CLB 30 HS		0 (3) 0-25 (9) 0-10 (5)	2mg (6)	sustained
023	F	38	Right temporal	FAS	10	3-11	LEV 1500 BID LTG 125 BID		1500 BID (1) 125 BID (1)		
024	F	53	Left temporal	FAS	8	2-7	CBZ CR 300 BID LTG 250 BID		300 BID (1) 0 (7)		
025	M	61	Right temporal	FIAS	12	4-12	LTG 75 BID LEV 1000-500-500-500 CLB 10-20 CBZ CR 400-200-200		0 (4) 1000-500-500-500 (1) 0 (6) 0 (5)		
026	F	33	Bitemporal	FBTCS	19	2-19	LTG 100 BID VPA 375 BID		0 (8) 0 (8)		
027	M	22	Bilateral multifocal (right temporal +++-)	FBTCS	19	7-19	ESL 800-0 LTG 100 BID LEV 1500 BID PHT 400 HS CNZ 0.25-1.25		800-0 (1) 0 (5) 0 (15) 0 (5) 0 (9)	2mg (5) 2mg (6)	sustained sustained
028	M	33	Bitemporal	FIAS	14	3-13	BRV 100 BID CBZ CR 800-400-800 CLB 20 HS		0 (2) 0 (7) 0 (9)		
029	F	43	Bitemporal	FAS	8	2-7	CBZ CR 400-500 BRV 50 BID		400-500 (1) 50 BID (1)		
030	M	32	Right temporal	FAS	7	2-6	LCM 150 BID CBZ CR 400 BID		150 BID (1) 400 BID (1)	0.5mg (6)	SPECT
031	M	30	Left parietal	FIAS, FBTCS	8	2-8	LEV 625-750 TPM 25-50 LTG 100 BID		625-750 (1) 25-50 (1) 100 BID (1)		
032	M	19	Left temporal	FIAS	9	1-9	TPM 150 BID LCM 200 BID CLB 15 BID CBZ CR 400 BID		0 (5) 200 BID (1) 15 BID (1) 400 BID (1)		
033	M	21	Left frontal	FIAS, FBTCS	5	1-4	CLB 30 BID LEV 1500 BID	CBZ CR 200 BID (3)	20-30 (2) 1000 BID (2) 200 BID (3)	2mg (2)	other**
034	M	31	Left temporal	FIAS,	11	1-10	PER 8 HS		0 (3)	2mg (10)	x-ray

				FBTCS			CBZ CR 400 BID CLB 15 HS		0 (2) 0 (5)		
035	F	47	Multifocal (frontotemporal ++)	FIAS	7	2-6	LEV 1500 BID CBZ CR 400-600 OXC 300 BID	LCM 50 BID (6)	1500 BID (1) 400-600 (1) 300 BID (1) 500 BID (6)		
036	F	22	Focal (unknown focus)	FIAS	11	1-11	LEV 1500-1500 LTG 200-200 CLB 5-5-10		250 BID (7) 0 (3) 0 (8)	3mg (8)	cluster (& SPECT)
037	M	19	Right frontal	FBTCS	10	1-10	CBZ CR 400 BID CLB 30 BID LEV 1500 BID		0 (5) 30 BID (1) 1500 BID (1)		
038	M	32	Bifrontal	FAS	11	2-10	CBZ CR 400-600 LCM 200 BID		0 (8) 0 (2)		
039	F	62	Bitemporal	FAS	6	2-6	LTG 150-100 CLB 10 HS	PGB 25 HS (5)	50 BID (3) 0 (4) 25 HS (5)		
040	M	21	Bitemporal	FIAS	15	2-8	CBZ CR 400 BID		0 (2)		
041	F	33	Bitemporal	FIAS	6	1-6	LTG 100 BID LCM 200 BID BRV 75 BID		0 (3) 0 (2) 50 BID (5)		
042	F	38	Generalized	GTCS	9	2-6	PER 4 HS LTG 100 BID		0 (1) 0 (5)		
043	M	27	Frontal (unknown lateralization)	FIAS, FBTCS	11	1-11	LTG 200 BID TPM 200 BID BRV 100 BID	VPA 250 BID (7)	50 BID (4) 0 (5) 0 (3) 250 BID (7)		
044	M	20	Right frontal	FIAS, FBTCS	8	2-7	LCM 200 BID PER 10 PHT 175 BID		200 BID (1) 7.5 (2) 0-100 (5)		
045	F	42	Right temporal	FIAS, PNES	6	2-6	LEV 750 BID LCM 150 BID		0 (3) 150 BID (1)		
046	M	23	Right temporal	FIAS, FBTCS	10	2-10	BRV 50 BID LCM 200 BID VPA 500 BID CLB 20		0 (3) 100-100 (4) 0 (3) 0 (4)	2mg (5)	SPECT

