



Abraham ("Abe") Guz: a life devoted to breathing and breathlessness

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It is with great sadness that we inform you that Abe Guz passed away on April 11, 2014 at the age of 84. Abe Guz was Professor of Medicine at the Charing Cross Hospital Medical School in London, UK between 1973 and 1982, and subsequently became Professor and Head of the Department of Medicine of the joint Charing Cross and Westminster Medical School, University of London until September 1994. He will be remembered for his contribution to our understanding of breathing control and of breathlessness.

Abe Guz was born in 1929 in East London to Russian Jewish parents who came to England in the 1920s. In 1947, he attended Charing Cross Hospital Medical School where he was a brilliant student, winning the Gold Medal of the School and graduating with the highest honours in medicine and surgery. After serving in the army for 2 years as part of National Service as Chief Medical Officer in Germany, Abe returned to London as a senior house officer at the Hammersmith Hospital. Like many budding clinical scientists of the time, he shortly left for the USA to become a Research Fellow at Harvard University and then Senior Fellow at the Cardiovascular Research Institute (CVRI), University of California San Francisco. He trained under Julius Comroe whom he said taught him to "think" and whom he described as someone who had "the great facility of summarising what was not known". At the CVRI, he collaborated with Julien Hoffman, a paediatric cardiologist, to develop methods of measuring blood flow and cardiac output.

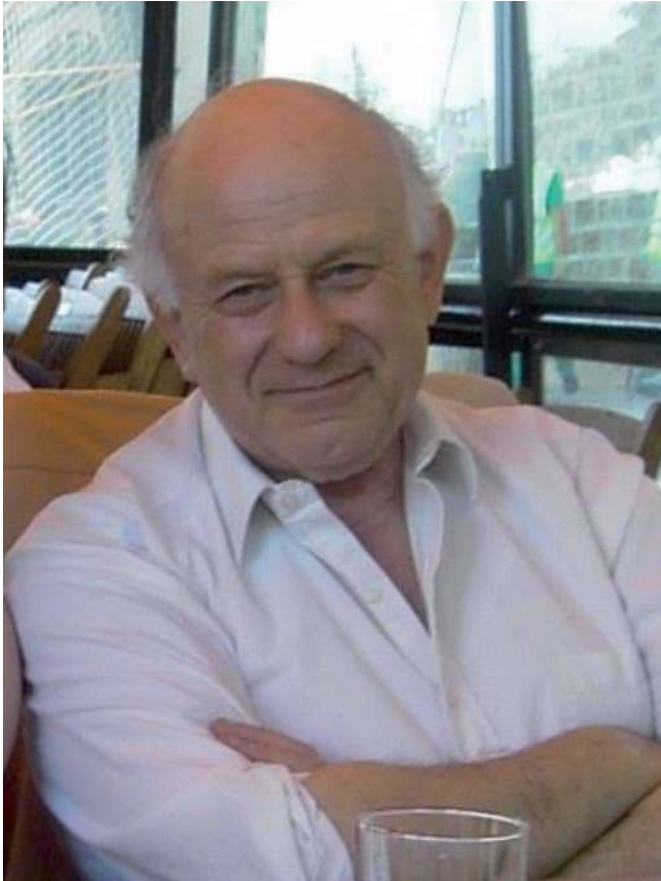
Abe returned to the UK in 1961, as Assistant Lecturer in the newly created Department of Medicine at Charing Cross Hospital under Professor Hugh de Wardener who was to become a famous nephrologist (he died in September 2013). With a Senior Lectureship funded by the British Heart Foundation, Abe recruited his first research colleagues, Mark Noble and Diana Trenchard, to study cardiac mechanisms and, later, the control of breathing and the genesis of the sensation of breathlessness. The latter area was to remain Abe's main passion for the rest of his life. His MD thesis, completed in 1967, was focused on the role of the vagus afferent nerves in the control of breathing and respiratory sensation in normal and dyspnoeic patients. Contrary to what was found in animals, Abe showed that under general anaesthesia and after atropine administration, local anaesthetic blockade of the vagus nerves did not affect breathing in the conscious or anaesthetised person [1]. Some of the studies were conducted in patients who underwent electrical stimulation and lignocaine blockade of their vagus nerves. Abe vividly and succinctly recalls the background to these invasive studies and his approach to the ethical issues before the days of ethics committees [2].

