



Supplementary Materials for

Noninvasive brain-computer interface enables communication after brainstem stroke

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SUPPLEMENTARY FIGURES

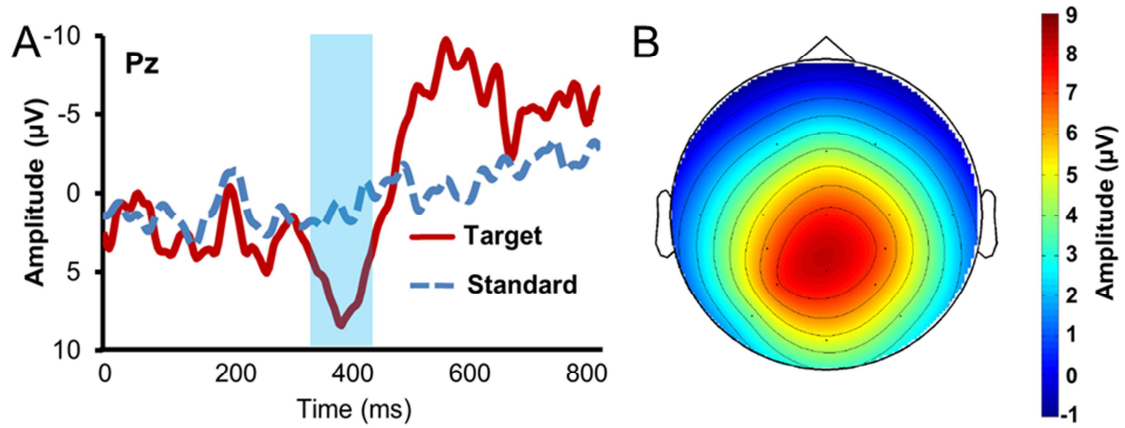


Fig. S1. Example event-related potential and scalp topography. (A) A canonical P300 waveform (data are not from the participant in this study). Event-related potentials at electrode Pz for less probable target stimuli (solid wave) and the more probable standard stimuli (dotted wave). Positive is plotted down. (B) Topography of the amplitude at all 16-electrode locations for the time window corresponding to the blue shaded area (370 – 420 ms) of (A).

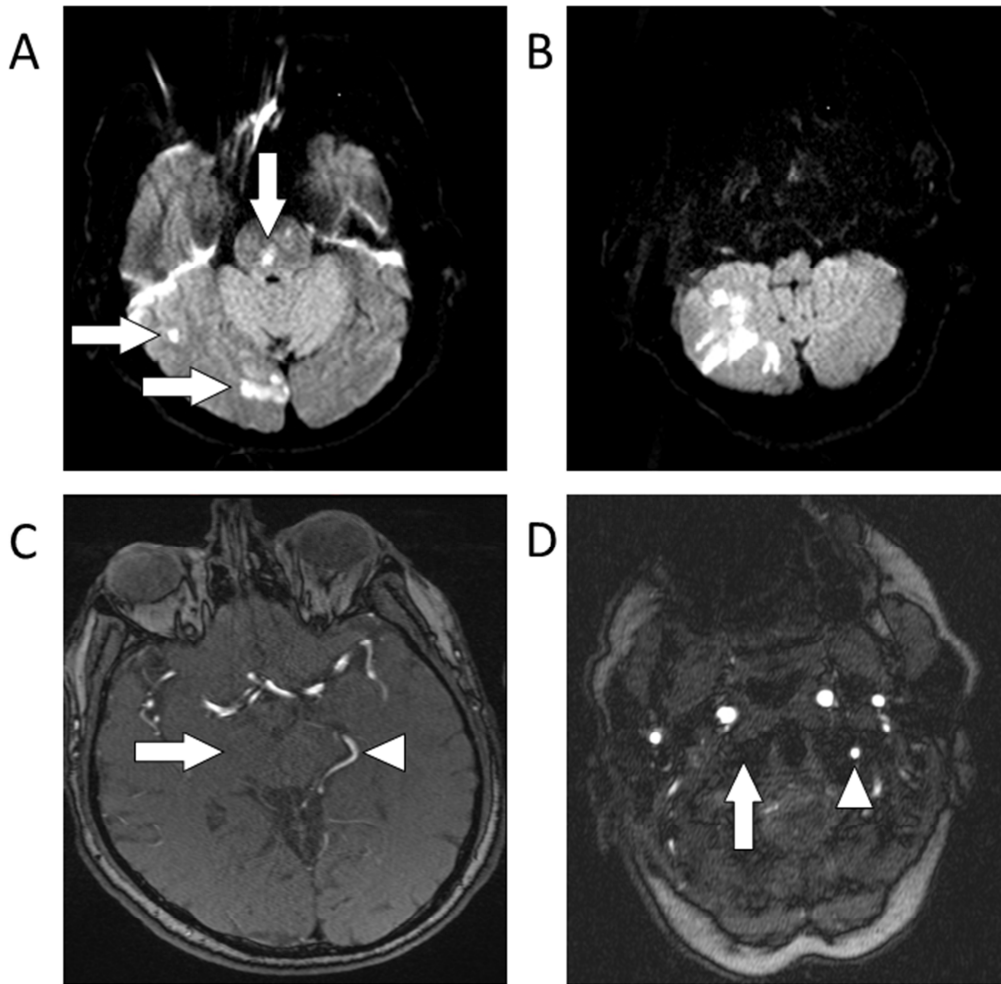


Fig. S2. Magnetic resonance images of the LIS patient in this study. By convention, the view is from the bottom looking up. Thus, the left side of the images represent the right hemisphere and the right side of the image represents the left hemisphere. (A) Axial diffusion weighted image (DWI) through the pons. (B) Axial weighted image of the cerebellum. (C and D) Angiographic MRI through the level of the eyes (C) and through the upper cervical spine (D). Arrows show areas of restricted diffusion; arrowheads show normal flow.

SUPPLEMENTARY TABLES

Table S1. Stimulus parameters tested to optimize performance. Within each paradigm varying numbers of stimulus flashes were used in different sessions; as a result, the time to make a character selection also varied. Sorted by paradigm, the number of sessions conducted with different numbers of flashes, and the corresponding time(s) per selection, are shown.

Paradigm	Number of sessions	Flashes/selection	Time/selection (s)
6×6 Speller	1	180	45
6×6 Speller	6	90	17
4×4 Speller	1	60	15
4×4 Speller	1	72	18
4-Choice	7	160	40
4-Choice	3	80	20
7-Choice	4	140	35
3×5 Speller	1	120	30
3×6 Speller	22	180	45
3×6 Speller	15	144	36