

Selective involvement of the right dorsal occipital stream for the spatial processing of sounds in early blind subjects.

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Several studies have demonstrated that the occipital cortex of early blind subjects reorganize itself and becomes massively involved in the processing of auditory informations. However, it is still poorly understood if rewired occipital regions maintain a functional organization similar to the functional topography observed in the sighted. In the present study, we asked 11 early blind and 11 matched sighted subjects to either process the spatial location or pitch properties of the same sounds during functional Magnetic Resonance Imaging acquisition. We observed that the spatial processing of sounds selectively recruited the right dorsal occipital stream, a region well known to be involved in visuo-spatial processing in sighted subjects. These results represent a compelling demonstration that the “dorsal occipital stream” maintain its functional role for space processing in case of early visual deprivation but apply this coding ability to another modality due to crossmodal plasticity.