Reviewer's report

Title: Visual fixation in the vegetative state: an observational case series PET study

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Reviewer: Adrian Owen

Reviewer's report:

This is a very interesting study, which is, I think, the first to address the relationship between prolonged fixation in the vegetative state and brain metabolism as measured by FDG-PET. The results (as evidenced from Fig 1) are conclusive - both patient groups (those who fixated and those who did not) show profound reductions in global cortical metabolism, yet they are clearly not different from one another.

Minor discretionary revision

One potential worry is that 5 patients in each group is not a very large sample and power to detect a difference (were it there) would be quite low. The presentation of single-subject data in the lower half of Fig 1 makes it patently clear that this is not a significant worry (there is almost complete overlap between the two patient groups), but the authors might want to point this out in the Discussion, to make sure that their finding as the impact that it deserves.

Minor essential revisions

Their measure of 'good outcome' was defined as recovery of functional communication. Given that very few of these patients will recover functional communication within the first year, I would be interested to know whether there were any differences in outcome at all. That is to say, were there any notable differences at all a year after scanning between the two groups? This only requires a sentence or two to be added to the manuscript, but I think it is important to establish whether fixation in this group is associated with any improved outcome at all (I assume it doesn't, but it should be stated).

In my opinion he very last sentence of the manuscript should be modified slightly such that 'higher order frontoparietal cortical brain function' (as measured by FDG-PET) is not equated with conscious awareness, but rather is assumed to reflect it. That is to say, one can not unequivocally assume no conscious awareness on the basis of reduced frontoparietal cortical brain function. All that is required is a slight modifier to along the lines of "....frontoparietal cortical brain function which is assumed to be associated with conscious awareness". They may be similar assumptions made elsewhere in the manuscript in which case they should be similarly fixed, but this will only require the addition of a word or two.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no competing interests as such. I do have a potential conflict of interest, which I assume must have been very obvious to the Editorial Board when they sent me the manuscript. That is to say, I have published several papers with Dr Laureys and I currently hold a grant with him as joint PIs. I had no involvement in the work described in this manuscript at all and it is not funded under our joint grant. Indeed, I have not seen the data before reading the paper. I feel entirely able to review the paper objectively, although if you feel that this conflict is to serious, I am quite happy for you to disregard my review - I know how difficult it is to get Reviewers in this small field (I must receive several papers of Dr Laureys to review each month!), but I wanted to read the paper so accepted the review. However, in retrospect, I can see that I should have pointed this out to you before I accepted. I'll let you decide!