	Left Hemisphere			Right Hemisphere		
	Native	Exposed	Unexposed	Native	Exposed	Unexposed
Temporal	0.034 ± 0.011	0.019 ± 0.014	-0.010 ± 0.011	0.017 ± 0.011	-0.014 ± 0.014	0.002 ± 0.011
Posterior temporal	-0.017 ± 0.012	0.023 ± 0.014	0.005 ± 0.012	-0.034 ± 0.011	-0.048 ± 0.014	-0.016 ± 0.011
Temporo-parietal	0.014 ± 0.011	0.001 ± 0.014	-0.020 ± 0.011	-0.031 ± 0.012	-0.047 ± 0.014	-0.018 ± 0.012
Prefrontal	0.028 ± 0.009	-0.005 ± 0.012	0.002 ± 0.011	-0.038 ± 0.010	-0.021 ± 0.012	-0.004 ± 0.011
Inferior frontal	0.016 ± 0.010	0.007 ± 0.013	0.009 ± 0.010	0.011 ± 0.011	-0.019 ± 0.013	-0.012 ± 0.011
Posterior frontal	0.015 ± 0.009	0.022 ± 0.011	0.017 ± 0.009	-0.014 ± 0.009	-0.012 ± 0.011	-0.005 ± 0.009

Table S1. Hemodynamic HbO estimates (mean ± standard error) for native, exposed and unexposed conditions, six ROIs, in the left and right hemisphere. Repeated measure ANOVA results, significant interactions between conditions ($P<.05$) are identified in red.

	Left Hemisphere			Right Hemisphere		
	Native	Exposed	Unexposed	Native	Exposed	Unexposed
Temporal	-0.008 ± 0.003	-0.015 ± 0.003	-0.008 ± 0.004	-0.015 ± 0.003	-0.008 ± 0.004	-0.018 ± 0.003
Posterior temporal	0.009 ± 0.004	0.000 ± 0.003	0.009 ± 0.004	0.009 ± 0.003	0.004 ± 0.004	-0.004 ± 0.003
Temporo-parietal	-0.001 ± 0.003	0.000 ± 0.003	0.004 ± 0.004	0.004 ± 0.003	0.006 ± 0.004	-0.005 ± 0.003
Prefrontal	0.001 ± 0.003	0.006 ± 0.003	0.003 ± 0.004	0.007 ± 0.003	0.003 ± 0.003	0.003 ± 0.003
Inferior frontal	0.000 ± 0.003	0.000 ± 0.002	0.004 ± 0.003	-0.011 ± 0.002	-0.007 ± 0.003	-0.002 ± 0.002
Posterior frontal	-0.001± 0.003	-0.002 ± 0.003	-0.004± 0.004	0.002 ± 0.003	0.006 ± 0.004	0.002 ± 0.003

Table S2. Hemodynamic HbR estimates (mean ± standard error) for native, exposed and unexposed conditions, six ROIs, in the left and right hemisphere. The repeated measure ANOVA on the HbR data, with the between-subject factor Condition (Native, Exposed, Unexposed) and the within-subject factors Hemisphere and ROI, revealed no main effect of Hemisphere ($F_{1,156} = 0.563$, $P = .454$, effect size = 0.004), a significant effect of ROI ($F_{5,780} = 17.630$, $P < .001$, effect size = 0.102), and a significant triple interaction ($F_{10,780} = 2.603$, $P = .011$, effect size = 0.032). Significant interactions between conditions ($P<.05$) are identified in red.

	Left hemisphere			Right hemisphere		
	Native (French)	Foreign (German and Hebrew)	Pvalue	Native (French)	Foreign (German and Hebrew)	Pvalue
Temporal	0.034 ± 0.011	0.001 ± 0.009	0.023	0.017 ± 0.011	-0.004 ± 0.009	0.131
Posterior temporal	-0.017 ± 0.012	0.012 ± 0.009	0.049	-0.034 ± 0.011	-0.029 ± 0.009	0.710
Temporo-parietal	0.014 ± 0.011	-0.011 ± 0.009	0.070	-0.031 ± 0.012	-0.029 ± 0.009	0.909
Prefrontal	0.027 ± 0.009	-0.001 ± 0.007	0.017	-0.038 ± 0.010	-0.011 ± 0.007	0.029
Inferior frontal	0.016 ± 0.010	0.008 ± 0.008	0.538	0.011 ± 0.011	-0.015 ± 0.008	0.058
Posterior frontal	0.015 ± 0.009	0.019 ± 0.007	0.739	-0.014 ± 0.009	-0.008 ± 0.07	0.596

