

1 Supplementary

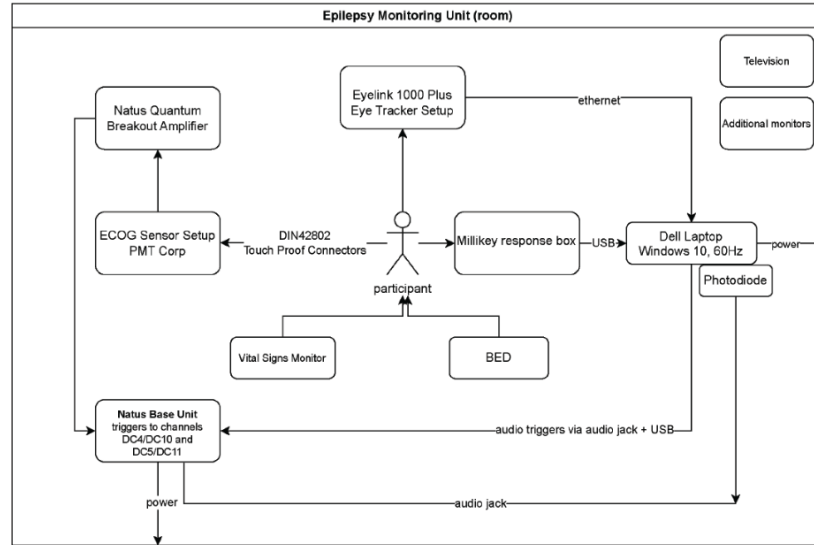
Participant ID	Native Language	EKG available	Age of Onset	Seizure Type	WADA (Language)	IQ [value, test]
CE103	English	no	27	N/A	N/A	109, FSIQ
CE106	English	yes	12	N/A	N/A	>70, FSIQ
CE107	English	yes	13	N/A	N/A	>70, FSIQ
CE108	English	yes	12	N/A	N/A	>70, FSIQ
CE109	English	no	45	N/A	N/A	>70, FSIQ
CE110	English	yes	10	N/A	N/A	>70, FSIQ
CE112	English	yes	7	N/A	N/A	>70, FSIQ
CE113	English	no	19	N/A	N/A	>70, FSIQ
CE115	English	yes	6	N/A	N/A	>70, FSIQ
CE118	English	yes	8	FIA	N/A	>70, FSIQ
CE119	Polish	no	28	FA, FIA	N/A	>70, FSIQ
CE120	English	yes	1	FBTC	N/A	>70, FSIQ
CE121	English	yes	8	BTC	N/A	>70, FSIQ
CF102	English	yes	22	FBTC	L	98, VCI; 90, POI; 83, WMI; 100, PSI
CF103	English	yes	11	FA	Predominantly L, mild R contribution	145, VCI; 96, POI; 95, WMI; 86, PSI
CF104	English	yes	13	FBTC	L	79, VCI; 62, POI
CF105	English	yes	22	FBTC	L	116, VCI; 111, POI; 102, WMI; 114, PSI
CF106	English	yes	11	FM	N/A	N/A
CF107	English	yes	23	FIA	N/A	104, VCI
CF109	English	yes	3	FIA	Predominantly L, mild R contribution	107, VCI; 86, POI; 95, WMI; 92, PSI
CF110	English	yes	2	FIA, FBTC	N/A	89, VCI; 100, POI; 83, WMI; 70, PSI
CF112	English	yes	19	FIA	L	107, VCI; 123, POI; 131, WMI; 100, PSI
CF113	English	yes	34	FA, FIA	L	100, VCI; 102, POI; 114, WMI; 102, PSI
CF116	English	yes	38	FIA	N/A	144, VCI
CF117	English	no	26	FBTC, FIA	N/A	105, VCI; 107, POI; 95, WMI; 108, PSI
CF119	English	no	36	FBTC	L	102, VCI; 98, POI; 97, WMI; 108, PSI
CF120	English	yes	44	FA, FIA	N/A	N/A
CF121	English	no	1	FIA	L	83, VCI; 77, POI; 77, WMI; 76, PSI
CF122	English	yes	14	FH	N/A	114, VCI; 96, POI;

						94, WMI; 94, PSI
CF124	Spanish	yes	15.5	FA	L	68, VCI; 88, POI; 78, WMI; 88, PSI
CF125	English	yes	20	FIA	L	N/A
CF126	English	yes	9	FIA, FBTC	L	76, VCI; 88, POI; 89, WMI; 86, PSI;
CG101	English	yes	24	FIA	N/A	115, FSIQ
CG102	English	yes	12	FA, FIA, FBTC	N/A	86, FSIQ
CG103	English	yes	1.5	FA, FIA, FBTC	N/A	77, FSIQ
CG104	English	no	30	FIA	N/A	90, FSIQ
CG105	English	yes	20	FA	N/A	15, FSIQ
CG106	English	yes	18	FIA, FBTC	N/A	110, FSIQ

