Brainwaves show vegetative patients’ thoughts

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Severely brain-damaged patients may be capable of being consciously aware of the outside world. A relatively simple test based on measuring patterns of brainwaves has revealed that some patients in a persistent vegetative state have a “robust” network of brain activity that allows conscious thoughts. The test could be developed into a diagnostic tool for doctors to assess whether such patients might be able to understand what is going on around them, said Srivas Chennu, a clinical neuroscientist at Cambridge University.

“Our research could improve clinical assessment and help identify patients who might be covertly aware despite being uncommunicative,” Dr Chennu said. Researchers analysed the brainwaves of 32 patients using 128 electrical sensors. Thirteen patients were classed as being in a persistent vegetative state, with the rest being minimally conscious.

The study, published in the online journal PLoS Computational Biology, found four of the 13 patients with persistent vegetative state had a “robust” network of brain activity.

The brain networks in two brain damaged patients (left and middle), one of whom imagined playing tennis (middle), alongside a healthy adult (right).