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## Figure Legends

**Fig. 1.** Mean number of drinks consumed on each day of the last week by the BD and control subjects.

**Fig. 2.** Grand averages of ERPs from the Control group in response to the standard (solid lines) and target stimuli (dashed lines) at the 18 electrodes analyzed. P3b amplitude was larger for the target than the standard stimuli in all the electrodes and regions analyzed.

**Fig. 3.** Grand averages of ERPs from the BD group in response to the standard (solid lines) and target stimuli (dashed lines) at the 18 electrodes analyzed. P3b amplitude was larger for the target than the standard stimuli in all the electrodes and regions analyzed.

**Fig. 4.** Grand averages of ERPs and voltage maps corresponding to the peak of P3b component in the males of the control (solid lines) and BD groups (dashed lines) in response to the target stimuli at the 18 electrodes analyzed. Males of the BD group showed larger P3b amplitude in all electrodes and regions analyzed than males of the control group.

**Fig. 5.** Grand averages of ERPs and voltage maps corresponding to the peak of P3b component in the females of the control (solid lines) and BD groups (dashed lines) in response to the target stimuli at the 18 electrodes analyzed. Females of the BD group

showed larger P3b amplitude in all electrodes and regions analyzed than females of the control group.

Table 1. Demographic and drinking characteristics of the Control and BD groups (mean  $\pm$  SD).

	<i>Control</i>	<i>BD</i>
N (females)	53 (25)	32 (15)
Age: years (range)	18.5 $\pm$ 0.5 (18-20)	18.8 $\pm$ 0.6 (18-20)
Handedness (right/left)	53 / 0	32 / 0
Caucasian ethnicity (%)	100	100
Age of onset on alcohol consumption: years*	16 $\pm$ 1	15 $\pm$ 1.3
Quantity of consumption: drinks per occasion <sup>a</sup> **	1 $\pm$ 1.5	5.1 $\pm$ 2
Drinks in the last week (self-reported) <sup>a</sup> **	3.5 $\pm$ 1.4	19.7 $\pm$ 4.9
Speed of consumption: drinks per hour <sup>a</sup> **	0.6 $\pm$ 0.9	3.3 $\pm$ 1.1
BD episodes in the last two weeks **	0.02 $\pm$ 0.1	1.4 $\pm$ 1.4
Times drunk in the last 6 months **	1.2 $\pm$ 2.7	6.8 $\pm$ 7
Percentage of times became drunk when drinking **	5.9 $\pm$ 10.1	42.7 $\pm$ 31.6
Total AUDIT score (range)**	2.4 $\pm$ 2.1 (0-9)	11.3 $\pm$ 3.4 (6-18)
Global Score Index (GSI) percentil of SCL-90-R	43.3 $\pm$ 29.7	52.2 $\pm$ 33.9

\*  $t < 0.05$  significant group differences (Control vs. BD)

\*\*  $t < 0.001$  significant group differences (Control vs. BD)

<sup>a</sup> 1 drink equals 10 g of alcohol

Table 2. Behavioral data from the control and BD groups (mean  $\pm$  SD).

<i>Behavioral Performance</i>	<i>Control</i>	<i>BD</i>
Reaction time (ms)	392.6 $\pm$ 49.9	392 $\pm$ 46.8
% Correct responses	99.2 $\pm$ 1.8	99.3 $\pm$ 1.6
% False alarms	0.1 $\pm$ 0.4	0.2 $\pm$ 0.7

