

**Bioethics Advisory Committee Press Release**  
*Embargoed till 5.00 pm, 9 January 2013*

**Ethical, Legal and Social Issues in Neuroscience Research**

Release of a Consultation Paper by the Bioethics Advisory Committee

1. The Bioethics Advisory Committee (BAC) announces the release of a Consultation Paper entitled "Ethical, Legal and Social Issues in Neuroscience Research".
2. Rapid advances in neuroscience research – the study of the brain and the rest of the nervous system, and increasing global and local interest in the field, led the BAC to deliberate on the implications of such research. With an increase in the global burden of neurological and psychiatric disorders, neuroscience research has become a priority research area in many countries, as the search for effective therapies for these disorders becomes one of the greatest challenges of the twenty-first century.
3. As the brain is the seat of one's mind, intelligence, consciousness, thoughts and emotions, research on the human brain could be seen as different from research on any other organs or tissues. The availability of new and more powerful tools has made it possible not only to explore the brain in greater detail, but also to modify it, thus giving rise to questions about the real and potential impact of neuroscience research on the individual and society.
4. The BAC is focusing on research that involves any intervention on the brain, or which affects the brain or mind significantly. The Consultation Paper highlights the main ethical, legal and social issues related to such research, and covers the following areas:
  - (a) Neuroimaging;
  - (b) Brain stimulation;
  - (c) Brain-computer interfaces;
  - (d) Stem cell therapy; and
  - (e) Neuropharmaceuticals.
5. Some of the concerns in neuroscience research relate to research in general, such as obtaining informed consent of individuals with cognitive impairment to participate in research. Obtaining informed consent could be a major challenge in neuroscience research, because research participants may be patients with neurological or psychiatric disorders, some of whom are particularly vulnerable, and protecting them requires special consideration. If the patients are either cognitively or emotionally impaired, they may not fully understand what they are consenting to, or they may be particularly susceptible to inducement or coercion.
6. However, unique issues are also raised by neuroscience research, particular when involving neurotechnologies, because the human brain underlies thought, emotion and behaviour. For example, some interventions developed to treat neuropsychiatric disorders can enhance cognition in healthy individuals. Others are being developed outside the purview of medicine, such as for the detection of

deception. The long-term effects of using these neurotechnologies are not well known, and there is a possibility that it may alter one's personality or sense of identity. Should healthy individuals be included in research involving the use of neurotechnologies for non-medical purposes, particularly cognitive enhancement? As children's brains are still developing, should they be included in research involving the use of neurotechnologies? Should there be any special safeguards in the ethics governance of neuroscience research, in addition to what is already in place for other types of human biomedical research? These are some of the issues which the BAC would like to seek public views on.

7. The Consultation Paper will be distributed to various research, government and healthcare institutions, and professional and religious organisations for their comments. The BAC also invites and welcomes feedback from the public on the issues discussed in the paper. The views of the public and interested parties will assist the BAC in making recommendations on neuroscience research. Those interested in providing their views could obtain a copy of the Consultation Paper from the BAC website: [www.bioethics-singapore.org](http://www.bioethics-singapore.org) and send their responses by 31 March 2013 to the BAC Secretariat to:  
contactus@bioethics-singapore.org or  
11 Biopolis Way, #10-12, Helios, Singapore 138667
8. The BAC has invited Professor Steven Hyman, one of the members of its International Panel of Experts, to be involved in this public consultation. Professor Hyman is the Director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT and Harvard, and Distinguished Service Professor of Stem Cell and Regenerative Biology at Harvard University, USA. He will be speaking at the following events:
  - (a) Public forum on 12 January, 2013 (Saturday) on “Brain, Mind & Technologies - What's New & What's Next?”, from 2.00pm to 5.00pm, at the Science Centre Singapore.
  - (b) SAL-BAC Symposium on 11 January 2013 (Friday) from 4.00pm to 6.00pm at the Viewing Gallery, Supreme Court; and
  - (c) “Challenges in Neuroscience Research” – a lecture and dialogue session (for those involved in neuroscience research or the review of such research) on 10 January 2013 (Thursday) from 12.00 to 4.00pm at Room 01-01A, Block MD 6, Centre for Translational Medicine, National University of Singapore (14 Medical Drive, Singapore 117599).
9. More details on the events are available on the BAC website.

### **About the BAC**

The BAC was established by the Government in December 2000 to address the ethical, legal and social issues arising from human biomedical research and its applications. It develops and recommends policies on these issues, with the aim of protecting the rights and welfare of individuals, while allowing the biomedical sciences to develop and realise its full potential for the benefit of mankind.

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