

BEHAVIOR

From our reporters at the meeting in Washington of the American Association for the Advancement of Science.

Type A's and heart disease

Some Type A personalities — hard-driving, competitive, impatient individuals — are believed to be prone to developing coronary heart disease. According to a study by City University of New York psychologist David C. Glass, the onset of heart disease in such people may be triggered by a specific set of circumstances.

In a series of experiments with types A and B (less driven, more relaxed) persons, Glass reports that a key factor in the "coronary-prone behavior pattern" lies in the way the Type A individual deals with "uncontrollable" environmental stresses.

Events such as the death of a close friend, loss of a job, demotion or a sudden financial setback threaten the person's sense of control. This is particularly devastating for Type A's because of their apparent need to control all of their environment, Glass says. "It may be, therefore, that the specific interaction of Pattern A and helplessness-inducing life events is a precursor to clinical coronary disease," the psychologist says. He suggests that preventive therapy might be aimed at altering the way such a person copes with life.

Prevention works in Florida

A great many behavioral studies tack onto their findings the recommendation that "preventive measures" be taken to sidestep such phenomena as adjustment and developmental problems in youngsters. Little is known so far on how well such programs work, if at all.

Now, a study of 210 north Florida families is examining the effects of Florida's Parent Education Program — an "early home intervention" program aimed at poverty level families. The strategy consists of weekly visits to the families' homes, from the time the child is born, by "paraprofessional parent educators" who guide parents in home learning activities for the youngsters.

In examining 150 experimental families from the program and 60 control families with similar backgrounds, researcher Ira Gordon reports that both mothers and children in the program have fared significantly better than those in the control families. The experimental mothers "were more aware of their child's development, emphasized language development, planned experiences outside the home and placed more emphasis on reading," says Gordon, dean of education at the University of North Carolina, which conducted the study.

Among the children themselves, just 7 percent of the youngsters in the program for at least two years needed to be placed in special education classes, compared with 30 percent of the children from the control group.

High-rise, low-rise get no rise in study

Behavioral scientists, architects and others have suggested that different types of housing may play significant roles in a family's emotional well-being, or stability. However, a study of 560 families in two residential clusters in Toronto, Canada, indicates that housing may have far less to do with family behavior than has been believed.

In contrast to the results of several previous surveys, researchers in the Toronto study report essentially no correlation between housing type — single family, duplex, high-rise, etc. — and factors such as physical health, school problems, family interaction and conflict.

"What is of critical importance... is that... dwelling type itself contributes little or nothing to the explanation of the quality of family life," conclude Patricia A. Klobus-Edwards and John N. Edwards of Virginia Polytechnic Institute and Alan Booth of the University of Nebraska.

Chew your cares away

A medicinal chewing gum based on coca, the plant that contains cocaine, could be a stimulant comparable to coffee, a remedy for gastrointestinal distress and a fast-acting antidepressant, according to Andrew Weil of Harvard University. Coca leaves, which contain 15 related drugs (including about 0.5 percent cocaine), are used by Indians in South America. Coca is legal in Peru and Bolivia and widely used, although illegal, in Colombia and Ecuador. Weil has determined that the leaves, which the Indians consider nutritive, are rich in calcium, iron, phosphorus, riboflavin and vitamins A and E. He also finds that the leaves are free of substantial pesticide residues. Weil imports coca leaves for study under permit from the Department of Justice. Other investigators are comparing coca's effects on animals with those of pure cocaine. Preliminary findings show that animals limit their own intake of coca, but not cocaine. Weil expects to apply to the Food and Drug Administration within a year for permission to supply coca to physicians for clinical tests. He believes abuse of coca leaves (or chewing gum) is unlikely because the dose of cocaine is small, enters the body slowly and requires considerable chewing. The other drugs in coca may also modify cocaine's effects. Weil reports seeing no toxic effects of coca in its users in South America.

Attention is a right-sided function

Patients acting like the stereotypic drunk — overactive and unable to concentrate — frequently are not intoxicated, but suffer from damage to the right side of the brain. Norman Geshwind and Marek-Marsel Mesulam of Harvard Medical School presented evidence that the complicated ability to pay attention is localized in the brain's right hemisphere.

In humans, lesions (usually caused by a blocked blood vessel) of the left side of the brain seldom cause severe, persistent loss of attention. However, lesions of the right hemisphere can lead either to general inattention or to particular inattention to stimuli on the left side. Geshwind hypothesizes that normally the right hemisphere scans both sides of space and applies criteria for shifting the focus of attention. If the attention-directing regions (the inferior parietal lobules) of the right hemisphere are destroyed, the left hemisphere eventually begins to monitor its own half of space (the right side), but not the other. In animals, damage to either hemisphere generally produces inattention to stimuli from the opposite side.

Best memory: Both word and picture

In mapping brain functions to one hemisphere or the other, researchers have looked for tasks involving only one type of processing. In more complex tasks, they expected the activities of intact systems to mask deficiencies from damage to others. Now Brenda Milner of Montreal Neurological Institute has examined an easy memory task that relies on activities of two systems, one in each hemisphere. She finds that neither system can adequately compensate for damage to the other. Subjects were shown twenty-five simple drawings that could be remembered both as words and as visual images. The subjects included patients whose temporal lobes had been partly destroyed as treatment for epilepsy. Damage to one temporal lobe had little effect on immediate recall of the pictures. But the next day, subjects with either right or left temporal damage showed what Milner calls "a whopping drop" in ability to remember the pictures. "I am impressed with the inefficiencies of one hemisphere by itself," Milner says. Milner also presented evidence that other memory tasks, one involving numbers and the other pointing to blocks on a table, rely on the left and right hippocampal regions.