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DOI: <https://doi.org/10.1002/ejhf.498>

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ZORA URL: <https://doi.org/10.5167/uzh-134320>

Journal Article

Published Version

Originally published at:

Gilbert, Richard E; Ruschitzka, Frank (2016). Henry Krum, Pioneering Heart Failure Researcher. *European Journal of Heart Failure*, 18(2):125-126.

DOI: <https://doi.org/10.1002/ejhf.498>

Henry Krum, Pioneering Heart Failure Researcher

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6 March 1958 to 28 November 2015



Professor Henry Krum, a physician-scientist and world authority on heart failure, best known for his innovation and leadership in clinical trials, died on 28 November 2015 in Melbourne. He was 57. The cause of death was neuroendocrine cancer.

Krum was born in Melbourne, the son of Polish Jewish refugees who fled the devastations of Europe after the Second World War. While maintaining a life-long interest in journalism, Krum's love of science and medicine took prominence when he began studying medicine at Melbourne University in 1976. Following his training as a clinical pharmacologist and completing a PhD at the Austin Hospital, Krum undertook a 2-year post-doctoral fellowship at Columbia Presbyterian Medical Centre in New York under the tutelage of Milton Packer before returning to Melbourne to launch an independent academic career. Armed with new know-how on the conduct of large-scale clinical trials in heart failure, Krum, in a series of pivotal studies with international collaborators, began helping to engineer the about-face in medical practice that turned beta-blockers from contraindication to a fundamental tenet of evidence-based practice.

Krum embraced the clinical trial process. He found enormous satisfaction in being able to trump convention, myth, and wishful thinking with fact, cherishing the international camaraderie engendered by a common purpose of trying to improve the lot of those living with heart failure. On the international steering committees

of scores of clinical trials, it was hard to keep up with Krum's trajectory. Not a year went by without landmark publications in the top tier of medical journals, the awarding of PhDs to new trainees in heart failure research, continuing grant funding from the National Health and Medical Research Council, and the immense productivity of the Monash Centre of Cardiovascular Research and Education in Therapeutics that he founded and led. In 2014, he was credited by *The Lancet*, 'to have put Australia on the map with respect to clinical trials in cardiovascular disease, particularly in heart failure'. In August 2015, Krum was placed in Thomson Reuters Highly Cited Researcher list, recognizing him as one of the world's most influential scientific minds with exceptional impact in his subject field.

Refusing to be pigeon-holed as a purely clinical researcher, Krum remained deeply committed to the process of discovery medicine, maintaining his involvement in fundamental laboratory research and co-founding a successful biotechnology company. Reflecting the breadth of his understanding of the pathogenetic process, he viewed the cardiac-centred view of heart failure as incomplete, exploring, very much ahead of his time, its inter-relationship with diabetes and kidney disease, the implications of which are only now coming to be fully appreciated. For Krum, with his background in studying the role of autonomic dysfunction in blood pressure regulation, the implications of catheter-based renal denervation were immediately apparent as he led the first major, international proof-of-principle, safety and efficacy studies of this new technology.

Though widely known for his medical research, Krum was a man with diverse interests that included literature, film, sports, art, and jazz. As with medicine, he pursued everything he did with fervent passion. Seeing him stifle a yawn at work may have meant that his flight from abroad had arrived earlier the same day or that his slumber had been punctuated by a midnight teleconference with the USA. It could, however, just as easily have meant a 3:00 am soccer match, if his beloved Liverpool FC, 'The Reds', were playing.

Modest to the core, Krum downplayed his significant achievements, adopting a self-deprecating wit that would see him comparing his life with a Woody Allen film or Seinfeld episode.

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Above all, Krum was a family man who never let his prolific work life overshadow his commitment to his wife and two children.

In 2012, Krum was diagnosed with pancreatic neuroendocrine cancer. Given a truly dismal prognosis by his treating oncologist, Henry's medical friends, following his example of challenging prevailing norms, set about scouring the medical literature in search of new potential treatments. As luck would have it, a major study had just shown that the mTOR inhibitor, everolimus, significantly prolonged progression-free survival among patients with advanced disease. Though patients with high-grade tumours such as Krum were not included in the trial, other studies indicated that such malignancies continued to express mTOR abundantly. Accordingly,

Krum's medical friends reasoned that his cancer might also respond to the treatment. So, Krum enjoyed a 2-year reprieve, during which time he returned to business as usual; writing papers, speaking at international conferences, applying for grants, and continuing in his role as global PI and Executive Committee Chair of the 7000 patient ATMOSPHERE study of direct renin inhibition. It seemed that nothing could stop this remarkable man until things took a sharp turn for the worse in early 2015, when the cancer became rampant.

Henry is survived by his wife of 26 years, artist, Lauren Berkowitz, their two children, Joshua and Emily, and sister, Sharon, a New York-based writer.