Birth defect linked to decongestant drug

If Mom takes an over-the-counter decongestant during the first trimester of pregnancy, she may increase the risk of delivering a baby with a type of abdominal defect, according to a preliminary new study.

Nobody really understands the cause of gastroschisis, a hole in the abdominal wall that allows the baby's intestines to protrude outside its body. Although the defect is rare, epidemiologists have noted a rise in the number of cases reported during the last three decades. That fact, along with the clue that young women are more likely to deliver a baby with this defect, raised the possibility that an environmental factor plays a role in the development of gastroschisis.

A team of epidemiologists decided to delve into the mystery. Martha M. Werler and her colleagues at Boston University School of Public Health in Brookline, Mass., began by looking at data gathered in an ongoing birth defect study that began in 1976. They analyzed data from 76 cases of gastroschisis as well as 2,142 controls who had other types of birth defects such as cleft lip. The data included interviews with new mothers, who were asked whether they had taken any drugs during pregnancy, including a common decongestant called pseudoephedrine.

Analysis revealed that women who had taken pseudoephedrine during the first trimester of pregnancy had a three-fold greater risk of delivering a baby with gastroschisis than women who had not taken this drug—a statistically significant finding. "If such an association is real, it could have very serious public health implications," Werler told SCIENCE NEWS.

Many obstetricians advise pregnant women to stay away from all drugs, even over-the-counter medications, during pregnancy. However, the danger from pseudoephedrine may arise early in gestation, before a woman realizes she is pregnant, Werler notes. Because pseudoephedrine products are sold in drugstores and supermarkets, people view them as a harmless way to treat the sniffles. The drug can be purchased in tablet form and is included in a wide variety of cold, flu and hay fever medications.

For most people, the drug's safety is not disputed. However, its impact on the developing baby has not been adequately studied, Werler says.

The study finds a potentially worrisome trend among women of childbearing age: a rising use of pseudoephedrine. While 2 percent of all new mothers interviewed from 1976 to 1978 reported using pseudoephedrine during pregnancy, 7 percent of those interviewed between 1988 and 1990 said they used the drug during pregnancy. The researchers report their data in the April TERATOLOGY.

Further research must be undertaken to ensure that the association is not due to chance, comments Richard K. Miller, an obstetrician at the University of Rochester (N.Y.) who wrote an editorial accompanying the Boston team's report.

Because the link between pseudoephedrine and gastroschisis is unproved, the authors remain cautious about drawing any conclusions from their preliminary findings. Werler says they cannot rule out the possibility that the drug is a marker for something else; perhaps an underlying condition such as the flu actually caused the abdominal wall defect, she says. *— K.A. Fackelmann*

In the lab, it's octopus see, octopus do

A fleshy, rippling octopus lumped in the corner of its tank doesn't seem capable of the dolphin's intelligent feats. Yet two Italian researchers report in the April 24 SCIENCE that this eight-armed invertebrate can learn a task simply by watching other octopuses do it — an ability previously seen only in more sophisticated, social vertebrates like dolphins or humans.

Octopuses are typically asocial animals, so scientists have generally assumed they lacked such imitative learning ability. Working at the Zoological Station of Naples, Graziano Fiorito and Pietro Scotto finally tested the idea.

The researchers placed two balls—one red, one white—inside a tank and trained one group of octopuses to attack the red ball and another group to attack the white one. Once trained, the two groups then performed the trick for untrained octopuses watching from an adjacent tank. After four demonstrations, each spectator was tested to see whether it would attack the same color ball as the group it had watched. The observers not only chose the right ball, Fiorito and Scotto found, but they learned more quickly and made fewer mistakes than their teachers did.

Cephalopods, such as octopuses and squid, have less complex neural circuitry than most vertebrates, which makes them good models for investigating the fundamental processes underlying human learning and behavior, says Roger T. Hanlon, an ethologist specializing in cephalopod behavior at the Marine Biomedical Institute in Galveston, Texas.

"If you can find out something about how learning systems operate in a wide range of animals, including very ancient ones like these, then you can learn something about the principles of learning as they pertain to all organisms," he says.

The new findings suggest that scientists may have underestimated the octopus' mental abilities. "Many people have considered observational learning to be a social skill that you would not expect in solitary animals," says Jean Boal, a graduate student in ecology at the University of North Carolina at Chapel Hill. "Yet octopuses can do it."

Boal speculates that the animals developed the skill to ensure their survival in the wild. An octopus' parents die when it's hatched, Boal says, so the young animal must learn to forage and avoid predators by watching other octopuses.

Hanlon and Boal say more research with octopuses may uncover more unmined scientific gems like the Italian findings. "Octopuses have the largest brain of any invertebrate," says Boal. "We've been much slower to figure out what they're doing with that brain."

— M. Stroh

Aye-aye! It's a boy!

Jim Wallace/Duke Univ.

No, it's not a cast member from "Gremlins." It's a baby aye-aye — the first member of this endangered primate species born in the Western Hemisphere.

The 5-ounce newborn arrived sometime between the evening of April 5 and the morning of April 6 at the Duke University Primate Center in Durham, N.C. Researchers there named the tiny male Blue Devil, in honor of the university's winning men's basketball team.

Duke scientists captured Blue Devil's mother, Endora, last year in Madagascar, where she apparently had become pregnant. Elwyn Simons, scientific director of the primate center, says Blue Devil will grow up with Endora and her new mate, Nosferatu.

Duke has maintained a colony of aye-ayes since 1988 as part of an international attempt to save the sinister-looking animals from extinction (SN: 3/19/88, p. 183). In their native Madagascar, aye-ayes are considered bad luck, and villagers hunt them down whenever possible. Legend has it that if an aye-aye points its bony third finger at you, you will die soon. In reality, the animals' enormous ears and long fingers are adapted for hearing and capturing bark-eating grubs. □