In memoriam: Dr Richard J. Deckelbaum (1942–2024)

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Dr Richard J. Deckelbaum, a leader in lipid and lipoprotein research, pediatric gastroenterology, nutrition, and global health, passed away on October 2, 2024 after a brief illness. Richard was born in Montreal Canada and received his medical degree from McGill University and completed his residency in pediatrics at the Montreal Children's Hospital in 1968. It was at this time he met his future wife, Kaya Rosenberg and the two moved to her home-country of Israel where he took a position as a pediatrician at Hadassah Hospital. In 1969, they spent a year in Zambia, where Richard worked as a Flying Doctor and learned how local cultures affected medical care, an experience that impacted significantly his approach to global health initiatives.

Upon returning to Jerusalem Richard helped open the first children's hospital on the West Bank, in Ramallah. He worked closely with Israeli and Palestinian physicians to coordinate medical services, bring in supplies, and establish systems and clinical protocols. His interest in improving health care to both Israelis and Palestinians never wavered.

After a few more years at Hadassah, Richard realized he needed more training to become an academic physician-scientist. In 1974, he became a postdoctoral GI fellow in the Boston University laboratory of Donald Small, one of the leading investigators in the biophysics of lipids and lipoproteins. As a postdoctoral fellow, Richard, working alongside another postdoctoral GI fellow, Alan Tall, showed that the cholesteryl esters in LDL particles undergo a remarkable transition from a liquid crystalline state to a liquid state at temperatures just below body temperature. This work established that the LDL structure contains a lipid droplet core that undergoes a melting phase change close to body temperature. He also showed that the phase transition temperature was lowered as the content of triglyceride in LDL was increased. Richard once joked that he became "the world's leading and only pediatric X-ray diffractionist".

Richard moved back to Hadassah Hospital in 1976, joining the pediatric GI unit. With Shlomo Eisenberg, he showed that incubation of LDL with triglyceride rich lipoproteins in the presence of the 1.21 g/ml bottom fraction containing lipid exchange proteins resulted in triglyceride enrichment of LDL. Lipoprotein lipase-mediated lipolysis of that triglyceride led to the formation of smaller LDL particles. He subsequently showed that the same process could cause conversion of HDL into smaller subspecies. These studies established the now widely accepted idea that lipid exchange followed by lipolysis can result in conversion of larger into smaller LDL and HDL subclasses. During this time, Richard continued to publish papers on pediatric lipid disorders, including studies with colleagues in Montreal on Chylomicron Retention Disease.

Richard was recruited to Columbia in 1986 by the chair of the Department of Pediatrics, Michael Katz, and went on to lead both the Division of Pediatric Gastroenterology (1986–2003) and the Institute of Human Nutrition (IHN) (1992–2020). The Institute had just

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lost its Director in 1991 when Dewitt Goodman died suddenly and Richard quickly set out to ensure its continued success. About the time he took over, there were eight students enrolled in the 1-year Masters of Nutrition Science program; in 2020, when he stepped down as Director, there were 85 student enrolled. Similarly, there were 6 PhD students in the program when Richard was named Director, and 30 when he stepped down.

During his years at Columbia, Richard continued his efforts to improve the health of children living in Africa and the Middle-East. In the 1990s Richard envisioned a medical school devoted to teaching Global Health and Cross-Cultural Medicine at the Ben Gurion University (BGU) in Beer Sheva, Israel. Richard convinced BGU and P&S to collaborate in creating the Medical School for International Health (MSIH) in Beer Sheva. The program is based on a 4-years American-style medical school, with a special emphasis on global and cross-cultural aspects of medicine, including a 2-months, required clerkship in a developing country, where the students learn how to provide medicine in low-technology environments.

In 2010 Richard and James M. Ntambi, from the University of Wisconsin-Madison and Uganda, began a collaboration that led to the founding of the African Nutritional Sciences Research Consortium (ANSRC), which brings together academic and research institutions across the East and Central African region with the goal of building a PhD training program in basic laboratory research in Agriculture and Nutritional Biochemistry. The long-term hope was to translate basic research into treatment and prevention strategies for non-communicable diseases that would be shared with communities in Africa and across the World. ANSRC established a coordinating office at Columbia University's Global Center in Nairobi, Kenya.

While all of these 'extra-curricular activities were ongoing, Richard continued his basic and clinical research, focusing on the effects of lipid transfer proteins and lipoprotein lipase on the structure and composition of lipoproteins as well as global nutrition issues and childhood lipid disorders. From his arrival at Columbia in 1986 to just before he passed, he published nearly 250 papers. In the early 2000s he began to work on the effects of polyunsaturated fattty acids (PUFAs) on lipoprotein metabolism; this became a major focus of his subsequent research. With Tilla Worgall, he showed that PUFAs decreased nuclear-active SREBP1 by a non-transcriptional mechanism explaining how PUFAs lead to reduced triglyceride synthesis. More recently, Richard focused on the metabolism of intravenous lipid emulsions, particularly those composed of omega-3 fatty acids, examining their molecular mechanisms, anti-inflammatory properties, and benefits for cardiovascular and neurological health. He founded a company focused on developing novel intravenous omega-3 diglyceride emulsions aimed at blocking the detrimental effects of acute hypoxia-ischemia, such as in ischemic stroke and myocardial infarction. Hopefully this work will continue.

Richard Deckelbaum was a 'man for all seasons'. His innumerable friends and colleagues will remember him not only for his scientific and humanitarian accomplishments, but also his love of single malt whiskies and his ability to tell the longest, funniest, after dinner stories. He leaves behind his wife Kaya and their children Ariel, Dan, Michael, and Leona, along with grandchildren William, Katya, Noah, and Aria.