

BIOMEDICINE

Prenatal diagnosis of Cooley's anemia

Cooley's anemia (thalassemia) is an incurable blood disease common to people of Mediterranean and Middle Eastern origins. Now, for the first time, an infant has been successfully and safely screened for the disease before birth. The prenatal diagnosis was made by Yuet Wai Kan and Mitchell Golbus of the University of California at San Francisco. They report their results in the May 22 *NEW ENGLAND JOURNAL OF MEDICINE*.

Certain metabolic deficiencies and chromosome breaks could already be detected by amniocentesis—the withdrawal of amniotic fluid by a needle in the mother's abdomen (SN: 7/17/71, p. 44). The reason is that amniotic fluid, which bathes the fetus, contains fetal skin cells. To diagnose Cooley's anemia, however, fetologists need fetal blood cells.

So Kan and Golbus learned how to use the same technique to withdraw a few drops of fetal blood simply and safely. Their subjects were women about to undergo abortions. This points up one of the medical benefits gained from the controversial area of fetal research (SN: 5/3/75, p. 285). Then they tried the technique on an infant showing symptoms of Cooley's anemia. They diagnosed the infant as not having the disease, and sure enough, he was born healthy. A similar technique could be used for prenatal diagnosis of sickle cell anemia, which is common among blacks, Kan and Golbus believe.

More progress on cancer vaccine

Last year, primates were successfully vaccinated against cancer for the first time—by R. Laufs of the University of Göttingen, West Germany. The achievement sparked the possibility of making a human cancer vaccine, at least against cancers caused by the herpes virus (SN: 6/29/74, p. 413).

Laufs and his colleague H. Steinke have taken their vaccine a step further, underscoring the viability of a cancer vaccine. Their most recent research is reported in the May 15 *NATURE*.

Last year they used killed herpes virus as a vaccine. This year they used antibodies against the virus. In other words, monkeys were vaccinated with antibodies that other monkeys had made when they were injected with herpes virus. When the vaccinated monkeys were injected with herpes virus, they did not get cancer. Control monkeys did.

Allergies and birthdate

Immunologists have reason to believe that if a newborn is exposed to a particular allergen, he will probably develop a tolerance to that allergen. Harvey Kleiner and his allergy-immunology team at the Medical College of Wisconsin tested persons who were allergic to grass, ragweed or tree pollen to see if they might have been born at the time of year when those allergens were not present in the environment.

They examined the birth dates of 210 persons who were allergic to one of these three pollens and determined whether the birth dates coincided with those periods of the year when pollen are not present in the environment. In other words, individuals allergic to trees would probably not be born mid-April through mid-May, when tree pollen is present. Persons with grass allergies would probably not be born from May 23 through July 25, when grass pollen is present. And persons with ragweed allergies would likely not be born from August 3 to October 2—ragweed season.

Kleiner and his co-workers were unable to find the correlations they had hoped to find, they report in the May *ANNALS OF ALLERGY*. However, they still believe such links might exist.

BEHAVIOR

Testing—One, Two, Three

Pay attention! Students, drivers and people in high-risk jobs had better pay attention or they'll be in trouble, possibly serious trouble. Unfortunately, for some people paying attention is not an easy task. J. R. Block of the Human Resources Center in Albertson, N.Y., has developed a technique that might be useful in identifying people who are prone to lapses of attention. Students so identified might be given special education; others might be warned against driving or work conditions in which a lapse of attention could be fatal.

The technique, described in the June *PSYCHOLOGY TODAY*, is called the Attention Diagnostic Method (ADM). In a dark room, a person faces a glowing board with the numbers 10 to 59 arranged in random order. A black light illuminates the numbers in five colors. The task of the subject is to locate the numbers in order and name their colors. Most people locate the digits in 10 to 20 seconds. But occasionally, it takes someone more than a minute to find the number next in sequence. People who are especially slow or inaccurate in locating the numbers are presumably those who are most likely to suffer from attention failures.

Block and his colleagues have used results of the ADM test to predict industrial inefficiency and on-the-job accident rates. The ADM offers a 26 percent improvement over chance in predicting a person's work performance and a 37 percent improvement in predicting whether a person would have few or many accidents. The ADM also has possibilities for detecting neurological damage, epilepsy, depression and perhaps for distinguishing between psychological and physiological mental disorders.

Kojak: A stimulating experience

Removing violent content from TV programming will result in some drop in violent behavior, says the Surgeon General's report on television and children. Part of the reasoning behind that statement has to do with the fact that TV violence tends to legitimize and teach violence as a solution to problems. But even if all violence were removed from television, it might not be possible to completely eliminate the medium's effect of arousing potentially aggressive behavior in viewers. Research conducted by James H. Watt Jr. of the University of Connecticut at Storrs suggests that the medium itself, its form and production techniques, can produce the type of stimulation that sometimes leads to aggression.

The techniques Watt mentions include such things as rapid-fire editing with short scenes following in quick succession, rapid changes of camera angle and even complex shots. "In all these things," he explains, "the viewer has to do mental work to figure out what is going on, and mental work has the same stimulative effect as physical work."

In an experimental setup, Watt showed an episode of "Kojak" to 41 students individually. While they watched, physiological components of arousal (pulse rate and skin conductivity) were measured. The results suggest that format, as well as specific violent content, does produce arousal. The study is not definitive, Watt cautions, because the sample was limited and because other factors (sexual attractiveness of actors and actresses, daydreaming on the part of the subjects, etc.) could have caused the arousal. But the point is that television can be arousing or stimulating, even without enactment of violent acts. The arousal, depending on the environmental situation, may then lead to aggressive behavior. "But it might also stimulate you to get up and do something good," says Watt. A program like "Sesame Street," he notes, uses production techniques to stimulate viewers to learn.