Table S3. Hemodynamic HbO estimates (mean ± standard error) for native and foreign languages (Hebrew and German) regardless of the prenatal exposure. A repeated measure ANOVA on the HbO concentration changes with the between-subject factor Condition (French, foreign (Hebrew and German)) and the within-subject factors Hemisphere and ROI was done. The ANOVA revealed a significant main effect of Hemisphere ($F_{1,70}$ = 17.029, P < .001, effect size = 0.098), a significant effect of ROI ($F_{3.8,66}$ = 5.016, P = .001, effect size = 0.031), and a significant triple interaction ($F_{4.2,66}$ = 3.899, P = .003, effect size = 0.024). Significant post hoc interactions (P<.05) are identified in red.

	Left Hemisphere HbO		**Right Hemisphere HbO**	
	German	Hebrew	German	Hebrew
Temporal	-0.005 ± 0.015	-0.010 ± 0.015	-0.008 ± 0.016	-0.011 ± 0.016
Posterior temporal	0.019 ± 0.014	0.012 ± 0.014	-0.039 ± 0.015	-0.024 ± 0.015
Temporo-parietal	-0.011 ± 0.014	-0.010 ± 0.014	-0.034 ± 0.015	-0.035 ± 0.015
Prefrontal	0.003 ± 0.012	-0.001 ± 0.014	-0.007 ± 0.012	-0.010 ± 0.012
Inferior frontal	0.004 ± 0.013	0.017 ± 0.013	-0.016 ± 0.013	-0.020 ± 0.013
Posterior frontal	0.022 ± 0.010	0.022 ± 0.010	-0.008 ± 0.012	-0.007 ± 0.012

Table S4. Hemodynamic HbO estimates (mean ± standard error) for Hebrew and German, regardless of the prenatal exposure. A repeated measure ANOVA on the HbO concentration changes with the between-subject factor Condition (Hebrew, German) as the between-subject factor and Hemisphere and ROI as within-subject factors. Results showed a main effect of Hemisphere ($F_{1,70} = 7.764$, $P < 0.007$, effect size = 0.100), no significant effect of ROI ($F_{3.8,66} = 1.648$, $P = 0.165$, effect size = 0.023), and no significant triple interaction ($F_{4.2,66} = 0.530$, $P = 0.723$, effect size = 0.008) (Greenhouse-Geisser correction).

	Left Hemisphere HbO			Right Hemisphere HbO		
	Native	Exposed	Unexposed	Native	Exposed	Unexposed
Temporal	0.030± 0.013	0.019± 0.012	-0.005± 0.016	0.021± 0.014	-0.014± 0.014	0.004± 0.017
Posterior temporal	-0.029± 0.015	0.023± 0.012	0.011± 0.014	-0.032± 0.016	-0.048± 0.015	-0.014± 0.014
Temporo-parietal	-0.010± 0.012	0.001± 0.011	-0.018± 0.015	-0.036± 0.015	-0.047± 0.016	-0.019± 0.013
Prefrontal	0.019± 0.012	-0.005± 0.011	0.000± 0.012	-0.042± 0.012	-0.021± 0.013	-0.002± 0.012
Inferior frontal	0.021± 0.012	0.007± 0.011	0.012± 0.015	0.021± 0.015	-0.019± 0.013	-0.017± 0.011
Posterior frontal	0.018± 0.015	0.022± 0.010	0.017± 0.009	-0.007± 0.010	-0.012± 0.013	-0.011± 0.011

Table S5. Only participants with prenatal exposure (N=39). Hemodynamic HbO estimates (mean ± standard error) for native, exposed and unexposed conditions, six ROIs, in the left and right hemisphere. A repeated measure ANOVA on the HbO concentration changes with the between-subject factor Condition (Native, Exposed, Unexposed) and the within-subject factors Hemisphere and ROI was done. Results show a significant main effect of Hemisphere ($F_{1, 58} = 10.103$, $p = .002$, $\eta^2_p = .148$), a main effect of ROI ($F_{5, 290} = 3.453$, $p = .013$, $\eta^2_p = .056$), but no effect of interaction between the native groups prenatally exposed or unexposed ($F_{5,290} = 0.430$, $p = 0.769$, $\eta^2_p = .007$).