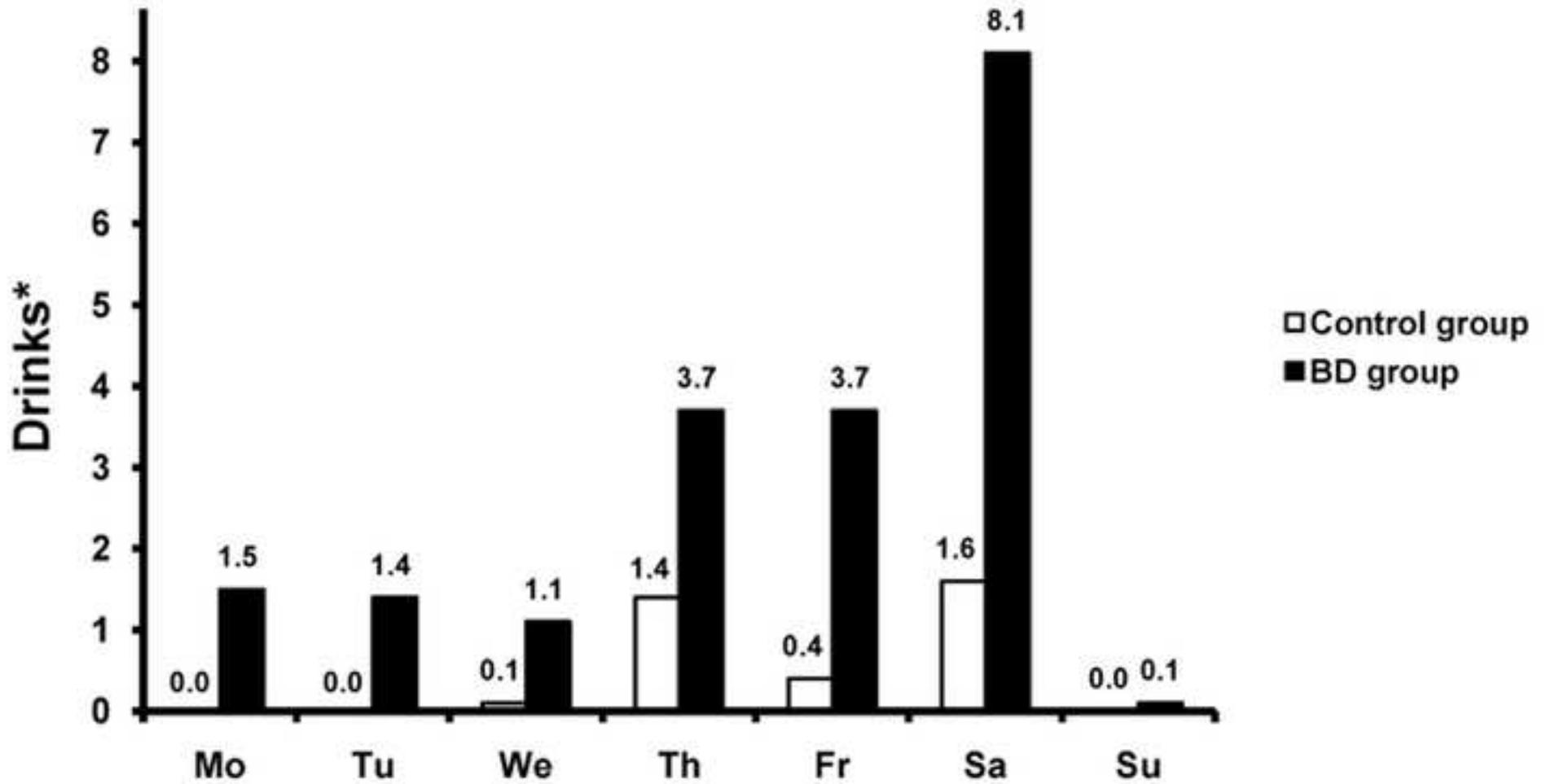
Table 3. Values of the latency (ms) and amplitude ( $\mu\text{V}$ ) of the N2 and P3b components (mean  $\pm$  SD) at the 18 electrodes analyzed in control and BD groups.