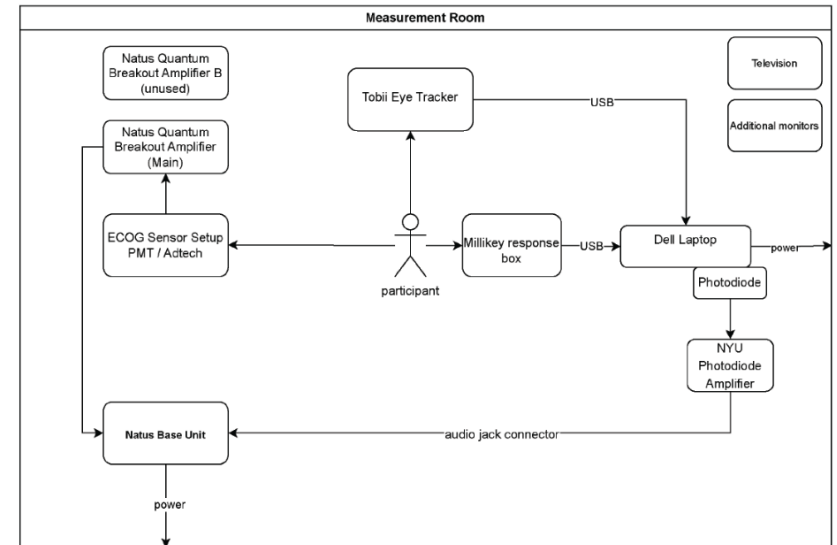
Table S1: iEEG Patient Characteristics

EKG – electrocardiogram channels, N/A – not applicable, L – left, R – right; FSIQ – Full Scale Intelligence Quotient, VCI – Verbal Comprehension Index, POI – Perceptual Organization Index, WMI – Working Memory Index, PSI – Processing Speed Index; FBTC – focal to bilateral tonic-clonic, FIA – focal impaired awareness, FA – focal aware seizures, FM – focal motor, FH – focal hemiclonic seizure.

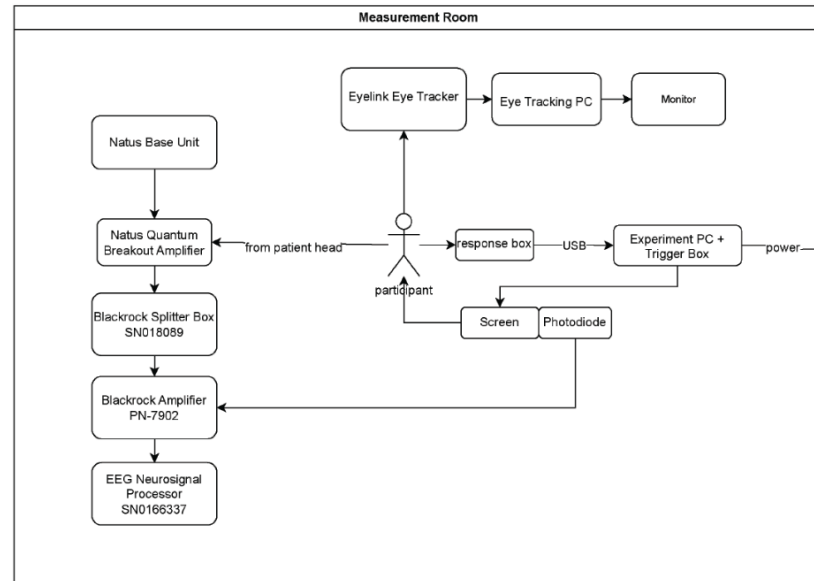
a HULAB



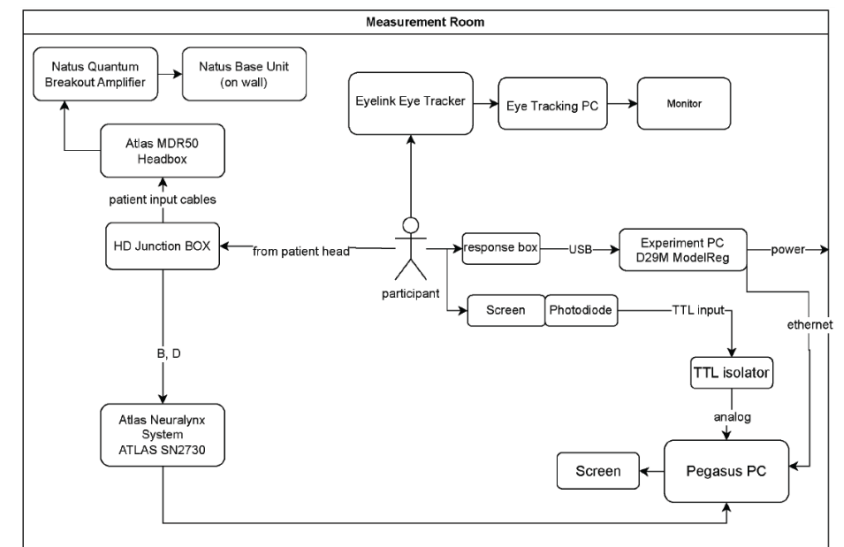
b NYULAB



c WULAB (configuration 1)



c WULAB (configuration 2)



9 **Figure S1:** Experimental setup wiring diagrams from each of the data collection sites: **a.** Boston Children's Hospital and Brigham and Women's Hospital (HULAB), **b.** NYU
10 Langone Health (NYULAB), **c. and d.** University of Wisconsin–Madison (WULAB). Intracranial EEG (iEEG) data were transmitted from electrodes in the head, using touch-
11 proof connectors to the data amplifier, and then to the base unit. Simultaneously, eye-tracking data and behavioral data were collected via an eye-tracker and response box,
12 respectively, and connected to the experimental PC. The experimental PC sent photodiode pulses through the amplifier to the base unit. **c.** WULAB (configuration 1) refers
13 to the experimental setup for participants CG101, CG102, and CG103, whereas **d.** WULAB (Configuration 2) refers to the experimental setup for participants CG104, CG105,
14 and CG106.