

## “Pay-per-view” study: how monkeys process, use social data

A recent study of monkeys found that they will accept smaller amounts of juice in exchange for viewing an image they want to see, a finding that study co-author Mike Platt says may lead to a better understanding of autism in humans.

The researchers gave male rhesus monkeys juice rewards for looking at either a neutral image or an image of another monkey, varying the amount of juice to see if the monkeys would “pay” to view a particular image. They found that the monkeys accepted smaller amounts of juice in return for viewing an image of a dominant monkey’s face, or the hindquarters of a female monkey. Conversely, they would view a less-dominant monkey only if they received more juice in return. These data, they say, “demonstrate that visual orienting decisions reflect the specific social content of visual information and provide the first experimental evidence that monkeys spontaneously discriminate images of others based on social status.”

Platt says it is of interest that the monkeys were not living in a colony where physical relationships could contribute to establishing dominance hierarchies. “So somehow,” he says, “they are getting this information by observation—by seeing other individuals interact.”

The researchers say the study offers insight into how the brain processes social information and uses it to make decisions. They are now investigating the neural pathways that influence monkeys’ decisions about shifting gaze to look at tar-

gets with differing reward values.

Platt says the findings are applicable to autism because “one of the main problems in people with autism is that they don’t find it very motivating to look at other individuals. And even when they do, they can’t seem to assess information about that individual’s importance, intentions or expressions.” He notes that future studies may allow researchers to develop drugs that affect monkeys’ neural processes in ways that mimic autism.

*Editor’s note: ARI has received numerous irate letters from parents regarding this study. (To quote one: “Hell will freeze over before this helps an autistic child.”) While such research may be of academic interest and might lead to treatment insights decades from now, ARI is struggling to find funds to support researchers who are developing treatments which are bringing about remarkable improvement, and even, in many cases, recovery in autistic children now, so I am very sympathetic to those of you who have expressed indignation about the Duke University “pay per view” monkey study.*

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“Monkeys pay per view: adaptive valuation of social images by rhesus macaques,” R. O. Deaner, A. V. Khera, and M. L. Platt, *Current Biology*, Vol. 15, No. 6, March 29, 2005, 543-8. Address: R. O. Deaner, Dept. of Neurobiology, Duke University Medical Center, Durham, NC 27710, deaner@neuro.duke.edu.

—and—  
Monkey ‘pay-per-view’ study could aid understanding of autism,” *Dukemed News*, Duke University Medical Center, January 28, 2005.

half of children with these symptoms improved so much that they no longer appeared to have ADHD. The behavioral gains seen in treated subjects, the researchers say, were comparable to those reported in studies of Ritalin.

When the placebo children began taking the active capsules, they made equally strong academic and cognitive gains. At the same time, the children kept on the supplements continued to improve significantly.

Richardson and Montgomery say their findings are consistent with converging evidence indicating that fatty acid deficiencies or imbalances “may... contribute to a range of adult psychiatric and neurologic disorders and to several common and overlapping childhood developmental disorders, including attention deficit hyperactivity disorder, dyslexia (specific reading difficulties), dyspraxia (developmental coordination disorder), and autistic spectrum disorders.”

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“The Oxford-Durham Study: a randomized controlled trial of dietary supplementation with fatty acids in children with developmental coordination disorder,” Alexandra J. Richardson and Paul Montgomery, *Pediatrics*, Vol. 115, No. 5, May 2005, 1360-66. Address: Alexandra J. Richardson, University Laboratory of Physiology, Parks Road, Oxford OX1 3PT, United Kingdom, alex.richardson@physiol.ox.ac.uk.

## BRIEFLY

### Blood markers detected

Researchers at the M.I.N.D. Institute compared blood samples from 70 autistic children between the ages of four and six to samples from non-disabled children, and detected consistent biochemical differences in the autistic group—a finding they say could lead to early diagnosis. Among the differences seen in children with autism: antibody-producing B cells were increased by 20 percent, natural killer cells were increased by 40 percent, and more than 100 proteins were differently expressed. Study co-author David Amaral says tests based on these findings could some day allow doctors to identify children who are genetically vulnerable to autism, and lead to prevention or earlier treatment.

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“Scientists report strong evidence of alterations in blood samples of children with autism,” news release, UC Davis M.I.N.D. Institute, May 5, 2005.

### Autism and diabetes

A preliminary study shows an increased prevalence of autism spectrum disorder in children with type 1 diabetes (an autoimmune form of diabetes that is genetically influenced). Sloane Freeman and colleagues identified nine children with both disorders in a retrospective chart review of 984 diabetic children attending a diabetic clinic, a number they say is significantly higher than would be expected.

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“Type 1 diabetes and autism: is there a link?” Sloane Freeman, Wendy Roberts, and Denis Daneman, *Diabetes Care*, Vol. 28, No. 4, April 2005, 925-6. Address: Denis Daneman, Division of Endocrinology, Hospital for Sick Children, Toronto, Ontario, Canada, denis.daneman@sickkids.ca.

### Spotting autism early

Infants as young as 12 months old show behaviors that can be strongly predictive of autism, according to a new study of 200 Canadian babies who were younger siblings of autistic children. Susan Bryson and colleagues identified 16 markers that were highly likely to identify infants later diagnosed with autism. These included a passive temperament and decreased activity at six months, followed by extreme irritability, a tendency to fixate on objects, reduced social interaction, lack of facial expression, an impoverished repertoire of gestures, a limited use of phrases, and lower scores for expressive and receptive language by the age of one.

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“Specific behaviors seen in infants can predict autism, new research shows,” news release, McMaster University, April 29, 2005.

## Fatty acids aid cognition

(continued from page 1)

changes in motor coordination occurred in either group. However, they say, the group taking fatty acids made more than nine months’ progress in reading during the first three months of treatment, compared to only three months of progress for the untreated group. In spelling, the treated group made six months’ worth of progress, while the untreated group made less than two months’ worth and thus fell even further behind.

In addition, ADHD-related symptoms dropped markedly in the treated group, but remained virtually unchanged in the untreated group. At the beginning of the study about one-third of the children had symptoms indicative of ADHD, but in the treated group,

### Drug Advisory Issued

The FDA has issued a public health advisory cautioning doctors that the seizure drug tiagabine (Gabitril) can cause seizures (including life-threatening status epilepticus) in previously seizure-free patients taking the drug for bipolar disorder or other psychiatric problems.