	<i>N2 values for target stimuli</i>				<i>P3b values for target stimuli</i>			
	Control		BD		Control		BD	
	Latency	Amplitude	Latency	Amplitude	Latency	Amplitude	Latency	Amplitude
F3	274 $\pm$ 27.19	-3.81 $\pm$ 3.4	269.69 $\pm$ 21.96	-2.64 $\pm$ 4.16	379.96 $\pm$ 32.6	5.1 $\pm$ 4.47	385.31 $\pm$ 35.16	8.4 $\pm$ 4.42
Fz	277.7 $\pm$ 22.62	-4.94 $\pm$ 4.06	276.25 $\pm$ 17.01	-3.59 $\pm$ 4.77	377.81 $\pm$ 31.81	4.56 $\pm$ 3.99	382.94 $\pm$ 32.5	8.28 $\pm$ 5.3
F4	271.58 $\pm$ 28.22	-4.15 $\pm$ 3.7	265.06 $\pm$ 26.2	-2.59 $\pm$ 4.38	380.23 $\pm$ 36.39	5.05 $\pm$ 3.66	382 $\pm$ 28.42	8.52 $\pm$ 4.65
FC3	271.02 $\pm$ 27.12	-3.87 $\pm$ 3.5	266.75 $\pm$ 21.82	-2.75 $\pm$ 4.53	377.66 $\pm$ 34.09	5.9 $\pm$ 5.03	387.5 $\pm$ 37.04	9.45 $\pm$ 4.82
FCz	272.3 $\pm$ 24.66	-5.15 $\pm$ 4.25	274.75 $\pm$ 17.07	-4.14 $\pm$ 5.69	374.04 $\pm$ 29.70	6.51 $\pm$ 5.04	384 $\pm$ 30.14	10.63 $\pm$ 6.24
FC4	267.96 $\pm$ 24.92	-3.61 $\pm$ 3.96	264.56 $\pm$ 24.84	-2.55 $\pm$ 4.64	379.32 $\pm$ 33.16	6.87 $\pm$ 4.14	385.37 $\pm$ 32.8	9.97 $\pm$ 4.9
C3	267.58 $\pm$ 27.33	-3.15 $\pm$ 3.81	263.87 $\pm$ 21.02	-2.57 $\pm$ 4.79	379.62 $\pm$ 40.72	6.99 $\pm$ 5.24	386.75 $\pm$ 38.73	10.99 $\pm$ 5.06
Cz	269.17 $\pm$ 22.15	-3.46 $\pm$ 4.6	267 $\pm$ 23.15	-3.5 $\pm$ 6.32	371.55 $\pm$ 35.94	7.71 $\pm$ 5.66	386.87 $\pm$ 37.54	11.81 $\pm$ 6.23
C4	266.75 $\pm$ 25.36	-2.72 $\pm$ 4.09	264.06 $\pm$ 24.91	-2.29 $\pm$ 4.94	384.04 $\pm$ 39.8	7.53 $\pm$ 4.96	388.69 $\pm$ 37.58	10.77 $\pm$ 5.26
CP3	262.94 $\pm$ 26.35	-2.57 $\pm$ 3.89	257.75 $\pm$ 22.05	-2.36 $\pm$ 5.19	375.13 $\pm$ 46.89	7.91 $\pm$ 5.86	386.75 $\pm$ 42.71	12.33 $\pm$ 5.09
CPz	263.92 $\pm$ 26.27	-1.94 $\pm$ 4.54	263.06 $\pm$ 21.26	-2.12 $\pm$ 6.05	372.87 $\pm$ 47.26	8.57 $\pm$ 6	385.81 $\pm$ 44.72	12.79 $\pm$ 6.27
CP4	259.74 $\pm$ 26.26	-2.19 $\pm$ 4.4	259.81 $\pm$ 23.06	-2.03 $\pm$ 5.4	375.47 $\pm$ 48.74	7.79 $\pm$ 5.2	387 $\pm$ 40.84	10.91 $\pm$ 5.83
P3	254.94 $\pm$ 27.9	-2.17 $\pm$ 4.02	254.56 $\pm$ 22.94	-1.91 $\pm$ 5.5	370.34 $\pm$ 48.14	8.39 $\pm$ 5.94	398.06 $\pm$ 45.19	12.68 $\pm$ 5.19
Pz	255.58 $\pm$ 28.65	-0.81 $\pm$ 4.62	259.62 $\pm$ 22.43	-0.93 $\pm$ 5.85	365.92 $\pm$ 50.3	9.57 $\pm$ 5.97	387.81 $\pm$ 44.14	13.69 $\pm$ 6.33
P4	255.85 $\pm$ 27.92	-1.58 $\pm$ 4.6	256.06 $\pm$ 23.09	-1.7 $\pm$ 5.77	369.28 $\pm$ 53.47	8.11 $\pm$ 5.52	395.94 $\pm$ 43.77	10.72 $\pm$ 5.69
PO3	247.13 $\pm$ 27.24	-2.01 $\pm$ 4.46	250.31 $\pm$ 21.19	-1.69 $\pm$ 5.87	368.11 $\pm$ 53.61	8.54 $\pm$ 5.92	390.44 $\pm$ 45.64	12.06 $\pm$ 5.57
POz	246.98 $\pm$ 26.23	-0.9 $\pm$ 4.87	251.87 $\pm$ 22.35	-0.64 $\pm$ 6.05	364.91 $\pm$ 50.79	9.82 $\pm$ 6.02	391.81 $\pm$ 45.68	12.79 $\pm$ 6.29
PO4	248.24 $\pm$ 24.89	-1.43 $\pm$ 4.86	248.25 $\pm$ 22.12	-1.35 $\pm$ 6.23	369.55 $\pm$ 56.14	8.29 $\pm$ 5.77	384.81 $\pm$ 49.69	10.4 $\pm$ 5.79

