The involvement of the fronto-parietal circuit in tasks requiring allocation of covert attention is well known in the adult brain [1]. Less is known about the fronto-parietal interplay in the developing brain during the allocation of attention to visual objects. The aim of the present study was to investigate the involvement of the entire fronto-parietal network in 6-month old infants during a task of lateralized visual attention.

**MATERIALS AND METHODS**

**Participants:** Twenty-four 5-to-6-month old infants (mean age=5.7, SD=4.4). Five infants were discarded due either to technical issues or because they attended to less than 50% of trials in at least one condition (19 participants, 10 females).

**Data processing:** NIRS data were analyzed with the Homer2 package [2]. Channels with very low intensity were pruned, motion artifacts were identified and corrected applying a combination of spline and wavelet techniques, physiological noise was reduced by applying PCA (85%) and a band-pass filter (0.01-1 Hz) was applied. Before block-averaging, trials with a looking time < 1s were removed.

**Metric:** The integral of the mean hemodynamic response between 4 and 11 s was computed for both oxy- (HbO) and deoxy-hemoglobin (HbR).

**Statistical analysis:** Mixed ANOVAs separately for the frontal and parietal regions, with gender as between-subject factor and number of visual targets (1 vs. 3), congruency (congruent vs. incongruent), hemisphere (left vs. right) and channel (from 1 to 4) as within-subject factors.

**RESULTS AND DISCUSSION**

- No differences between male and female.
- Main effect of hemisphere (F(1,17)=4.98, p=.039) for HbO in the frontal region.
- The most lateral-anterior frontal channel showed the main difference between the two hemispheres (t=3.353, p=.004).
- Interaction congruency * hemisphere (F(1,17)=10.02, p=.006) in the parietal region (increase in the left hemisphere and decrease in the right hemisphere for incongruent stimuli and opposite pattern for congruent stimuli).
- The most left-anterior parietal channel showed the main difference between activation for congruent and incongruent stimuli (t=-2.282, p=.035) (Fig. 3).
- The most left-anterior parietal channel showed a significant difference with the activation of the symmetric channel in the congruent condition (t=-2.231, p=.039).
- For HbR no statistically significant differences but a tendency in the parietal region for the interaction congruency * hemisphere (F(1,17)=3.34, p=.085).

**REFERENCES**


**ACKNOWLEDGES**

This work was supported by Grant STPD 11BBHM from the University of Padova.