047	F	25	Bitemporal	FIAS, FBTCS	12	1-12	LTG 75 BID		0 (1)	1mg (4) 1mg (5)	sustained sustained
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*Epilepsy types were not validated by intracranial EEG investigations.

Abbreviations

Main seizure type

FAS: Focal aware seizure

FIAS: Focal impaired awareness seizure

FBTCS: Focal to bilateral to tonic-clonic seizure

GTCS: Generalized tonic-clonic seizure

PNES: Psychogenic nonepileptic seizure

ASM

BRV: brivaracetam

CBZ CR: carbamazepine CR

CLB: clobazam

CNZ: clonazepam

ESL: eslicarbazepine

LCM: lacosamide

LEV: levetiracetam

LTG: lamotrigine

LZP: lorazepam

OXC: oxcarbazepine

Pb: phenobarbital

PER: perampanel

PHT: phenytoin

TPM: topiramate

VPA: valproic acid

BID: administered twice per day

HS: administered before bedtime

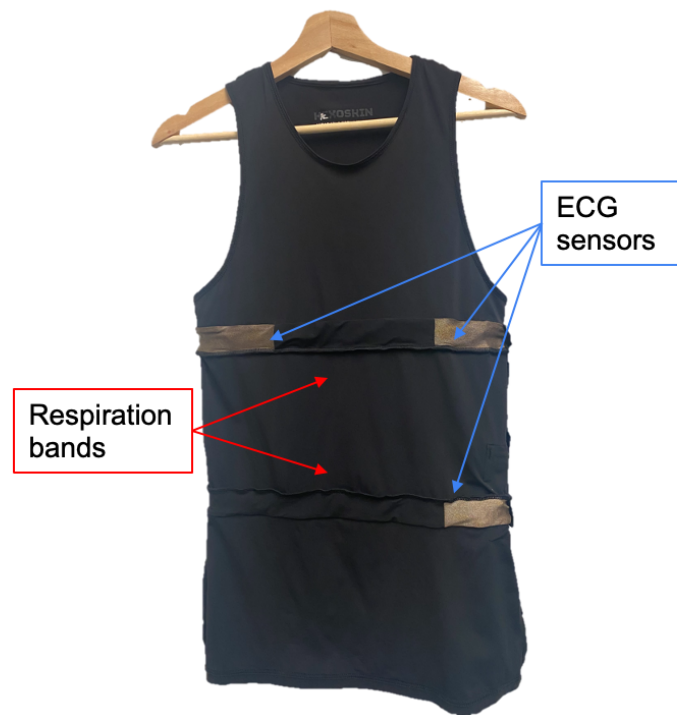
TID: administered three times per day

Cluster: seizure cluster

Sustained: sustained seizure for several minutes

*Other: LZIP administered after a prescribed sleep deprivation

**Other: LZIP administered to prevent a nocturnal seizure



Supplementary Figure 1. Inverted Hexoskin smart shirt displayed with inner electrocardiogram (ECG) sensors and respiration bands visible.