Table 4. Values of P3b amplitude ( $\mu\text{V}$ ) (mean  $\pm$  SD) at the 18 electrodes analyzed in males and females of the control and BD groups.

<i>P3b values for target stimuli</i>				
	Control		BD	
	Males	Females	Males	Females
F3	4.69 $\pm$ 4.1	5.55 $\pm$ 4.89	8.24 $\pm$ 4.66	8.59 $\pm$ 4.29
Fz	4.26 $\pm$ 4.19	4.88 $\pm$ 3.81	8.48 $\pm$ 5.26	8.07 $\pm$ 5.52
F4	5.13 $\pm$ 3.68	4.96 $\pm$ 3.72	8.4 $\pm$ 5.18	8.66 $\pm$ 4.15
FC3	5.16 $\pm$ 4.61	6.73 $\pm$ 5.43	8.8 $\pm$ 4.58	10.19 $\pm$ 5.13
FCz	5.81 $\pm$ 5.06	7.29 $\pm$ 4.99	10.43 $\pm$ 6.01	10.86 $\pm$ 6.69
FC4	6.68 $\pm$ 4.07	7.08 $\pm$ 4.29	9.32 $\pm$ 4.93	10.7 $\pm$ 4.93
C3	5.94 $\pm$ 4.55	8.18 $\pm$ 5.78	10.05 $\pm$ 4.73	12.05 $\pm$ 5.37
Cz	6.87 $\pm$ 5.66	8.65 $\pm$ 5.62	11.08 $\pm$ 5.84	12.65 $\pm$ 6.74
C4	6.65 $\pm$ 4.16	8.52 $\pm$ 5.65	9.79 $\pm$ 4.92	11.88 $\pm$ 5.58
CP3	6.64 $\pm$ 4.88	9.35 $\pm$ 6.59	10.78 $\pm$ 3.77	14.08 $\pm$ 5.91
CPz	7.65 $\pm$ 5.63	9.59 $\pm$ 6.32	11.56 $\pm$ 5.08	14.18 $\pm$ 7.32
CP4	6.77 $\pm$ 4.32	8.93 $\pm$ 5.91	9.45 $\pm$ 4.06	12.56 $\pm$ 6.31
P3	7.1 $\pm$ 4.84	9.84 $\pm$ 6.78	10.98 $\pm$ 2.92	14.61 $\pm$ 6.51
Pz	8.5 $\pm$ 5.09	10.77 $\pm$ 6.73	11.88 $\pm$ 4.23	15.74 $\pm$ 7.74
P4	6.82 $\pm$ 4.3	9.57 $\pm$ 6.42	8.8 $\pm$ 3.5	12.89 $\pm$ 6.93
PO3	6.92 $\pm$ 4.57	10.35 $\pm$ 6.79	10.1 $\pm$ 2.84	14.28 $\pm$ 7.04
POz	8.57 $\pm$ 4.69	11.21 $\pm$ 7.07	10.68 $\pm$ 3.64	15.16 $\pm$ 7.8
PO4	6.9 $\pm$ 4.56	9.84 $\pm$ 6.63	8.51 $\pm$ 3.6	12.49 $\pm$ 7.1

Figure 1  
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\* 1 drink equals 10 g of alcohol

