

THE MIND



BODY LINK

Investigators are reporting increasingly tantalizing links between thoughts and emotions and physical disease. During the 1960's, for example, William A. Greene, a psychiatrist at the University of Rochester, studied the life history of three sets of twins. One twin out of each set had come down with leukemia. Greene found that each twin who had gotten leukemia had experienced a psychological upheaval right before. The other twins had not. So Greene concluded that psychological trauma might well be a precipitating factor in cancer, even stronger than genetic predisposition.

Clinicians also continue to be impressed by the influence of the psyche on susceptibility to physical disease. After Richard Nixon resigned as President in August 1974, a number of clots developed in his phlebitis-stricken leg. Many physicians, notably Lawrence E. Hinkle of Cornell Medical Center and Samuel Silverman of Harvard Medical School, are convinced that psychological stress related to the Watergate scandal may have triggered the clots.

For all the evidence linking the psyche with somatic diseases, however, there's a woeful shortage of data showing precisely how such diseases occur physiologically. As John W. Mason of the Walter Reed Army Institute of Research and a former president of the American Psychosomatic Society puts it: "There's no shortage of data relating disease to psychosocial factors. The shortage is in our knowledge of the mediating mechanisms." What's more, in view of the complex interactions between psyche and soma, it will probably be many years before scientists expose the physiological links between thoughts and emotions and physical diseases.

There are actually two kinds of evidence showing that one's thoughts and emotions have the ability to trigger somatic disease. One concerns stressful events, and their ability to trigger a welter of illnesses. The other concerns certain patterns of thoughts and emotions and their ability to trigger specific somatic diseases.

As for evidence linking stress to disease, it's plentiful and diverse. Sidney Cobb of Brown University, for example, has determined that air traffic controllers, who are under keen stress, have far greater frequency of high blood pressure, stomach ulcers and diabetes than do second-class licensees who are not under comparable stress. Cobb also studied auto workers laid off in Detroit and found that stomach

Although the psyche has been heavily implicated as the cause of various physical disorders, identifying the physiological links between the two is difficult

BY JOAN AREHART-TREICHEL

ulcers were common at the time of termination. Many other laid-off workers subsequently came down with cancer, arthritis, high blood pressure, alcoholism and gout.

Probably the best known link between psychological stress and somatic disease susceptibility has been made by Thomas H. Holmes of the University of Washington and Richard H. Rahe of the Naval Health Research Center in San Diego. Holmes and Rahe have found that stressful changes in one's lifestyle over a period of time can be used to predict susceptibility to disease. They have devised a 43-item stress checklist that people can use to see whether they are likely to come down with disease in the near future. Certain stresses of life, such as death of spouse, are weighted heavier than are lesser stresses, such as Christmas or minor violations of the law.

Evidence linking particular personality types to specific disease susceptibility is also compelling. Two San Francisco cardiologists, Meyer Friedman and Ray H. Rosenman, have spent 15 years associating the aggressive, time-urgent, competitive, highly successful person (Type A) with the occurrence of heart attacks, and the counterpart, the more relaxed, easygoing person (Type B) with the lack of them. As Friedman and Rosenman write in their book, *Type A Behavior and Your Heart*, "It is the Type A man's ceaseless striving, his everlasting struggle with time, that we believe so very frequently leads to his early demise from coronary heart disease."

Certain personality traits have been linked with cancer. An outstanding researcher in this area is Caroline Thomas of Johns Hopkins University School of Medicine. For close to 30 years Thomas has been following Johns Hopkins medical students as they graduate, become established professionally, mature and even die. She has found, like Friedman and Rosenman, that heart attack victims tend to be high-gear persons. Suicide vic-

tims were not close to their parents in childhood and even as young people had been especially susceptible to stress. And cancer victims are low-gear persons, seldom prey to outbursts of emotions. They have feelings of isolation and unhappiness dating back to childhood (SN: 9/20/75, p. 182).

The heart attack and cancer personalities have also been confirmed by other researchers, notably Claus and Marjorie Bahnson, a husband and wife psychology team at the Eastern Pennsylvania Psychiatric Institute. As Marjorie Bahnson sees it, "The heart attack personality feels that he is under greater stress than are other people, even where this is not true. The cancer personality may be under greater stress than other people, but he will say, 'Everything is fine.'"

Provocative links have also been made between personality types and rheumatoid arthritis, asthma, stomach ulcers and some other physical diseases. For instance, four out of five rheumatoid arthritis victims are women—and many of these women have been found to share certain personality traits. They often have unfulfilled ambitions because of feelings of inadequacy harking back to childhood. Because of these frustrations, they frequently funnel their need for recognition outside the home into being exceptional housekeepers and mothers. Like cancer, rheumatoid arthritis often sets in after a particularly traumatic experience.

Certainly there is ample evidence suggesting how thoughts and emotions might actually lead to these or other somatic diseases. Largely through the work of stress pioneer Hans Selye, emotions have been found to act via the hypothalamus and pituitary gland on hormones of the adrenal glands. Other hormones, notably the hormones released by the pituitary, are also responsive to psychological stress. Edward J. Sachar of Albert Einstein College of Medicine reported in the July HOSPITAL PRACTICE. The hypothalamus is also known to link up with the autonomic nervous system. So it's quite possible that thoughts and emotions initiate disease via these nerve and hormonal pathways.

