

Norbert W. Tietz: The Father of Modern Clinical Chemistry

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Norbert W. Tietz (1926 – 2018)

On May 22nd 2018, Dr Norbert W. Tietz a towering personality and authority on clinical chemistry died in Atlanta, Georgia, USA at the age of 91. His demise marks the end of a remarkable professional career with seminal contributions as an educator, scientist, mentor and author in the areas of Clinical Chemistry and Laboratory Medicine. Born in Stettin, Germany in 1926, one of seven children, Dr Tietz received the degree of Doctor of Natural Sciences in 1950 from the Technical University in Stuttgart, Germany and was a research fellow from 1951 to 1954 at the University of Munich, working on the pathogenesis of atherosclerosis and related aspects of lipid metabolism. The aftermath of the World War II saw him face several hardships as a prisoner of war and refugee which forced him to immigrate to the United States in 1954 seeking for better opportunities. The travails are well documented in his autobiography, *My Life: From Refugee to Teacher & Scientist- Living the American Dream* (AACC Press 2010) which he dedicated to his Family, Colleagues, and Students.

In the same year Dr Tietz joined as a Research Fellow in Rockford Memorial Hospital, Illinois where he met noted clinical chemist Dr Samuel Natelson, an authority in developing newer laboratory techniques with forty nine patents to his credit. This association was a turning point in his professional career and developed in him a keen interest to pursue a career in clinical chemistry. It was during this period that saw the remarkable transformation of the clinical lab with the introduction of advanced technologies such as UV spectrophotometers, blood gas analyzers, flame photometers, electronic cell counters and automated blood chemistry analyzers. From an earlier passive role the clinical chemistry laboratory services started to emerge as an integral and vital component of medical care services. The utility of laboratory testing increased dramatically both in terms of the number and array of tests and also the precision with which they were being performed. Following a postdoctoral fellowship at the University of Chicago (1955-1956), he headed the Clinical Chemistry Laboratories at Reid Memorial Hospital, Richmond (1956-1959), and was Director of Clinical Chemistry, Mount Sinai Hospital, Chicago (1959-1976) for seventeen years. During this tenure he served as Professor of Clinical Chemistry and Biochemistry at Chicago Medical School and Rush Medical College. From 1976 to 1996 he was Professor of Pathology and Director of Clinical Chemistry at the University of Kentucky. In 1994 he served as a Visiting Professor (on sabbatical leave) in the Department of Pathology, University of California San Diego.

Dr. Tietz was a highly respected and revered teacher who took great efforts to highlight the importance of Clinical Chemistry in diagnosis and prognosis of diseases and its critical link to the practice of medicine. In the late 1960s he is credited to have started the first M.S degree and successive Ph.D. programs in Clinical Chemistry in the United States. The first International Conference on Clinical Enzymology (1972) and International Symposium on Clinical Enzymology (1976) was designed, organized and directed by him. It served as a global platform for scientists and experts to share their views on the topic and promote national and international efforts to standardize methods of enzyme assays and their reference ranges. He has published about 135 scientific articles on different aspects of clinical chemistry such as laboratory techniques, clinical enzymology, electrolyte analysis,

hydrogen ion homeostasis, and different organ function tests. As a gifted speaker and authority on the subject he has lectured in 18 countries, including the USSR, United Kingdom, The Peoples' Republic of China, Australia, New Zealand, and Singapore.

Among his many professional achievements the textbooks which he has written and edited are his greatest contributions to the field of clinical chemistry and allied sciences. Fundamentals of Clinical Chemistry which he wrote and first published in 1969, now in its eighth edition was the first modern textbook in clinical chemistry that linked and integrated the results of the laboratory, with basic medical subjects and finally its application to medical practice. The relationship of clinical chemistry with physiology, pathology and medicine is explained in a very lucid manner which is very informative to both the person performing the tests and the physician who treat the patient. Textbook of Clinical Chemistry was the next book which he edited and was published two years later. It is now in the sixth edition and is often referred to as the "Bible" of Clinical Chemistry and continues to be the standard reference textbook in the subject published in multiple languages. According to

Dr Nader Rifai, the present Chief Editor of the newly renamed Tietz Textbook of Clinical Chemistry and Molecular Diagnostics, "Dr Tietz showed a keen interest and encouragement when he proposed to upgrade it from a book to a primary cloud-based platform to increase its accessibility to users via the internet". Dr Tietz also edited the Clinical Guide to laboratory tests, a handbook which served as a quick reference guide for use by practicing doctors, medical interns and students. He also served as editor for Clinical Chemistry sections of the Dictionary and Encyclopaedia of Laboratory Medicine and Technology. In his memoirs

Dr David N. Bailey, a colleague and personal friend of Dr Tietz and now Distinguished Professor of Pathology Emeritus, University of California, San Diego narrated an interesting incident which sheds light into the popularity of Dr Tietz as a dedicated teacher. 'On his sabbatical leave time in the Department of Pathology he taught the second year medical students topics in laboratory medicine, which focused on Clinical Chemistry. The medical students so revered him that, at the end of the course one year they presented him with a cake inscribed with "Thanks, Dr Tietz. You were well above the reference range!"

He has been conferred with several honors and awards including the Alwin Dublin Memorial Award, American Association of Clinical Chemistry Award for Outstanding Contributors to Clinical Chemistry and the Henry Wishinsky Distinguished International Services Award. In 1977 he served as President of American Association for Clinical Chemistry.

Dr Tietz is survived by his wife Gertrud and their children Margaret, Kurt, Annette, and Michael. His death is an irreplaceable loss to the entire academic fraternity especially those directly involved with the subject of Clinical Chemistry. As the Father of Modern Clinical Chemistry his contributions shall always remain within the reference range of our thoughts.

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