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**[Nature and nurture separately influence dopamine activity](#)**

DOI: 10.1038/npp.2012.207

Both genes and environmental factors can influence the activity of the brain chemical dopamine,  
though in different areas of the brain, according to a study published this week in  
*Neuropsychopharmacology*. As dopamine plays an important role in personality and behavior,  
these findings may have important implications for better understanding of neuropsychiatric  
disorders such as schizophrenia, depression and drug addiction.

Using positron emission tomography (PET) imaging, Paul Stokes and colleagues assessed differences in the dopamine-producing ability of discrete regions of the brain in identical versus fraternal twins. Dopamine is important to various aspects of personality such as risk-taking behavior, cognition and vulnerability to addiction. In this manner, the authors could examine the contributions of genes versus individual experiences.

The authors found that dopamine production in the sensorimotor striatum – a part of the brain known to regulate habit formation – was strongly influenced by genes. This helps explain why some people are more prone to developing certain habits than others. Our everyday experiences, but not our genes, were shown to influence the ability to produce dopamine in the limbic striatum, a part of the brain involved in emotion, particularly feelings of reward and pleasure, and in feeding behavior.

**Author contact:**

Paul Stokes (Imperial College London, London, UK)  
Tel: +44 207 594 2679; E-mail: [paul.stokes@imperial.ac.uk](mailto:paul.stokes@imperial.ac.uk)

**Editorial contact:**

Natalie Marler (*Neuropsychopharmacology*, Brentwood, TN, USA)  
Tel: +1 615 324 2371; E-mail: [nmarler@acnp.org](mailto:nmarler@acnp.org)

**PRESS CONTACTS**

*For media inquiries relating to embargo policy for the journal Neuropsychopharmacology:*

Rachel Twinn, *Nature* London  
Tel: +44 20 7843 4658; E-mail: [r.twinn@nature.com](mailto:r.twinn@nature.com)

*From North America and Canada*  
Neda Afsarmanesh, *Nature* New York  
Tel : +1 212 726 9231; E-mail : [n.afsarmanesh@us.nature.com](mailto:n.afsarmanesh@us.nature.com)

*From Japan, Korea, China, Singapore and Taiwan*  
Eiji Matsuda, *Nature* Tokyo  
Tel: +81 3 3267 8751; E-mail: [e.matsuda@natureasia.com](mailto:e.matsuda@natureasia.com)

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