NUFFIELD COUNCIL ON BIOETHICS

Overview of report

Novel neurotechnologies: intervening in the brain

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Many people live with severe neurological and mental health disorders, such as Parkinson's disease, stroke and depression. Several new technologies that intervene in the brain offer the potential to address these conditions where other treatments are not effective. These neurotechnologies are also being investigated for their possible uses for enhancement, gaming and military purposes.

The Nuffield Council on Bioethics has published a report that looks at the potential benefits and risks presented by the development and use of four categories of technologies that intervene in the brain (see overleaf). The report sets out an ethical framework based around two fundamental considerations: there is a need for new approaches to treating serious disorders in the absence of other effective interventions, but there is also uncertainty about the benefits and risks of novel neurotechnologies because of our limited understanding of the effects of intervening in the brain.

The report concludes that proportionate regulation in this field must promote innovation while prioritising the delivery of safe and effective neurotechnologies. Greater transparency, accessibility and linking of existing information from research, regulation and clinical care will be essential to achieving this goal. Specific recommendations include:

Use of novel neurotechnologies in healthcare and health research settings

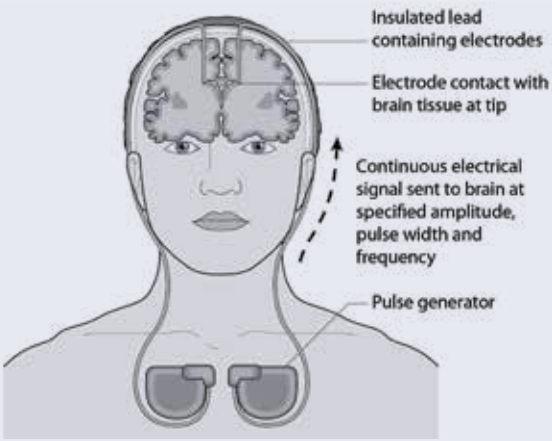
- Publicly accessible registers of data about the use of novel neurotechnologies should be established through joint efforts of professional bodies such as the Association of British Neurologists, Society of British Neurological Surgeons and the Royal College of Psychiatrists.
- NHS services providing treatments using invasive neurotechnologies should be required to offer independent counselling, to provide an opportunity for patients and those close them to explore uncertainties and personal implications, prior to choosing these treatments.
- Guidance on responsible conduct in experimental treatment should be produced by the General Medical Council, Health Research Authority and Medical Research Council.
- The Health Research Authority should develop ethical guidance on the use of 'sham' neurosurgery as controls in clinical trials of neural stem cell therapies.
- NHS services using neurotechnologies should be required to adhere to existing NICE guidance on the use of new interventional procedures.

Non-medical uses of novel neurotechnologies

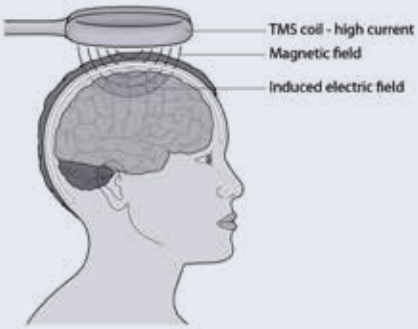
- The European Commission should consider classifying neurostimulation devices as medical devices for regulatory purposes, irrespective of the uses for which they are marketed.
- Advice to teachers and parents about the current limited evidence on the effectiveness of neurodevices for 'enhancement' should be issued by the UK Departments of Education and the Royal College of Paediatrics and Child Health.

To access the full report and for more information, please see: www.nuffieldbioethics.org/neurotechnology

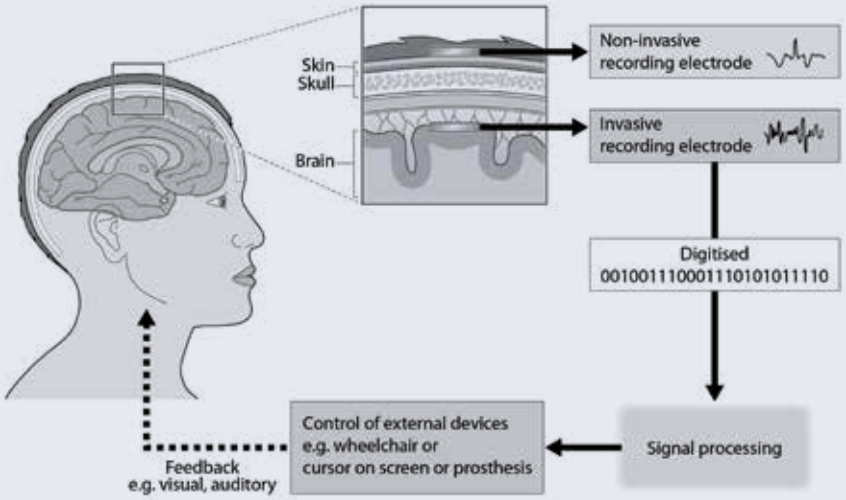
Deep brain stimulation



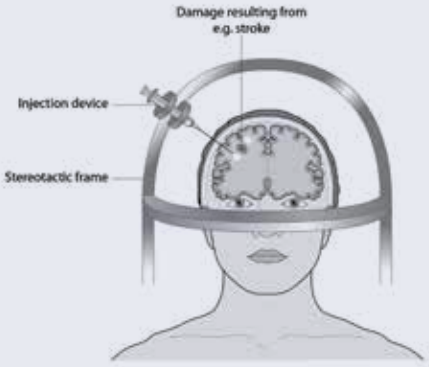
Transcranial magnetic stimulation (a form of transcranial brain stimulation)



Brain-computer interface



Neural stem cell therapy



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To order a printed copy of the report, please contact:
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