PRESS RELEASE FROM TRANSLATIONAL PSYCHIATRY AND MOLECULAR PSYCHIATRY

For papers that will be published on online 04 October 2011

This press release is copyrighted to Translational Psychiatry and Molecular Psychiatry. Its use is granted only for journalists and news media receiving it directly from the Nature Publishing Group.

EMBARGO:

0400 US Eastern Time / 0900 London time (BST) / 1700 Japanese time / 1900 Australian Eastern Time Tuesday 04 October

Wire services' stories must always carry the embargo time at the head of each item, and may not be sent out more than 24 hours before that time.

 Solely for the purpose of soliciting informed comment on this paper, you may show it to independent specialists - but you must ensure in advance that they understand and accept the embargo conditions.

This press release contains:

• Summaries of newsworthy papers:
  
   * Translational Psychiatry: Differential response to positive rearing conditions
   * Molecular Psychiatry: ‘Hate circuit’ altered in patients with depression
   * Molecular Psychiatry: Prion-like mechanism of transmission in Alzheimer’s disease

• Geographical listing of authors

PDFs of the papers mentioned on this release can be found in the Academic Journals section of http://press.nature.com. Press contacts for the Nature Publishing Group journals are listed at the end of this release.

Warning: This document, and the NPG Academic Journal paper to which it refers, may contain information that is price sensitive (as legally defined, for example, in the UK Criminal Justice Act 1993 Part V) with respect to publicly quoted companies. Anyone dealing in securities using information contained in this document or in advanced copies of Nature's content may be guilty of insider trading under the US Securities Exchange Act of 1934.

PLEASE CITE EITHER TRANSLATIONAL PSYCHIATRY OR MOLECULAR PSYCHIATRY AND EITHER http://www.nature.com/tp OR http://www.nature.com/mp AS THE SOURCE OF THE FOLLOWING ITEMS. IF PUBLISHING ONLINE, PLEASE CARRY A HYPERLINK TO THE APPROPRIATE JOURNAL’S WEBSITE.

[1] Translational Psychiatry: Differential response to positive rearing conditions

DOI: 10.1038/TP.2011.44

Individuals carrying a certain gene variation are more affected by positive environmental conditions early in life than individuals without this variation, reports a paper online this week in Translational Psychiatry. Although adverse environmental conditions have long been known to differentially affect individuals as they develop, these findings support the notion that positive conditions, such as supportive parenting, also result in different levels of positive emotion. Results from this study could help to inform future interventions in developmental psychopathology.
The differential susceptibility hypothesis (DSH) suggests that individuals are affected differently by the environments they are exposed to. Benjamin Hankin and colleagues tested this hypothesis by measuring the responsiveness of genetically susceptible male and female humans, aged 9 to 15 years, to supportive or unsupportive parenting. The individuals tested all carried an allelic variation in the 5-HTTLPR gene — a gene affecting serotonin levels in the brain. The researchers found that, consistent with the DSH, genetically susceptible youths who experienced unsupportive parenting displayed low levels of positive affect, while genetically susceptible youth who were exposed to supportive parenting showed high levels of positive affect.

Studies on developmental influence have traditionally focused exclusively on the impact of negative environmental conditions, or lack of negative environmental conditions, on overall socio-emotional functioning. These findings present the first empirical evidence that genetically susceptible individuals are more responsive to the full range of environmental contexts, including positive/supportive environments.

Author contact:
Benjamin Hankin (University of Denver, CO, USA)
Tel: +1 303 871 7468; E-mail: ben.hankin@psy.du.edu

Editorial contact:
Julio Licinio (The Australian National University, Canberra, Australia)
Tel: +61 2 6125 2550; E-mail: julio.licinio@anu.edu.au


DOI: 10.1038/mp.2011.127

A neural circuit associated with feelings of hate is uncoupled in patients with depression, reports a paper published online in Molecular Psychiatry. The study, which uses a novel approach for identifying altered functional circuits in the brains of patients with mental disorders, suggests that patients with depression may have reduced cognitive control over negative feelings toward both themselves and others.

The brain’s so-called ‘hate circuit’ is comprised of the superior frontal gyrus, insula and putamen, and is named for its altered activation when individuals view people whom they hate, or to whom they have strong emotional responses. Jianfeng Feng and colleagues constructed a template of connectivity from healthy individuals using a community of discovery algorithms they developed previously. This template was compared to functional networks derived from fMRI scans of 15 patients who had experienced a first-episode major depressive disorder and 24 patients with treatment-resistant depressive disorder. In addition to the uncoupling of the ‘hate circuit’ in both hemispheres in patients with depression, the authors observed other changes in neural circuits related to risk and action responses, reward and emotion, attention and memory processing.

By using a method of fMRI data analysis that does not make assumptions about which circuits might be altered or that brain regions are independent of one another, this is the first time that the ‘hate circuit’ has been implicated in depression. This new way of analyzing fMRI data could be used to improve both early diagnosis and treatment of depression, and could help to uncover as yet unknown circuits involved in other mental disorders.