Figure 2  
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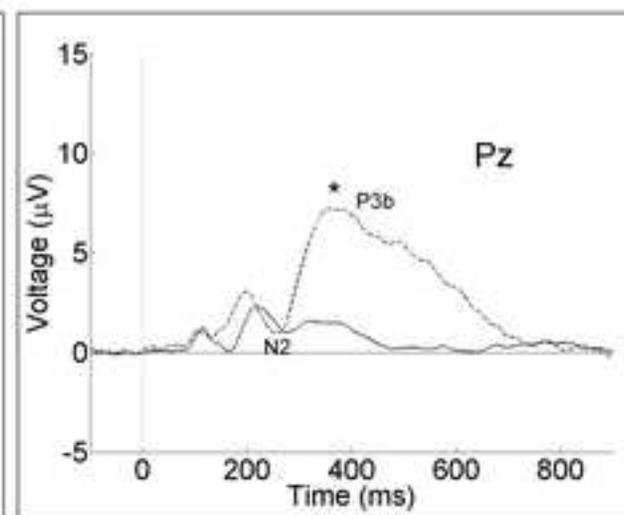
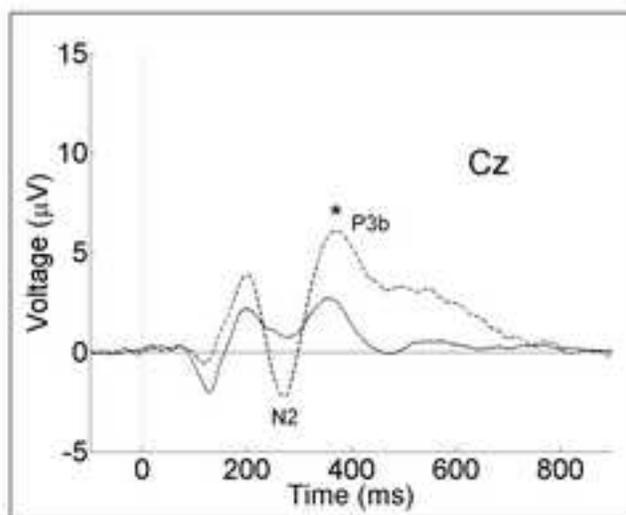
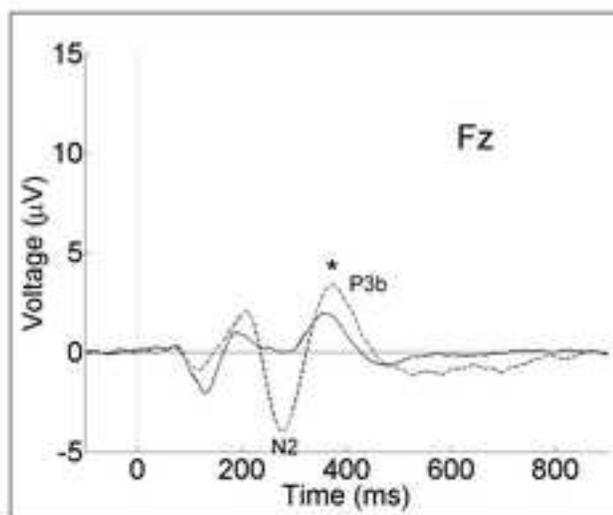
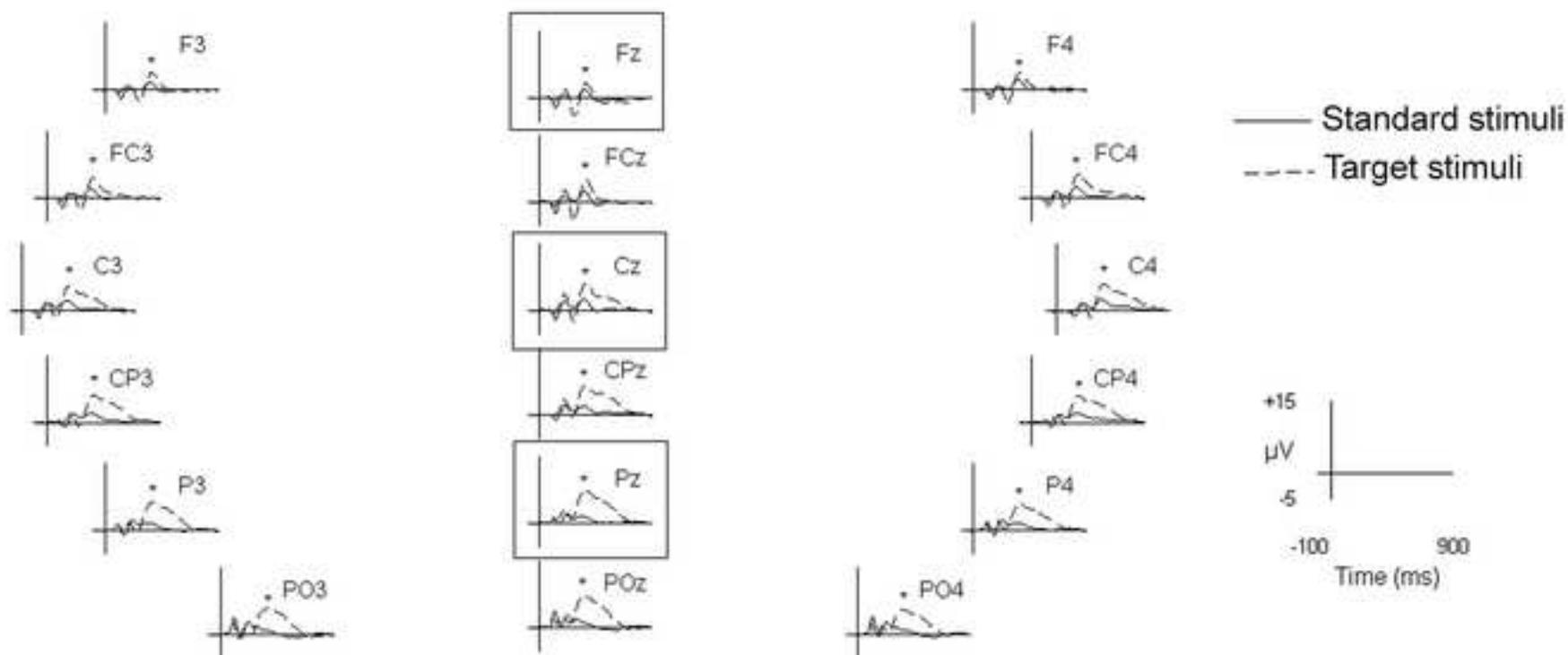