Note. A repeated measure ANOVA using within-subject factors ROI and Hemisphere (LH, RH), and between-subjects factor Prenatally exposed to French (yes (N=39), no (N=21)) was performed. Results for HbO data showed significant main effects of Hemisphere ($F_{1, 58} = 10.103$, p = .002, $\eta^2_p = .148$) and ROI ($F_{5, 290} = 3.453$, p = .013, $\eta^2_p = .056$), but no main effect or interaction including the factor Prenatally exposed to French ($F_{1, 54} = 0.430$, p = 0.769, $\eta^2_p = .007$). Results for HbR data revealed no main effect of Hemisphere ($F_{1, 58} = 0.030$, $p = .863$, $\eta^2_p = .001$), a main effect of ROI ($F_{3.554, 206.16} = 8.138$, $p < .001$, $\eta^2_p = .123$), but no effect of interaction ($F_{3.708,215.04}= 1.990$, $p = 0.102$, $\eta^2_p = .033$).

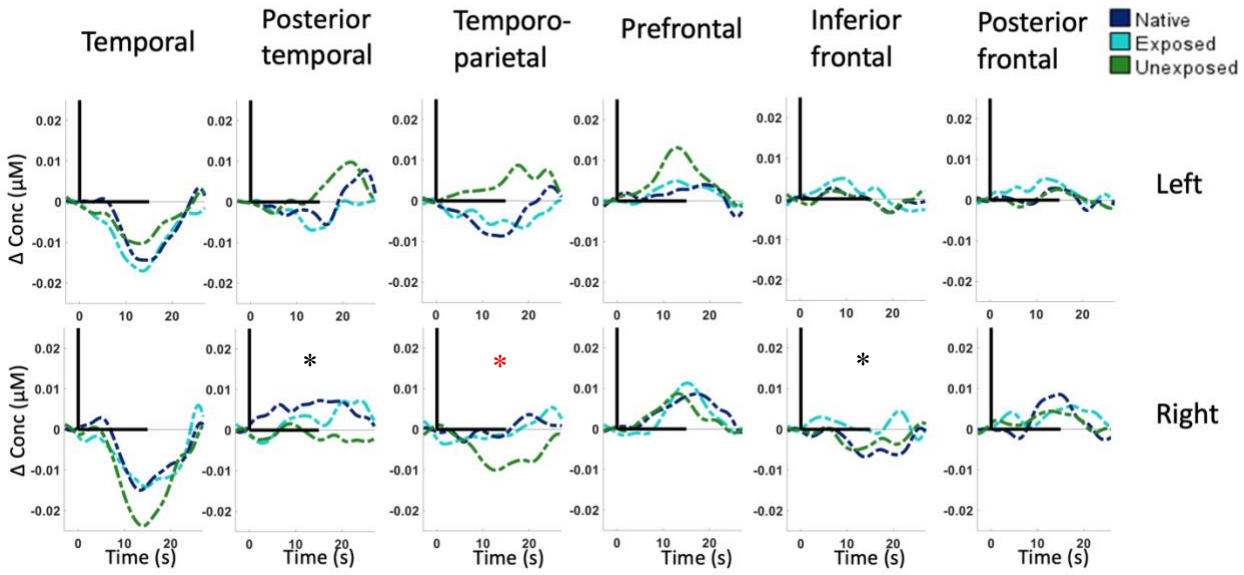

Figure S1. Channels are plotted following the headgear placement shown in Figure 2 for the left (upper panel) and right (lower panel) hemispheres. Dotted lines represent HbR (Native in blue, Exposed (German or Hebrew, depending on the prenatal linguistic group) in cyan, Unexposed (Hebrew or German, depending on the prenatal linguistic group) in green). The black vertical lines indicate the onset of the stimulation period. A black asterisk (*) over a region indicates significant ($P < 0.05$) differences between native and unexposed conditions, and a red asterisk indicates differences between native, exposed and unexposed conditions. The repeated measure ANOVA on the HbR data, with the between-subject factor Condition (Native, Exposed, Unexposed) and the within-subject factors Hemisphere and ROI, revealed no main effect of Hemisphere ($F_{1,156} = 0.563$, $P = .454$, effect size = 0.004), a significant effect of ROI ($F_{5,780} = 17.630$, $P < .001$, effect size = 0.102), and a significant triple interaction ($F_{10,780} = 2.603$, $P = .011$, effect size = 0.032).