In 1973, with the opening of the new Charing Cross Hospital and Medical School in Fulham, West London, Abe started an academic unit of respiratory medicine in a fully-equipped respiratory service with wards, out-patient services, laboratories and offices co-situated on the fifth floor of the 15-storey building. This integrated service allowed free interactions between clinicians and researchers and was key to some of the later work. Abe continued studies on breathlessness in health and disease with studies of the genesis of exercise hyperpnoea [3], of functional brain mapping in breathing [4], of breathing control in heart-lung transplant patients [5], of the effect of local anaesthesia of the airways [6], and of exploring the patient descriptors of breathlessness and its measurement [7]. He also evaluated pharmaco- and psycho-therapeutic approaches to relieve the unpleasant sensation of dyspnoea [8, 9]. A friend of the late Dame Cicely Saunders who was a pioneer of the hospice movement, Abe was keen to study how best to palliate symptoms that

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Abe Guz 1929–2014.

caused distress at the end of life. In 1986, he founded the Breathlessness Research Charitable Trust in order to raise funds for research into breathlessness and under Abe's trusteeship, the charity was able to give grants to researchers throughout the UK and in the USA.

At Charing Cross, Abe was instrumental in setting up and using new techniques in other areas of respiratory research. The respiratory sleep laboratory established by Abe was one of the first and here he studied respiratory reflexes and disturbances in normal and abnormal sleep, which led to the documentation of the site of obstructive sleep apnoea [10]. He recognised the need to integrate disciplines in his department and, with Terry Tetley, established a lung cell biology group. As an early proponent of the fibre optic bronchoscope to retrieve lavage fluid for research purposes, for example after the subject had smoked a cigarette, they used this technique to investigate the protease–antiprotease imbalance hypothesis of emphysema [11]. On the clinical side, Abe was also one of the first to pioneer and evaluate the use of specialist respiratory nurses to work in the community to manage long-term respiratory patients [12]. These initiatives contributed to the growing international reputation of his department.

Abe formed numerous collaborations in Europe. Gila Benchetrit (Laboratoire PRETA-TIMC, Université Joseph Fourier, Grenoble) met Abe in 1976 in Pierre Dejours' lab in Strasbourg. They were both interested in individual breathing patterns, their origins and the implications of subtle changes. They regularly visited each other's laboratories, where, despite his busy schedule Abe always made time to share ideas with researchers of all ages, who were honoured by Abe's interest. Jorge Gallego (Research Director, Inserm, Paris) met Abe in the late 1980s. He recalls that despite Abe's track record as a worldwide leader in the field of control of breathing and dyspnoea, he would attend relatively small meetings that were far from mainstream, such as the International Symposium on Respiratory Psychophysiology. His open-minded, slightly nonconformist attitude, fostered collaboration with the French community of researchers involved in "personnalité ventilatoire", in the scientifically mysterious Ondine's syndrome, to better understand mechanisms of respiratory control. Gila and Jorge concur that Abe's involvement was invaluable and strongly encouraging.

Abe was appointed head of the Department of Medicine at Charing Cross in 1982, where he remained until his retirement and appointment as Emeritus Professor in 1994. Witnessing the amalgamation of Charing

Cross and the Westminster Medical Schools, Abe realised that undergraduate teaching would increasingly be delivered on multiple sites. He, therefore, obtained funding to install an audio-visual link between teaching facilities in half a dozen hospitals throughout West London. The "Open Rounds" transmitted interactively from the 10th floor lecture theatre at Charing Cross were extremely popular with medical students. This was later to become a key positive feature in uniting the newly-formed Imperial College School of Medicine.

Outside of Charing Cross, he was also involved with the Royal College of Physicians of London serving for a time as a Censor of the College. He was a founder member and officer of the Medical Research Society and was President of the British Association for Lung Research. He sat on the grants committees of the Medical Research Council and the Wellcome Trust.

Following his retirement he continued to be active, contributing to the graduate teaching programme in the Department of Physiology in Oxford while continuing his research interests on breathlessness. He was made a Fellow of the Imperial College School of Medicine in 2000, and was commonly seen in College on the Charing Cross Campus until recently.

There was never a dull moment in the company of Abe. "Inquisitiveness", "enthusiasm", "obsession" and "challenging" are the terms that immediately come to mind when describing an encounter with him, yet although this would seem daunting and sometimes frightening to any person at their first meeting with Abe, he had the ability to motivate and instil devotion and focus from those who worked around him. Abe is one of a generation of pioneering respiratory clinician scientists who will be sorely missed for his intellectual and scientific as well as clinical contribution.

He is survived by Nita, his wife of over 50 years, and their three daughters, to whom we offer our most sincere condolences.

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