The psyche is also being linked to the immune system, the body's major barrier to disease. Selye has found that psychological stress can damage the thymus, a major gland of the immune system. Marvin Stein of the Mount Sinai School of Medicine in New York City has linked the hypothalamus to the immune system

(SN: 2/1/75, p. 68). The Bahnsons, in a pilot clinical study, have found a strong correlation between depression and lowered immune competence.

What's more, physiological correlations have been made between the psyche and specific somatic diseases. According to Neal Miller, a psychologist at Rocke-

has found that anxious mice came down with cancer; mice protected from anxiety did not (SN: 9/20/75, p. 182).

Nonetheless, tough questions still need to be answered. How might the same stress levels lead to disease in one person but not in another? How might persons with similar personalities end up with dif-

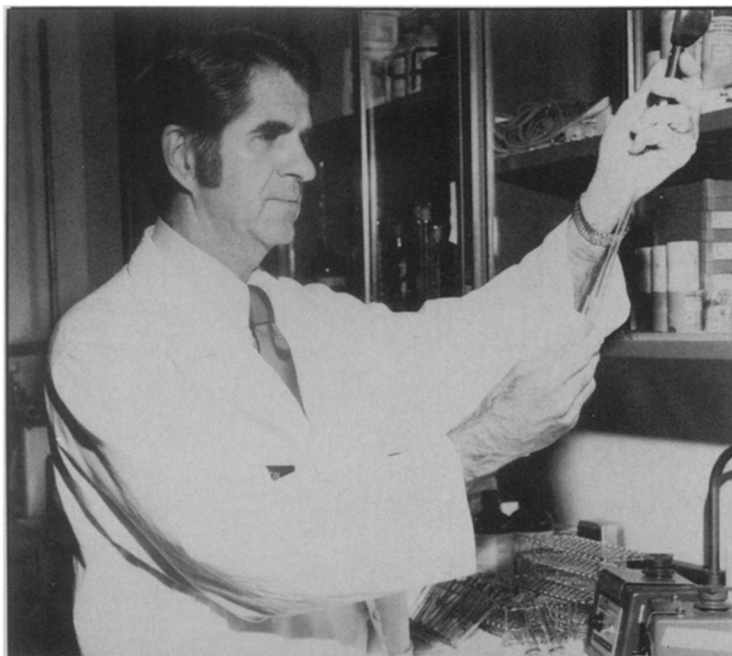
to lead to disease than positive ones?

In the absence of firm evidence, investigators disagree. In fact, in his book *Stress Without Distress*, Selye gives conflicting answers. In one place he writes, "We have seen that it is immaterial whether a stressor is pleasant or unpleasant; its stressor effect depends merely on the intensity of the demand made upon the adaptive capacity of the body." Yet in another place he writes, "Mental tensions, frustrations, insecurity and aimlessness are among the most damaging stressors, and psychosomatic studies have shown how often they cause migraine headaches, peptic ulcers, heart attacks, hypertension. . . ."

The problem in proving that the psyche can cause somatic diseases is essentially this: Scientists have only a primitive notion of how thoughts and emotions are formed in the brain, and although the actions of the body are better known, their interactions with the brain and with each other have been only superficially explored.

Mason puts the matter crisply: "In our attempts to go beyond the age-old clinical observations that there is a relationship between psychological factors and disease and to get into the bodily mechanisms, we are still only scratching the surface. True, we have more sophisticated techniques than ever before, but the problem is enormously complicated and requires revolutionary innovations in research strategy. You can't take one or two hormones and study them and come up with an answer. You have to study the many interdependent hormones, perhaps eventually 15 or 20, at once. And that kind of industrial research approach is alien to the academic atmosphere. For example, I find it difficult to maintain reasonably authoritative knowledge of two or three hormones, yet I'm trying to measure ten. What is really needed are four or five additional co-workers who can each take over part of the labor, each being an authority on several hormones. Then we could cover everything at a high level of professional expertise. In other words, one major obstacle in this field is the need for new organizational approaches to developing cooperative research on a much larger scale.

"If asked where the forefront of science is at the moment," he continues, "most people would reply, at the molecular level. Certainly the analytical approach remains an important frontier. But you have the enormous question that is unique to biology compared to the physical sciences: How does it all work together? How is it all coordinated? It is the integrative approach that we're going to have to develop if we want to really understand how thoughts and emotions can lead to disease." □



Sgt. Arnold W. Kalmanson, U.S. Army

*Mason:
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mones need
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Arehart-Treichel

feller University and a pioneer in the study of the autonomic nervous system, "There is considerable clinical evidence that people under stress conditions, like combat, have stomach lesions. This is backed up by experimental evidence that . . . subjecting animals to stress will cause stomach lesions." Vernon Riley of the Northwest Research Foundation in Seattle

ferent diseases? Surely other factors than personality must also enter the picture, such as age, weight, sex, genetic predisposition, adverse environmental factors. And what is really more critical in the development of disease: the number of turbulent thoughts and emotions, or their content? In other words, are negative thoughts, emotions and events more likely