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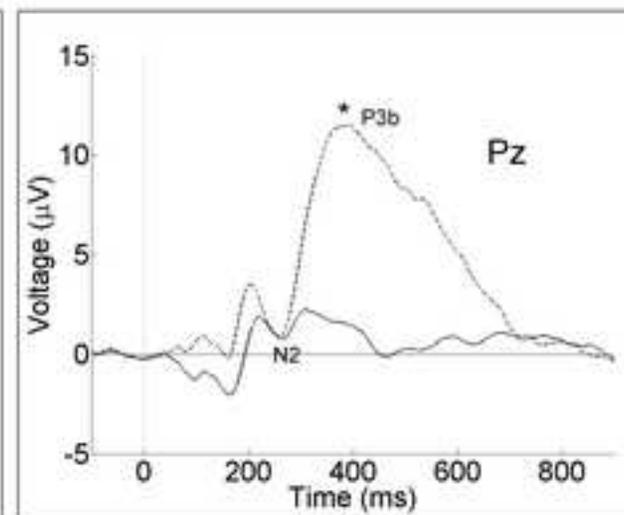
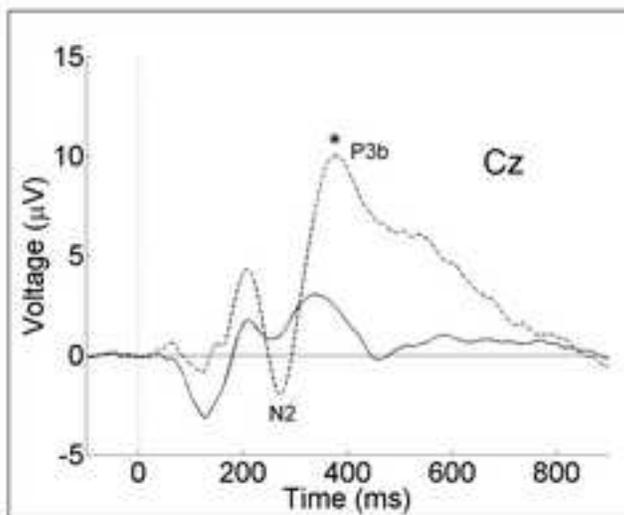
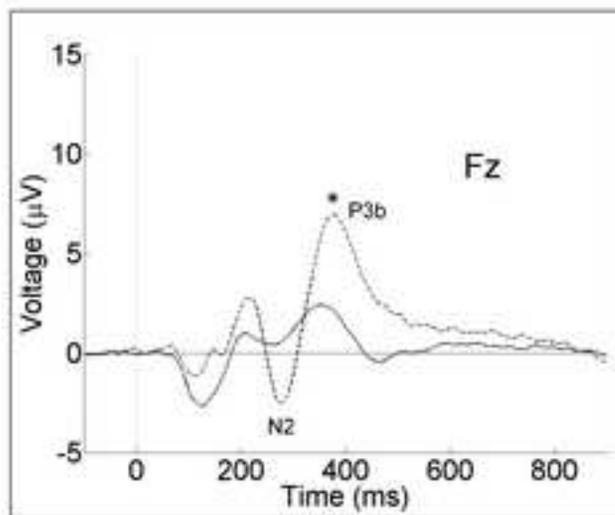
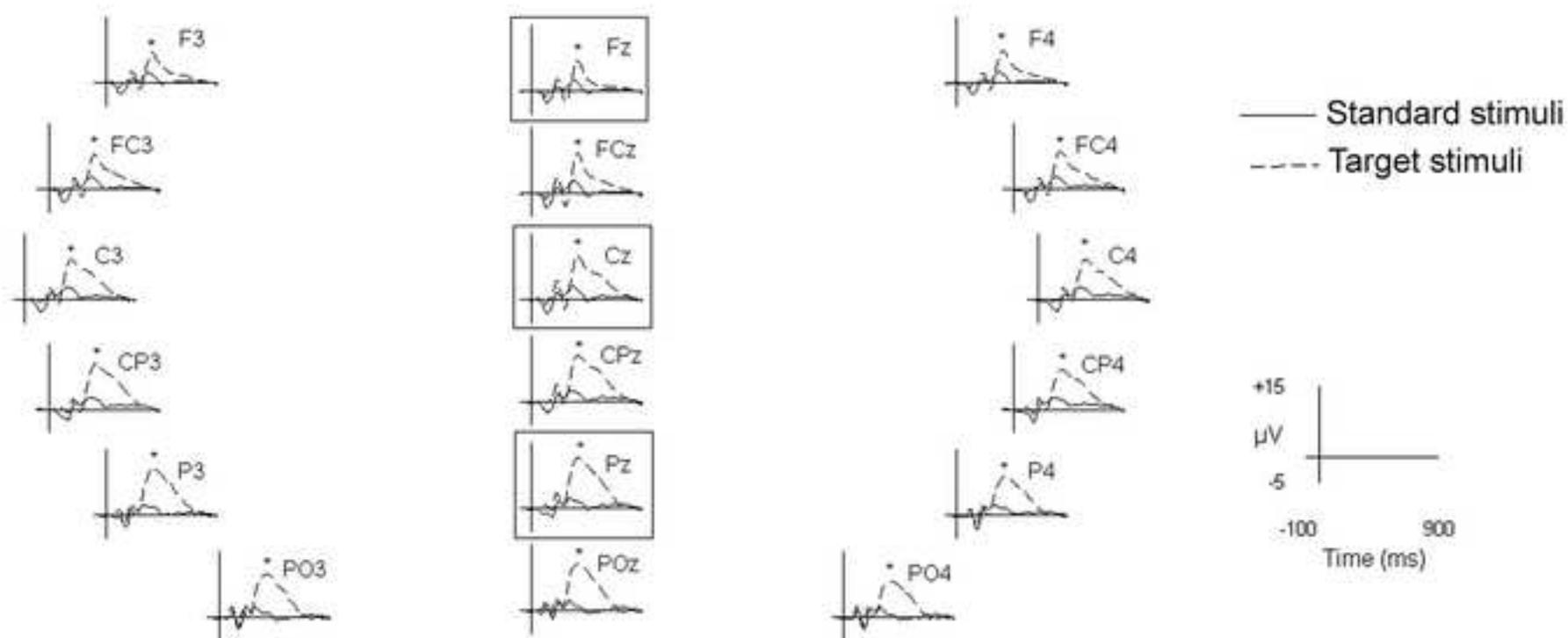


