Earlier this year, a group headed by Malcolm G. Dunlop of the Medical Research Council's Human Genetics Unit in Edinburgh, Scotland, reported a less specific way to screen members of FAP-prone families. To assess the colon cancer risk of 41 volunteers from seven such families, these researchers looked for a set of six previously discovered "marker" genes thought to lie near the gene causing FAP. Their blood test, called a genetic linkage analysis, yielded accurate positive or negative results for more than two-thirds of the volunteers but was inconclusive for the remaining participants (SN: 2/16/91, p.103).

Dunlop calls the discovery and isolation of the APC gene "an amazing achievement," particularly considering the enormous size of the gene, which consists of more than 8,500 DNA nucleotides. But he cautions that developing a test to detect every possible cancer-causing mutation in such a gene will be "a logistical nightmare."

"There might be 100 different mutations in this gene that could cause cancer," Dunlop says. "It's not time to get rid of linkage studies yet."

Kinzler agrees, but adds that "it should be possible to find all of the mutations eventually." He says he expects that the gene's discovery will ultimately enable researchers to develop drugs that combat colorectal cancer by mimicking the effects of the normal gene, whose function so far remains unknown. — *C. Ezzell*

Security, temperament tip early coping

Psychologists generally hold that a preschool-aged child who greets a brief separation from his or her mother with a tantrum or by blocking the mother's exit exhibits clear signs of insecurity and overdependence. But a long-term study of 98 mother-child pairs indicates that such reactions sometimes reflect sound psychological growth among youngsters temperamentally inclined toward emotional distress.

Mothers of "temperamentally vulnerable" infants who respond to outbursts with immediate gestures of comfort — rather than ignoring or downplaying the squalls — may promote healthy expressions of negative feelings, such as sadness and anger, by age 3, assert psychologists Margaret Fish of Marshall University School of Medicine in Huntington, W. Va., and Jay Belsky of Pennsylvania State University in University Park.

From home observations and mothers' reports when infants reached 3 months old, Fish and Belsky rated 60 of the 98 youngsters as "more distress-prone." Mothers and babies visited Belsky's lab near the infants' first birthday; the researchers rated the security of each child's relationship with the mother based on responses to a series of brief separations, during which the child sat in a playroom with a female experimenter. At 3 years of age, children returned to the lab for a 23-minute separation from their mothers, followed by a 10-minute block-building task with the mother present.

The vast majority of tantrums that caused mothers to return before the end of the planned, 23-minute separation occurred among 3-year-olds with histories of both secure maternal relationships and emotional volatility, the investigators report in the just-released July AMERICAN JOURNAL OF ORTHOPSYCHIATRY. Moreover, these children displayed considerable comfort and motivation when subsequently confronted with the block task. In contrast, distress-prone children with insecure maternal links often tolerated the entire separation and expressed substantial anxiety, discomfort and withdrawal during the block task.

Temperamental but secure children feel confident they can satisfy their needs by expressing distress in appropriate situations, thus reaping the added benefit of improved performance on a challenging task, the researchers theorize. These youngsters' insecure counterparts may suppress distress responses and pay an emotional price later on, they add. — *B. Bower*

El Niño episode brews in the Pacific Ocean

After fooling several researchers and a few computers last year, Mother Nature has cooked up an El Niño warming in the Pacific Ocean. The climatic event started off slowly, but experts say it could intensify in the next few months, altering weather patterns around the globe.

"In the last three or four months, there's been a good trend toward an El Niño and probably at this point we'd have to say that at least a weak one is in progress," says Vernon Kousky of the National Weather Service's Climate Analysis Center in Camp Springs, Md.

The term El Niño refers to an abnormal warming of equatorial waters in the central and eastern Pacific Ocean. Changes in atmospheric pressure patterns accompany the warming, and the two phenomena can warp world weather for 12 months or more. El Niño events tend to dry out Australia and India while bringing rains to the west coast of South and Central America. They also suppress Atlantic hurricanes, says William M. Gray of Colorado State University in Fort Collins.

Several classic El Niño characteristics have developed in recent months, sparking the interest of meteorologists. Surface waters in the equatorial Pacific have warmed 1 to 1.5°C above normal in a broad belt stretching from 170°E to 5°W. Also, the normally strong easterly winds (blowing toward the west) have weakened, inhibiting the usual upwelling of cold water along the South American coast. Such changes prompted the Climate Analysis Center to issue advisories in mid-June and mid-July, announcing the beginning stages of an El Niño.

At present, though, several important El Niño features have yet to materialize. Thunderstorms and atmospheric convection have not moved from the west into the central Pacific and warm water has not appeared immediately along the west coast of South America. Kousky says the next few months should reveal whether the El Niño will intensify or not.

Despite its currently weak state, the warming may already have enough strength to affect distant weather. Partly because of the developing El Niño, Gray forecasts a lower-than-normal number of Atlantic hurricanes this year.

The appearance of the warm waters comes as welcome news to Stephen Zebiak and Mark A. Cane of the Lamont-Doherty Geological Observatory in Palisades, N.Y., whose computer model began predicting one year ago that an El Niño would occur around now. Zebiak and Cane have a model that mimics both ocean and atmospheric currents. Most researchers believe changes in the interaction between ocean and atmosphere drive the development of El Niños.

A statistics-based model at the Scripps Institution of Oceanography in La Jolla, Calif., also called for an event developing during the summer, says Tim P. Barnett. The Scripps model forecasted a weak El Niño, like the one currently in progress. But if the warming intensifies significantly, Barnett says he will have to call this forecast a bust. He plans to run another forecast using more recent weather data to see if the model predicts anything more substantial.

James J. O'Brien at Florida State University in Tallahassee says his dynamical-statistical model called for slightly warm conditions but did not forecast an El Niño this year.

Modelers agree that weak events are the most difficult to predict. Last year, the central Pacific warmed slightly and human forecasters at the Climate Analysis Center issued an advisory, alerting scientists to the beginning of a possible El Niño (SN: 3/3/90, p.135). O'Brien's model and a German one even predicted an El Niño episode for that year. But the warming trend reversed, leaving both human forecasters and those computer models out in the cold. — *R. Monastersky*