

**August 2011 NIH  
Agency Report  
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**July 21, 2011: Zinc ‘sparks’ fly from egg within minutes of fertilization**

NIH-funded study of animal eggs reveals major role for metal. “The discovery of egg cells’ massive intake and later release of zinc defines a new role for this element in biology,” said Louis DePaolo, chief of the Reproductive Sciences Branch at the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), one of the NIH institutes supporting the study. “We anticipate the findings will one day lead to information useful for the treatment of infertility as well as the development of new ways to prevent fertilization from occurring.” The findings appear in the July issue of *ACS Chemical Biology*.

<http://www.nih.gov/news/health/jul2011/nichd-21.htm>

**July 18, 2011: Artificial Human Liver May Speed Drug Development**

Scientists have devised an artificial human liver that, when implanted in mice, continues to make human proteins and break down certain drugs as the human liver would. The technique could lead to more accurate testing of potential medications.

<http://www.nih.gov/researchmatters/july2011/07182011liver.htm>

**July 11, 2011: Receptor limits the rewarding effects of food and cocaine**

NIH scientists help show molecule’s crucial role in dopamine regulation. Researchers have long known that dopamine, a brain chemical that plays important roles in the control of normal movement, and in pleasure, reward and motivation, also plays a central role in substance abuse and addiction. In a new study conducted in animals, scientists found that a specific dopamine receptor, called D2, on dopamine-containing neurons controls an organism’s activity level and contributes to motivation for reward-seeking as well as the rewarding effects of cocaine.

A report of the findings, by researchers at the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and colleagues at the Institute for Research on Genetic Engineering and Molecular Biology in Argentina and the University of Michigan Medical School, Ann Arbor, appears online in *Nature Neuroscience*. <http://www.nih.gov/news/health/jul2011/niaaa-11.htm>

**June 27, 2011: Mechanism of Fast-Acting Antidepressant Revealed**

A new study in mice has identified the molecular players involved in the rapid antidepressant effects of ketamine, a common anesthetic. The findings could lead to better, faster-acting antidepressant medications in the future.

<http://www.nih.gov/researchmatters/june2011/06272011antidepressant.htm>

**June 27, 2011: Key Step Identified in Legionnaires’ Infection**

Researchers have uncovered a key step in how the bacterium responsible for Legionnaires’ disease takes control of the cells it infects. The finding may one day lead to new ways to treat Legionnaires’ disease and conditions caused by related bacteria.

<http://www.nih.gov/researchmatters/june2011/06272011legionnaires.htm>

**June 20, 2011: Brain Pathway Links Nicotine and Weight Loss**

Smokers often gain weight when they quit. A new study in mice may help explain why. Scientists have pinpointed a brain receptor that seems to mediate nicotine’s ability to reduce food intake. The finding may eventually lead to more targeted therapies for smoking cessation and weight control. <http://www.nih.gov/researchmatters/june2011/06202011nicotine.htm>