Author contact:
Jianfeng Feng (University of Warwick, Coventry, UK)
Tel: +44 24 765 73788; Email: jianfeng64@gmail.com

Media contact:
Peter Dunn (University of Warwick, Coventry, UK)
Tel: +44 24 24 76 523708; Email: p.j.dunn@warwick.ac.uk

Editorial contact:
The pathology of Alzheimer’s disease (AD) could behave in a similar way as infectious prions, according to research published online in this week’s Molecular Psychiatry. Injection of human AD brain extracts into mice is shown to cause a build-up of amyloid-beta, one of the primary hallmarks of AD. This is the first evidence that amyloid-beta deposition can be induced by injection of AD brain extracts into mice that would not have developed these brain abnormalities naturally.

The build-up of amyloid-beta is known to be associated with AD, but the mechanisms controlling the initiation of this deposition remain unknown. Previous research indicates that misfolding and aggregation of amyloid-beta could be the triggering event, similar to the way prion diseases are propagated. Claudio Soto and colleagues explore this hypothesis by injecting AD brain samples carrying amyloid-beta into animals that would not have otherwise developed amyloid-beta plaques. Amyloid-beta aggregations characteristic of AD were observed in the animals, and these amyloid-beta deposits were detectable far from the injection site, suggesting that the seeding activity can diffuse through the brain.

The idea that misfolded amyloid-beta aggregates display similar behaviour to infectious prions may shed new light on the aetiology of neurodegenerative diseases. These findings contribute to our understanding of the origin of protein folding disorders, which could aid the development of new strategies for disease prevention and intervention.

Author contact:
Claudio Soto (The University of Texas Medical School, Houston, TX, USA)
Email: Claudio_Soto@uth.tmc.edu

Media contact:
Deborah Mann Lake (The University of Texas Medical School, Houston, TX, USA)
Tel: +1 713 500 3304; Email: Deborah.M.Lake@uth.tmc.edu

Editorial contact:
Julio Licinio (Australian National University, Canberra, Australia)
Tel: +61 2 6125 2550; E-mail: julio.licinio@anu.edu.au

GEOGRAPHICAL LISTING OF AUTHORS

The following list of places refers to the whereabouts of authors on the papers numbered in this release. For example, London: 4 - this means that on paper number four, there will be at least one author affiliated to an institute or company in London. The listing may be for an author’s main affiliation, or for a place where they are working temporarily. Please see the PDF of the paper for full details.

CHILE
Santiago: 3

CHINA
Changsha: 2
Shanghai: 2

NETHERLANDS
Groningen: 1
SPAIN
Bilbao: 3

UNITED KINGDOM
Warwick: 2

UNITED STATES OF AMERICA
Colorado
Denver: 1
New Jersey
New Brunswick: 1
Texas
Galveston: 3
Houston: 3

PRESS CONTACTS...
From North America and Canada
Neda Afsarmanesh, Nature New York
Tel: +1 212 726 9231; E-mail: n.afsarmanesh@us.nature.com

From Japan, Korea, China, Singapore and Taiwan
Mika Nakano, Nature Tokyo
Tel: +81 3 3267 8751; E-mail: m.nakano@natureasia.com

From the UK
Rebecca Walton (Press Officer, Nature London)
Tel: +44 20 7843 4502; E-mail: r.walton@nature.com

About Nature Publishing Group (NPG):
Nature Publishing Group (NPG) is a publisher of high impact scientific and medical information in print and online. NPG publishes journals, online databases and services across the life, physical, chemical and applied sciences and clinical medicine.

Focusing on the needs of scientists, Nature (founded in 1869) is the leading weekly, international scientific journal. In addition, for this audience, NPG publishes a range of Nature research journals and Nature Reviews journals, plus a range of prestigious academic journals including society-owned publications. Online, nature.com provides over 5 million visitors per month with access to NPG publications and online databases and services, including Nature News and NatureJobs plus access to Nature Network and Nature Education’s Scitable.com.

Scientific American is at the heart of NPG’s newly-formed consumer media division, meeting the needs of the general public. Founded in 1845, Scientific American is the oldest continuously published magazine in the US and the leading authoritative publication for science in the general media. Together with scientificamerican.com and 15 local language editions around the world it reaches over 3 million consumers and scientists. Other titles include Scientific American Mind and Spektrum der Wissenschaft in Germany.

Throughout all its businesses NPG is dedicated to serving the scientific and medical communities and the wider scientifically interested general public. Part of Macmillan Publishers Limited, NPG is a global company with principal offices in London, New York and Tokyo, and offices in cities worldwide including Boston, Buenos Aires, Delhi, Hong Kong, Madrid, Barcelona, Munich, Heidelberg, Basingstoke, Melbourne, Paris, San Francisco, Seoul and Washington DC. For more information, please go to www.nature.com.