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# Hein Wellens

**Henrick Joan Joost (Hein) Wellens**, M.D., (born 13 November 1935, The Hague) is a Dutch cardiologist who is considered one of the founding fathers of the cardiology subspecialty known as clinical cardiac electrophysiology. Clinical cardiac electrophysiology enables patients with cardiac arrhythmias to be subjected to catheter electrode mapping and stimulation studies. Paul Puech, first in Mexico and later in France; Benjamin Scherlag and Onkar Narula in the USA; and Dirk Durrer and Philippe Coumel in Europe were the field's pioneers in the 1950s and 1960s. The field's second wave of innovators used these techniques to unravel the mechanisms of tachycardia in humans and set the bases for their treatment. Among them, Hein Wellens in Europe and Kenneth Rosen, John Gallagher, and Mark Josephson in the USA had the greatest impact as researchers and teachers. Josephson is the author of the first and most successful textbook of clinical cardiac electrophysiology, now in its fourth edition.<sup>[1]</sup>

Wellens, known among European cardiologists as "the giant of Maastricht", has for many years been associated with the University of Limburg School of Medicine in Maastricht, Netherlands.<sup>[2]</sup> At his department of cardiology, many future clinical cardiac electrophysiologists trained from 1976 until his retirement in 2002.

## Career

As a pupil and collaborator of the late Professor Dirk Durrer in Amsterdam, Dr. Wellens was involved in the early developments in programmed electrical stimulation of the heart in patients with the Wolff-Parkinson-White syndrome. In these patients, cardiac arrhythmias it was shown for the very first time that were first shown to be possibly initiated and terminated by critically timed premature beats. In 1971, he reported on the use of programmed electrical stimulation of the heart in patients with atrial flutter, AV nodal tachycardia, and accessory atrioventricular connections. In 1972, he showed that the arrhythmia of patients with ventricular tachycardia could also reproducibly be initiated and terminated by timed premature stimuli. These investigations were the basis for the new surgical and pacing approaches to the treatment of cardiac arrhythmias that became known as "cardiac electrophysiology".<sup>[3]</sup> to be Wellens also demonstrated that the reproducible initiation and termination of arrhythmias by programmed electrical stimulation of the heart allowed the study of the effect of antiarrhythmic drugs on the mechanism of the arrhythmia. In 1977, he moved to the new University of Limburg in Maastricht, Netherlands, to develop academic cardiology there. Starting from scratch, he created an internationally known center for the study and treatment of cardiac arrhythmias.<sup>[3]</sup>

Dr. Wellens has published more than 600 manuscripts in peer-reviewed journals and more than 200 book chapters, and has written or edited 18 books on cardiology. More than 150 cardiologists from abroad have come to Maastricht for six months to two years for postgraduate training in cardiac electrophysiology. At present, Dr Wellens directs a large academic cardiology department with a staff of 20 cardiologists and a well-known cardiology training program. He is also an internationally known teacher and lecturer and member of many international cardiological societies.<sup>[3]</sup> For over 30 years, he has been coaching a high-yield "How to Approach Complex Arrhythmias" course for cardiologists<sup>[4]</sup> and EP fellows,<sup>[5]</sup> together with Mark Josephson.

In 1990 he became a member of the Royal Netherlands Academy of Arts and Sciences.<sup>[6]</sup>

## Biography

Biography: Hein J Wellens MD, Emeritus Professor of Cardiology, University of Maastricht, The Netherlands

Hein J. Wellens, MD was born November 13, 1935 in The Hague in the Netherlands. He studied medicine at the University of Leiden. Following two years of internal medicine he did three years of cardiology in the Wilhelmina Gasthuis Hospital of the University of Amsterdam under the guidance of Prof Dirk Durrer. In the late sixties, at the University Hospital of Amsterdam, he started to investigate patients with cardiac arrhythmias by placing catheters into the heart allowing the recording of cardiac activation at different sites. By connecting these catheters to a pacing device, he showed that it was possible not only to initiate and terminate the clinically occurring cardiac arrhythmias but also to localize the site of origin of the arrhythmia and to discover its mechanism. By using this approach, called programmed electrical stimulation of the heart, Dr. Wellens not only unravelled mechanisms and localization of arrhythmias in the Wolff-Parkinson-White syndrome, but also of the other types of supra ventricular tachycardias. In the early seventies, a major breakthrough came when he showed that programmed electrical stimulation of the heart could also be used to study the mechanism and localization of ventricular tachycardia, opening new ways for its treatment. In 1971 he published the first book on programmed stimulation of the heart in patients with tachycardias. In 1973 Dr. Wellens was appointed Professor of Cardiology at the University of Amsterdam. At that time it had become clear that this new approach allowed the investigation of the effect of drugs on the tachycardia mechanism and the development of new therapeutic strategies such as the termination of tachycardias by specially designed pacemakers, the surgical removal or isolation of the tachycardia substrate and ultimately cure from cardiac arrhythmias by catheter ablation. The work of Dr. Wellens has not only been the basis for the way arrhythmias are currently investigated and treated, but by carefully analyzing electrocardiographic recordings in relation to information from programmed stimulation of the heart, he opened new ways to use the electrocardiogram as a reliable (non-invasive) source to become informed about the site of origin and mechanism of a cardiac arrhythmia. Dr. Wellens left Amsterdam in 1977 to become Professor and Chairman of the Department of Cardiology at the Academic Hospital of the new Maastricht University. There he created his school of arrhythmology, educating in the period 1977-2001 more than 130 cardiologists from all over the world. Many of them, after returning to their home country, became internationally known leaders in cardiology. Dr. Wellens, who also directed from 1993 to 2003 the Interuniversity Cardiological Institute of the Netherlands (ICIN), an Institute of the Royal Netherlands Academy of Arts and Sciences, in which the Dutch research activities in cardiovascular research are combined at the national level, wrote or co-authored over 670 peer-reviewed articles, 254 chapters in books, and was author or (co) editor of 21 books on cardiology. In his scientific career Dr. Wellens made several important contributions that fundamentally changed the approach to investigate and treat cardiac disease. His teaching and writing skills allowed him to convince his colleagues worldwide to use these new approaches to the benefit of their patients.

## References

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