

# Awareness Might Be Assessed By Quatitive Electric Tomoggraphy In Persistent Vegetative State And Minimally Conscious State

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## Abstract

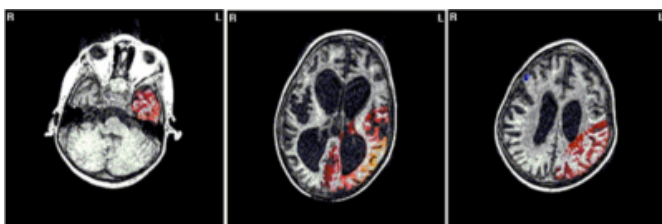
Monti et al. published interesting results using fMRI for assessing willful responses in PVS and MCS.<sup>1</sup>

We studied an 8-year-old boy diagnosed as PVS after repeated clinical examinations. We investigated whether there was brain activation in response to hearing his mother's voice, compared with the voices of unknown women, using quantitative electric tomography (QEEGt).<sup>2,3</sup>

We found functional activation for EEG frequencies from 14-58 Hz, with a peak at 33.2 Hz (gamma band). QEEGt maps showed brain activation localized in the lateral and posterior regions of the left cerebral hemisphere (Figure 1). No brain activation was found in the patient hearing the voices of unknown women.

## Figure 1

Figure 1. Axial QEEGt maps illustrate patient's brain activation in response to hearing his mother's voice, localized in the left lateral and posterior region of the left cerebral hemisphere



Our results suggested recognition of the mother's voice in a PVS. QEEGt directly reflects immediate neuronal activation, because this technique entails a higher time resolution, compared with other neuroimaging techniques depending of CBF changes.<sup>2-4</sup>

Therefore, in some patients bedside clinical assessments may not reveal awareness, regardless of how methodically they are applied.<sup>1,2</sup> These findings launch new ethical and practical implications for the management of these patients.<sup>1,2,5</sup>

## References

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