

Media Release: European College of Neuropsychopharmacology (ECNP)

“For the science and treatment of disorders of the brain”

[Study shows that opioids may affect how we perceive ‘cuteness’ of babies](#)

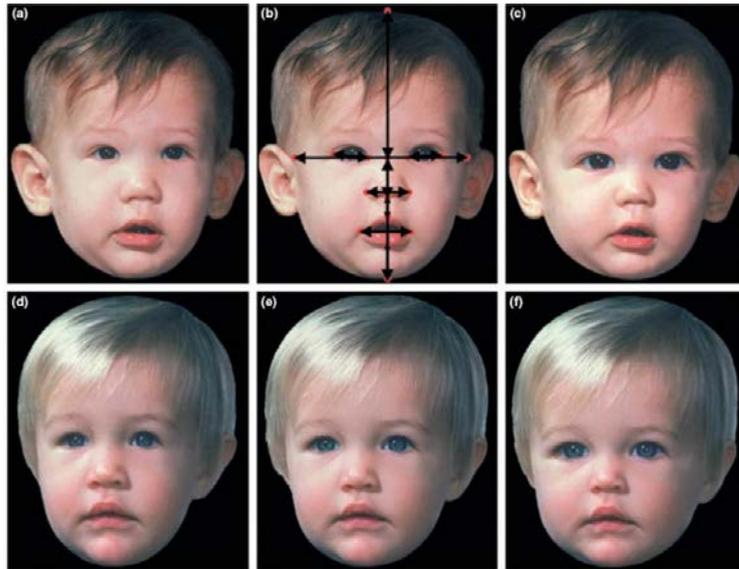
For Immediate Release Monday 19th September 2016

Vienna: A new pilot study has found that opioid dependence – which includes dependence on drugs such as heroin – affects how ‘cute’ we perceive images of children to be. As cuteness can trigger caregiving motivation, this result indicates that the opioid system may have significant effects on our ability to care for others. The implications of this may need to be considered in any consideration of medical or recreational opioid use.

Addiction to opioids – which includes illicit drugs such as heroin as well as medications commonly prescribed for pain - affects over 4 million people in the USA. It is associated with reduced responses to natural rewards as well as abnormal social behaviour, such as crime and dysfunctional parenting. Now a group of US researchers is using our normal response to the ‘cuteness’ of babies, (a concept first described by the famous Austrian ethologist Konrad Lorenz as *Kindchenschema*) to experimentally test the effects of social cognition in individuals with opioid addiction.

Baby schema is a set of visual characteristics typical of human and animal babies, which makes them more adorable or “cute”. They include such features as large eyes, big foreheads, and small chins, which over evolution we have come to subconsciously recognise as characteristic of infants and inviting caretaking, so much so that we have incorporated these features into dolls, cartoon characters, adverts, and even car design, etc.

Earlier research by researchers at the Universities of Pennsylvania (US) and Muenster (Germany) showed that response to baby portraits produces motivation for caretaking and a response in the area of the brain associated with reward proportionate to the *Kindchenschema content of the portraits* (Glocker, et al, Proceedings of the National Academy of Sciences of the USA, 2009 and Glocker, et al, Ethology 2009: see below for full citation and acknowledgement for image rights).



*Features altered to change baby schema to ‘increasing cuteness’**

Professors Daniel Langleben, An-Li Wang and their team at the Perelman School of Medicine at the University of Pennsylvania hypothesized that chronic opioid abuse may affect the brain response to baby schema. They recruited 47 opioid- dependent adults who were starting treatment with an opioid blocker naltrexone and measured how they responded to the baby schema task while recording their brain activity using an fMRI (functional Magnetic Resonance Imaging) scanner, before and after 10 days of treatment with naltrexone.

According to Professor Daniel Langleben:

“We found that the brains of people with opioid dependence didn’t respond to the baby schema. When they were given a drug that blocked the effects of opioids, the response became more similar to the healthy people. This may indicate the mechanism underlying problems with social cognition deficits in people who abuse opioids.

In summary, treatment with opioid modulators seems to be changing the brain response to baby schema and may modulate our motivation to care for others. Our data also raise the question whether opioid medications may affect social cognition in general. Depending on the clinical context such effect could be either desirable or not. Opioids are some of the most common medications in the world, often taken on a long term basis, so this is something to consider”.

This research was funded by the NIH and the University of Pennsylvania

**Note: this figure has appeared in *Baby Schema in Infant Faces Induces Cuteness Perception and Motivation for Caretaking in Adults*. Melanie L. Glocker et al, *Ethology* 115 (2009) 257–263 © 2009 Blackwell Verlag GmbH, doi: 10.1111/j.1439-0310.2008.01603.x, and in *Baby schema modulates the brain reward system in nulliparous women*. Melanie L. Glocker et al, *PNAS* vol 106 no 22 (2009) pp 9115-9119, doi: 10.1073/pnas.0811620106. The cooperation of Wiley Global Permissions for the use of this figure is acknowledged.*

ENDS

Notes for editors

Please mention the European College of Neuropsychopharmacology Congress in any stories which result from this press release.

Contact details:

Daniel Langleben

langlebe@mail.med.upenn.edu

ECNP Press Officer, Tom Parkhill

press@ecnp.eu

tel +39 349 238 8191 (Italy)

The European College of Neuropsychopharmacology (ECNP)

The ECNP is an independent scientific association dedicated to the science and treatment of disorders of the brain. It is the largest non-institutional supporter of applied and translational neuroscience research and education in Europe. Website: www.ecnp.eu

The 29th annual ECNP Congress takes place from 17th to 20th September in Vienna. It is Europe's premier scientific meeting for disease-oriented brain research, annually attracting between 4,000 and 6,000 neuroscientists, psychiatrists, neurologists and psychologists from around the world. Congress website: <http://www.ecnp-congress.eu/>

This work was presented at the ECNP Congress: P.6.d.013 Presented on Monday 19th 12.15-13.45

Sustained opioid antagonism increases striatal sensitivity to baby schema in opioid dependent women

A.L. Wang¹, S.B. Lowen², I. Elman², Z. Shi¹, A. Bouril¹, R. Gur¹, D.D. Langleben¹

¹University of Pennsylvania, Department of Psychiatry, Philadelphia, USA, ²Harvard Medical School, Department of Psychiatry, Cambridge, USA