

This response was submitted to the consultation held by the Nuffield Council on Bioethics on *Novel neurotechnologies: intervening in the brain* between 1 March 2012 and 23 April 2012. The views expressed are solely those of the respondent(s) and not those of the Council.

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General questions

1. Have you ever used a technology that intervenes in the brain, and with what consequences? Please describe your experience.

N/A

2. If you have not used a technology that intervenes in the brain before, would you do so if you were ill? Why / why not?

3. Would you use a technology that intervenes in the brain for non-medical purposes, such as gaming or improving your cognitive skills? Why / why not?

4. What are the most important ethical challenges raised by novel neurotechnologies that intervene in the brain?

5. In what ways, if at all, should the development and use of these technologies be promoted, restricted and/or regulated? Please explain your reasons.

6. Have you used a BCI, and if so, with what consequences? Please describe your experience. At the Center for Applied Neuroscience researchers are exploring BCI that can be of help to individuals with motor and cognitive disorders

7. If you have not used a BCI before, under what circumstances would you do so?

8. What are your expectations and concerns for BCIs?

9. Are there any particular ethical or social issues associated with BCIs?

10. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response.

Evidence-based research should be promoted in BCI that is specific to the target populations. For example, patients with cognitive deficits might not be able to respond to this technology, or could respond to very simple types of BCI technology.

11. Have you used neurostimulation and if so, with what consequences? Please describe your experience.

We are conducting neuropsychological testing for patients who may be candidates for DBS.

12. If you have not used neurostimulation before, under what circumstances would you do so?

13. Under what circumstances do you think it might be acceptable to use neurostimulation in non-medical context (that is to say, not for the treatment of a disease or disability)?

14. Are there any particular ethical or social issues associated with neurostimulation?

15. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response.

Given the risks and demands of the procedures, it is important that patients are fully capable to understand them. Careful screening, pre and post testing is required to ensure success and identify potential risks.

16. Under what circumstances would you use neural stem cell therapy?
This is beyond the scope of our Center.

17. What do you think of the risks and benefits of neural stem cell therapy?

18. Are there any particular ethical or social issues associated with neural stem cell therapy?

19. How do you feel about neural stem cell therapy being used for non-medical purposes one day, for example for human enhancement?

20. What would robust and effective regulation of research in this area look like? Is more or less regulation needed? Please justify your response.