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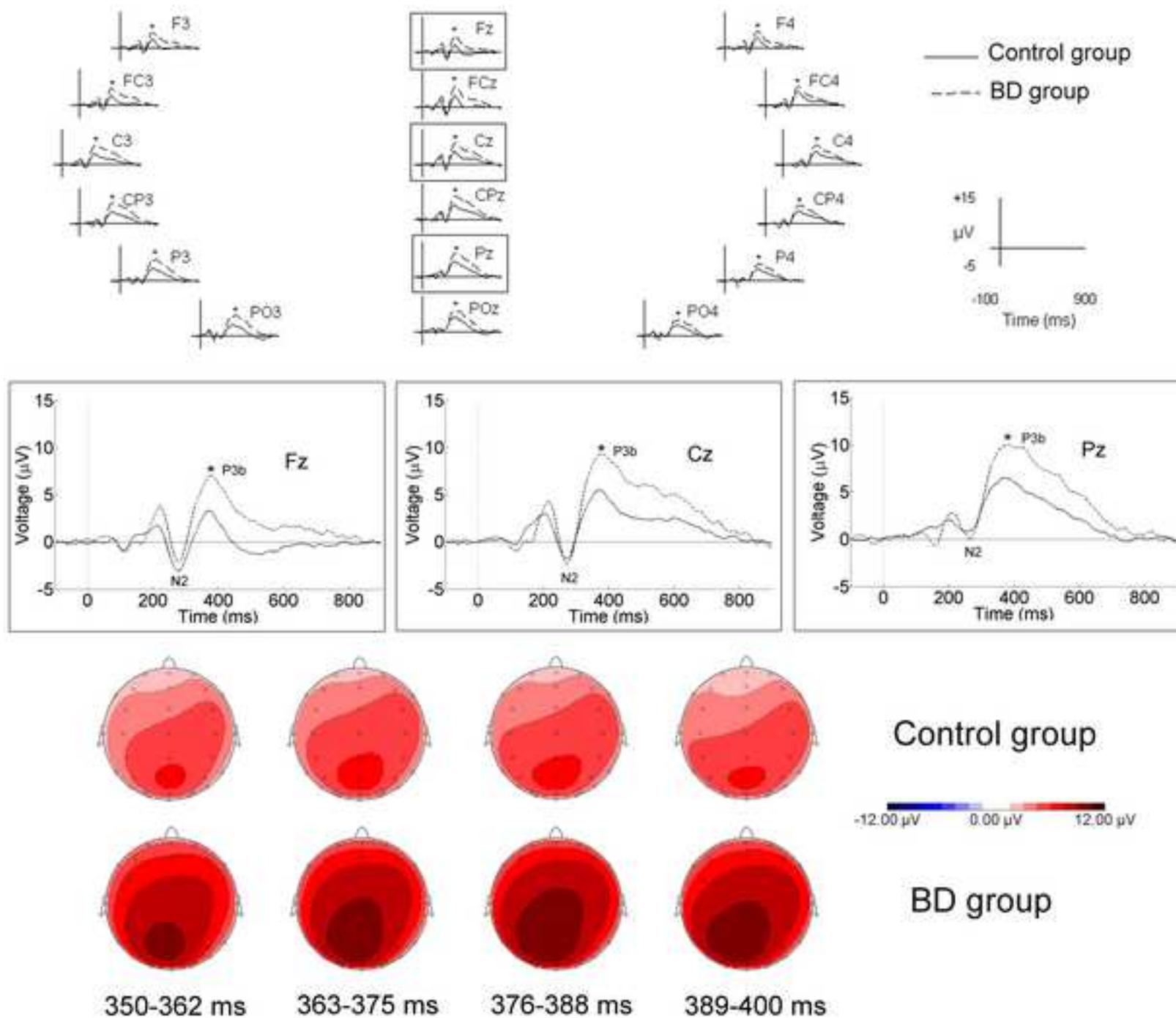


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