

Jan. 15, 1969

NEWS RELEASE

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL AT DALLAS



FRANK CHAPPELL *Director of Medical Information*

BOB FENLEY *Science News Editor*

DALLAS -- Dr. Marvin D. Siperstein, of The University of Texas Southwestern Medical School at Dallas, has been named a 1969 recipient of one of medicine's most prominent honors, the Modern Medicine Distinguished Achievement Award.

Announcement of Dr. Siperstein's selection, with nine other physicians and medical educators, appears in the Jan. 13, 1969 issue of MODERN MEDICINE, a national medical journal which has sponsored the awards since 1934.

Dr. Siperstein, Professor of Internal Medicine at Southwestern, is cited for his extensive diabetes and cancer research. A native of Minneapolis, he received his B.S. degree at the University of Minnesota in 1946, his M.D. at Minnesota in 1948, and a Ph.D. in Physiology at the University of California in 1953.

-more-

first add siperstein

Before moving to Dallas, Dr. Siperstein served a residency in internal medicine at Massachusetts General Hospital, Boston. He spent two years at the National Institutes of Health in Bethesda, Md. Dr. Siperstein is a member of the American Diabetes Association, from which he received the Lilly Award in 1959; the Central Society for Clinical Research, American Society for Clinical Investigation, Association of American Physicians, Society of Biological Chemistry, Society for Experimental Biology, Biochemical Society, and American Federation for Clinical Research.

In announcing Dr. Siperstein's selection for the award, MODERN MEDICINE said: "'One good reason for doing research is simply that it's fun,' says Dr. Marvin D. Siperstein. And what is often fun for him has resulted in findings which are having a significant impact on cancer and diabetes investigations.

"Dr. Siperstein's main interest is in the basic relationship between cell cholesterologenesis control and cancer, an outgrowth of earlier studies into cholesterol synthesis in atherosclerosis. In those early studies he showed that the cholesterol synthetic sequence in liver is controlled by a feedback system in the cell microsome. This was the first demonstration of such a feedback system in higher animals. The feedback mechanisms controlling the sequence of reactions was found to act on the first unique reaction in the cholesterologenesis chain--the synthesis of mevalonic acid. This latter finding has turned out to be a general rule in synthetic sequences with feedback mechanisms.

second add siperstein

"Then, prompted by other workers who had suggested that a specific type of feedback control might be involved in cell growth, Dr. Siperstein and his colleagues decided to look at cholesterol feedback regulation in cancer. They discovered that various hepatomas are all devoid of feedback control and as a result make an excess of mevalonic acid. 'This finding represents the first example of a consistent loss of feedback control in a cancer cell; incidentally, these observations indicate how readily a study that begins in the field of atherosclerosis research can end up as a study of cancer.' More recently, Dr. Siperstein's group has found that leukemia cells also have a feed back defect in cholesterol synthesis, and the investigators think that the abnormality may arise in the precancerous stage.

"Diabetes has long been another interest of Dr. Siperstein, and in 1959 he received the Lilly Award from the American Diabetes Association for discovering how fatty acid synthesis is controlled in diabetes. About four years ago, Dr. Siperstein began investigating the blood vessel deterioration associated with diabetes, because there was no solid evidence to indicate whether some, most, or all diabetics have capillary basement membrane changes which were believed to underlie diabetic microangiopathy. Now, based on electron microscopy studies of muscle biopsies, he believes that diabetics almost always have capillary basement membrane thickening by the time that the diabetes is first detected.

-more-

third add siperstein

"These lesions seem more specific in muscles than in the kidney and appear to be independent of the patient's age and weight, of the severity and duration of disease, and of the degree of control. The basement membrane thickening of the capillaries seems to occur before carbohydrate disturbances appear; moreover, the presence of high blood sugar without diabetes doesn't produce this lesion.

"Basement membrane thickening therefore appears to be a very early, and perhaps a primary, lesion in diabetes mellitus. It may be speculated that the cause is probably in the cell deoxyribonucleic acid responsible for laying down the capillary membrane, but in any event many diabetes investigators are redirecting their thinking, and basement membrane chemistry has become a very active field, explains Dr. Siperstein.

"The events which ultimately led Dr. Siperstein into lipid and diabetes research began when he took an internship mainly in surgery at the University of Chicago Clinics in 1949 after receiving his M.D. degree from the University of Minnesota. 'Dr. Lester Dragstedt, Chairman of Surgery, knew I wanted more training in investigative techniques, so he suggested I go to work with Dr. I. L. Chaikoff at the University of California in Berkeley. Dr. Chaikoff was doing exciting work with C¹⁴-labeled cholesterol, and this is where my interest in cholesterol synthesis started.'

-more-

fourth add siperstein

"After receiving a Ph.D. in physiology from the University of California in 1953, Dr. Siperstein worked with Dr. Bernard Brodie in sterol pharmacology at the National Institutes of Health for two years. 'American medical research and education has been remade for the better through the Public Health Service,' maintains Dr. Siperstein, and he thinks the NIH has not received enough credit for its wisdom and flexibility in continuing to support investigators when their research takes them from one area to another. He is also disturbed that the exciting trend for the last fifteen years in physician training and research is slowing down at a time when these efforts should be expanding.

"In 1955, Dr. Siperstein served a residency in internal medicine at Massachusetts General Hospital in Boston and then moved to the University of Texas Southwestern Medical School at Dallas because he 'felt this department of medicine offered the best environment for strong clinical research combined with the best in patient care.'"

January 15, 1969

##