



In Memoriam for Gerald Berenson

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i3C Research Group

Gerald Berenson was born in 1922 in Bogalusa, Louisiana, the town that was at the centre of his ground-breaking research into the relationship of risk factors in children to adult CVD.

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While Gerald's mind roamed freely over the scientific fields he was investigating, his body remained firmly based in Louisiana and Bogalusa for most of his life.

He studied science and then completed a medical degree at Tulane University in New Orleans in 1945, after which he served as a Navy doctor from 1945 to 1948. He held academic positions at Louisiana State University School of Medicine from 1954 to 1991, and in 1992, he became chief of cardiology and then professor and director of the Tulane University Heart & Vascular Institute which he continued until his death.

Gerald's initial research was largely in the field of clinical biochemistry, particularly in relation to mucopolysaccharides and lipoproteins, and his insights from this field of investigation continued to influence him throughout his career. His interest in the evolution of CVD in childhood, which became his preoccupation, was stimulated by a proximity to and acquaintance with Louisiana-based researcher Henry McGill and colleagues, who in the 1960s provided the first evidence that atherosclerotic lesions could be found in the arteries of children. These findings inspired his curiosity about how the presence in childhood of the known coronary risk factors (hypercholesterolemia, hypertension, and related obesity, as well as cigarette smoking) might influence the emergence of atherosclerotic vascular disease.

In the early 1970s he successfully applied for funding from the NIH and became director of the first National Heart Lung and Blood Institute's National Research and Demonstration Center-Arteriosclerosis. To obtain evidence on the level of coronary risk factors and how they developed throughout childhood and adolescence, he initiated the Bogalusa Heart Study (BHS) cohort, recruiting children from his hometown, where he maintained a farm and bred cattle over a large part of his life. The BHS commenced in 1972, almost simultaneously with the other landmark child CVD cohort, the Muscatine Study, initiated in 1970 by Ronald Lauer, a paediatric cardiologist at the University of Iowa. Gerald's team recruited more than 12,000 children, from ages 3–18, over a period of more than a decade, and began the process of following them. He led the BHS for over forty years, during which time he and his team provided fundamental insights into the development of risk factors for CVD and metabolic disease, and emphasised the important influence of obesity on high levels of cholesterol, blood pressure, and insulin resistance¹.

Throughout his lifelong involvement with the BHS investigating the link between childhood and adult CVD he demonstrated a continuing commitment to thinking outside the square and seemed to relish the ensuing battles with the scientific establishment. One example was his view, published in 1983², that children with higher than normal levels of blood pressure should be given medication by their clinician. Although many clinicians now would think this at least worth contemplating, in the mid-1980s this was unacceptable to most in the field, and he was widely criticised. It did not stop him continuing to vigorously advocate his view.

Gerald became a champion of community action through schools to address the underlying factors that encouraged the development of obesity and related elevated levels of other CVD risk factors in children. Programs to encourage healthier diets and physical activity, and non-

smoking were central to this; however, they possibly had less of a lasting impact than his efforts to understand the relationship across the life course between these risk factors and coronary heart disease.

In 1998, he published his most important contribution to the field, showing that among youth who died at average age 19.6 years, there was a direct association between the degree of atherosclerosis in their coronary arteries and ante-mortem levels of CV risk factors, including BMI, lipids and BP. Those who had three or four risk factors had approximately ten times the risk of developing coronary artery plaques when compared to those who had none.

He became a founding member in 2002 of the collaboration that was to become the International Child Cardiovascular Cohort Consortium whose goal was to follow his and other similar cohorts for the occurrence of adult CVD, thus completing the task he had embarked on with his New Orleans-based colleagues half a century before.

And through all this Gerald will also be remembered as a great host who loved to introduce visitors to the intricacies of New Orleans life and culture. A lunch at Galatoires on Bourbon Street in the French Quarter was not to be missed. If you were lucky, your stay might even extend to a visit to rural Louisiana and Bogalusa. All who worked with him will remember his towering contributions to this important field of CVD research.

Gerald is survived by his wife Joan, with whom he shared so much, and four children.

References

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Figure 1.
Gerald Berenson