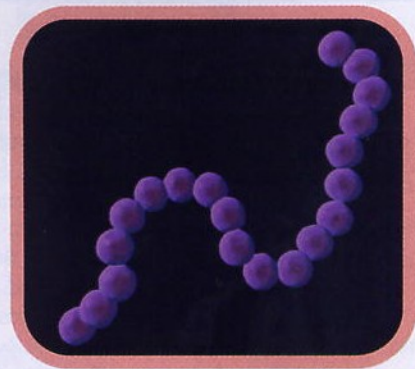


## Strep and obsessive-compulsive disorder

**New OCD study may provide some answers**

Is there a tie between strep throat and the development of tic disorders and obsessive-compulsive disorder? (H. Black, "Strep and obsessive-compulsive disorder: what's the link?" *The Scientist*, 13[18]:4, 1999.) Researchers at the University of Florida and the National Institutes of Mental Health want to find out. Over a 30-month period, these investigators will compare variation in levels of streptococcal antibodies in children with OCD and tic disorders to those disorders' intensities. "The goal is to see if there is a time correlation between strep [antibody] titer fluctuations and their



## Array on an old CD

**They're more than just drink coasters**

Researchers are finding uses for compact discs beyond holding your drink. Hua-Zhong "Hogan" Yu, Simon Fraser University, British Columbia, developed a way to create a regular pattern of molecular materials on the surface of a recordable compact disc (CD-R).

His team strips off the disc's protective plastic layer with nitric acid. This exposes the regular "mountain-valley" arrangement of a CD-R's thin gold film (H.-Z. Yu et al., "Templated electrochemical deposition of zirconia thin films on 'recordable CDs,'" *Analytical Chemistry*, advance online publication, DOI:10.1021/ac025686n). "This is an easy, inexpensive, and

reproducible method for preparing thin layers of material with an ordered pattern at the microscale," says Yu. They can then attach organic molecules containing gold-loving sulfur. The sulfur-organic layer, once attached, creates a sticky surface to create peptide, DNA, or protein arrays. Yu says he's been using the gold substrates from CD-Rs to assemble molecular layers of DNA. On an array of single-stranded DNA, complementary strands would change the electrical characteristics of the gold film. "The writing-reading mechanism of a CD drive might be adapted to detect these changes on the CD-R surface," Yu says. "This could allow DNA testing to be done on tiny amounts of DNA." Lúcio Angnes, who also investigates such techniques at São Paulo University in Brazil, says that CD surfaces seem more favorable for these processes than ordinary gold surfaces. There could be a stumbling block, however, he adds. "Some manufacturers are substituting gold with silver or aluminum, which won't work as well." —David Bradley



IMAGE: ERICA P. JOHNSON ↑

neuropsychiatric exacerbations," says Florida's Tanya Murphy, associate professor of psychiatry. The research, notes Murphy, is not designed to discover if strep throat can cause these disorders, as some researchers have hypothesized. Rather, the prospective study focuses on another question: "It will give us a stronger link that when these kids have exposure to strep and therefore their antibodies are increasing to strep ... is [strep] triggering or worsening their symptoms," she says. Murphy and her colleagues will also examine whether using antibiotics reduces the severity of the psychiatric disorders. "The idea is that the ones who get on antibiotics may have an improved course compared to the ones whose strep remains asymptomatic and are not on antibiotics," she says.—Harvey Black

IMAGE: COURTESY OF MOLLY LENORE, BARRETT KLEIN, ↑ & THE AMERICAN MUSEUM OF NATURAL HISTORY

## Redheads and pain

**Anesthesiologists find it's harder to knock out a carrottop**

Redheads often turn the heads of passers-by with their distinctive hair color, and now they're drawing particular notice from anesthesiologists. A study released last month at the annual meeting of the American Society of Anesthesiologists linked red hair to an increased need for anesthetics. Edward Liem, University of Louisville, Ky., says the study was conducted based on anecdotal, clinical observations from several anesthesiologists. It is the first example of a phenotype associated with anesthetic dosage. "We've seen differences due to age, but no one before has shown any difference between hair color," he says. Redheads have a dysfunction in the melanocortin 1 receptor that is responsible for their freckles and their hair color. Liem hypothesizes that the defect causes an increase of  $\alpha$ -melanocyte stimulating hormone and is responsible for lowering the pain perception threshold. The study indicates that redheads need about 20% more anesthesia than brunettes and blondes. Other physiological observations, such as a tendency toward bleeding and hypertension while under anesthesia, have previously been observed in redheads. But, Liem says, it's questionable whether those are due to receptor dysfunction.—Hal Cohen

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IMAGE: ERICA P. JOHNSON →