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GIENS WORKSHOPS 2015 / *Translational research*

# Translational research on cognitive and behavioural disorders in neurological and psychiatric diseases<sup>☆</sup>



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**Summary** The important medical and social burden of nervous system diseases contrasts with the currently limited therapeutic armamentarium and with the difficulty encountered in developing new therapeutic options. These failures can be explained by the conjunction of various phenomena related to the limitations of animal models, the narrow focus of research on precise pathophysiological mechanisms, and methodological issues in clinical trials. It is perhaps the paradigm itself of the way research is conducted that may be the real reason for our incapacity to find effective strategies. The purpose of this workshop was to define overall lines of research that could lead to the development of effective novel therapeutic solutions. Research has long focused on diseases per se rather than on cognitive and behavioural dimensions common to several diseases. Their expression is often partial and variable, but can today be well-characterised using neurophysiological or imaging methods. This dimensional or syndromic vision should enable a new insight to the question, taking a transnosographic approach to re-position research and to propose: translational models exploring the same functions in animal models and in humans; identification of homogeneous groups of patients defined according to the clinical, anatomico-functional and molecular characteristics; and preclinical and clinical developments enriched by the use of cognitive-behavioural, biological neurological, and imaging biomarkers. For this mutation to be successful, it must be accompanied by synchronised action from the public authorities and by ad hoc measures from the regulatory agencies.

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## Abbreviations

|           |   |       |  |
|-----------|---|-------|--|
| ALLISTENE | French National alliance for sciences and numerical technology ( <i>Alliance des sciences et technologie du numérique</i> )                       | EMA   | European Medicines Agency  |
| ANSM      | French national agency for the safety of drugs and health products ( <i>Agence nationale de sécurité du médicament et des produits de santé</i> ) | FDA   | Food and Drug Administration   |
| AVIESAN   | French national alliance for life sciences and health ( <i>Alliance pour les sciences de la vie et de la santé</i> )                              | GAAD  | Global Action Against Dementia   |
| BCI       | brain-computer interfaces   | GDR   | Grouping for international research ( <i>Groupement de recherche internationale</i> )                                    |
| CoEN      | centres of excellence in neurodegeneration  | ITMO  | Thematic Multi-organisms Institute ( <i>Institut thématique multi-organisme</i> )  |
| CORT      | chronic corticosterone treatment  | JPND  | Joint Program Neurodegenerative Disease  |
| CSF       | cerebral spinal fluid   | MEG   | magnetic encephalography   |
| DSM-IV    | diagnostic and statistical manual of mental disorder (IVth edition)   | MRI   | magnetic resonance imaging   |
| DVS       | domain of strategic valorisation  | NIMH  | National institute of mental health  |
| EAE       | experimental autoimmune encephalitis  | NINDS | National institute of neurological disorders and stroke  |
|           |   | NMDA  | N-methyl-D-aspartate   |
|           |   | PCP   | phencyclidine  |
|           |   | PET   | positron emission tomography   |
|           |   | POC   | proof of concept   |
|           |   | SATT  | Societies for the acceleration of technological transfer ( <i>Sociétés d'accélération du transfert de technologies</i> ) |

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