

# David Barker

## (1938–2013)

Epidemiologist who traced roots of chronic disease to early life.

David Barker was one of the most influential clinical epidemiologists of our time. He challenged the idea that chronic disorders such as diabetes and cardiovascular disease are explained only by bad genes and unhealthy adult lifestyles. His 'Barker hypothesis' proposed that the fetal environment and early infant health permanently programme the body's metabolism and growth, and thus determine the pathologies of old age. Initially controversial, his ideas triggered an explosion of research worldwide into the relationship between early development and adult disease.

Barker died suddenly from a cerebral haemorrhage on 27 August, aged 75. Born in 1938, he was educated at Oundle School, UK. His biology teacher encouraged him to roam the countryside hunting for beetles, and gave him access to the labs to classify his finds. When Barker left school, he led a project on the Icelandic island of Grimsey to collect plant specimens for the Natural History Museum in London.

During his medical training at Guy's Hospital in London, he took a year out to complete a bachelor's degree in physical anthropology, comparative anatomy, embryology and mammalian biology. He studied under the eminent zoologist J. Z. Young, and published his first paper, on the effects of testosterone on bone density, in *Nature* in 1962.

In 1966, Barker completed his PhD thesis on prenatal influences and subnormal intelligence, a forerunner to his later work on fetal programming. With a Medical Research Council (MRC) grant, he worked in Uganda on *Mycobacterium ulcerans* infection (Buruli ulcer). When the country descended into crisis in the 1970s under President Idi Amin, Barker, fearing for his family's safety, fled through the night with his wife and four young children into neighbouring Kenya. By then, he had done enough research to link the transmission of Buruli ulcer to wounds caused by the razor-sharp reeds growing near the river Nile, proving that it was not an insect-borne disease.

In 1972, Barker joined the University of Southampton, UK, where he remained for the rest of his career. An inspiring teacher,

he set up an annual course on epidemiology for clinicians, with fellow epidemiologist Geoffrey Rose. The course remains the definitive introduction to the field for researchers. In 1984, Barker became director of the MRC Environmental Epidemiology Unit in Southampton.



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age. Collaborating with researchers from the Helsinki Birth Cohort study, which tracks the long-term health impacts of early growth, he linked patterns of childhood growth to these conditions. And with colleagues in India, he showed similar relationships in developing-world populations. His work also formed the basis for linking the until then separate worlds of fetal physiology and epidemiology, bringing together physiologists from Australia, New Zealand and Canada who were studying fetal development in animals. Ultimately, Barker published 500 research papers and 10 books, and had numerous honours to his name.

David never retired. After stepping down as director of the Southampton unit in 2003, he continued to work at what is now called the MRC Lifecourse Epidemiology Unit, and to contribute to the studies that he established — the Hertfordshire Cohort Study and the Southampton Women's Survey. He also helped to set up the Southampton Initiative for Health to find practical ways of improving the diets of low-income mothers in the United Kingdom. In his last few years, he turned his focus to the placenta as the channel of communication between mother and fetus, and spent several months a year working at the Oregon Health and Science University in Portland — a leading placental-research centre — and at Emory University in Atlanta, Georgia, working on the biology of human growth.

Of all his characteristics, I, like other colleagues, will most fondly remember David's humour; he was a brilliant raconteur and often sought as an after-dinner speaker. He was a private, thoughtful and caring man, for whom family life was central. After the death of his first wife, Angela, he married Jan in 1983. Their home housed four generations, and became a centre for scientific work, to which they welcomed visitors from around the world. ■

The unit's detailed mapping of mortality trends in England and Wales led to his observation that areas with the highest infant mortality in 1910 had the highest rate of cardiovascular deaths in the 1970s. With his lifelong research partner, Clive Osmond, Barker developed his hypothesis that an adverse environment in the womb, and during infancy, was causally linked to chronic-disease risk later in life.

He devoted the next three decades of his life to the pursuit of this idea. And through various and diverse collaborations, Barker made many significant advances. With colleagues at his MRC Unit and in Cambridge, he showed that people of lower weight at birth and in infancy were more prone to cardiovascular disease, hypertension and diabetes in middle

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