

Fine Motor Skills Show Baby's Intelligence

➤ WHEN an eight-month-old baby delights his mother by pulling up and stepping, it is no indication of his future intelligence.

An Oregon psychologist, Dr. John Kangas, told SCIENCE SERVICE that his follow-up study of more than 500 babies showed such "gross" motor skills to be the least accurate in predicting what their intelligence quotient scores will be at age four.

Dr. Kangas said the babies who could perform "fine" motor skills such as putting their thumbs and forefingers together to pick up a small cube or raking a small sugar pill off a table showed higher intelligence later on.

At age four, the girls did better than boys on IQ tests, and Dr. Kangas hazarded a guess that this might be because the children were mainly from lower socio-economic groups.

"Boys are allowed to be more boisterous than girls in these groups," he said. "The female superiority may disappear when the children reach the severe testing of school experience."

The study was done in collaboration with Barbara Goffeney and Dr. Bruce Butler at a county hospital clinic. Studies also were made of the intelligence of 243 mothers, but the tests were only 10 minutes long and were not of great value.

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Replication of DNA In Bacteria Reported

➤ RECENT WORK with the deoxyribonucleic acid (DNA) polymerase, using synthetic polynucleotides has shown that this enzyme can amplify nucleotide chain length 10 fold without making a mistake in the nucleotide sequence. Dr. Karl G. Lark of the department of physics, Kansas State University, Manhattan, Kans., reported his study at the annual meeting of the American Chemical Society in Pittsburgh, Pa.

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Blood Test Predicts Effect of Cancer Drug

➤ WHETHER or not a cancer patient will respond to drugs has been shown by results of a blood test conducted on 190 cancer patients and on 57 persons without malignancy.

Response depends on enzyme behavior, particularly of the one called PHI, or phosphohexoseisomerase. There was a distinct difference between patients with PHI activity in different blood fractions.

A team of scientists at the Albert Einstein Medical Center and the Moss Rehabilitation Hospital, both in Philadelphia, developed the test, which simultaneously separates a half dozen or more enzymes in a single blood serum sample. Enzymes are catalysts that spark innumerable chemical reactions in body cells.

In some patients the greatest PHI activity was found largely in gamma globulin, a blood protein from which antibodies are made. In other patients measurable activity could be found in different blood proteins such as albumin and alpha globulin. It was these latter patients who usually responded to drug treatment.

Those with PHI activity almost exclusively in the gamma globulin fraction did not show a really good response to anticancer drugs. Any apparently good reaction was extremely brief, the researchers said.

As drug resistance developed in the once-responsive patients, the blood pattern changed accordingly.

The scientists now are trying to obtain PHI in pure form so they can determine what the enzyme does in the healthy and the diseased and why its activity shifts from one serum protein to another as drug resistance develops in cancer.

Patients with noncancerous diseases of the liver showed PHI activity in both fractions, but particularly in the albumin-alpha globulin area.

The American Cancer Society reported the results of this work by Drs. Seymour Winsten, Stanley Levick and Edwin Cohn.

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Nature Note

The 'Straight Wings'

➤ INSECTS of the order Orthoptera, meaning straight and winged, are so named because most members have longer straight front wings while the second pair of wings is pleated, like a folding fan. The latter are tucked in under the front wings when the insect is at rest.

Some of these insects are without wings. They may have been lost due to lack of use through the ages.


Although Orthoptera are considered the most primitive of the winged insects, some of them have quite specialized and odd shapes.

This insect is an ancient one, dating back some 280 million years, to before the Carboniferous Period. Fossil cockroaches have been found in coal dating from this period. The order includes such well-known pests as the migratory locusts that throughout history have swarmed in unbelievable numbers across Egypt, the Middle East and parts of North America, eating and destroying all crops in their path.

The strange, insect-eating praying mantis is a member of this order, as well as the harmless singing cricket. Here also are included the ugly antennae-swinging cockroaches, and camouflaged insects that simulate green leaves, sand or stones.

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