

Biography of Dr Daniel den Hoed

Daniel den Hoed (Gouda, 18 October 1899 – Rotterdam, 10 March 1950) was a Dutch physician and an important founder of radiotherapy in The Netherlands. From 1925 to 1940, he is head of the Department of Radiotherapy at the Netherlands Cancer Institute (NKI) in Amsterdam.

Daniel den Hoed grew up in Gouda where he completed his secondary school education at the local state HBS (higher state secondary school). After the HBS, he studied medicine at the University of Utrecht, and started his career as resident at the NKI in Amsterdam on 1 July 1922. Next to his clinical tasks, he developed a great interest in radiation treatment. The physical and technical aspects of this discipline also attracted him.

In 1924, Dr. K.C.A. Valken, head of the Department of Radiotherapy at the NKI, announces his decision to leave the hospital and the board of the NKI decides not to take on a physician from outside, but to release Daniel den Hoed from his position so that he can specialize in radiology. From 1 July 1924, in order to gain experience, he joins Professor Dr. S. Keijzer at the university hospital of Groningen and Professor Forsell in the cancer institute in Stockholm. As of 1 January 1925, he is appointed head of the Department of Radiotherapy in the NKI. With much energy he devotes himself to the irradiation of cancer, which was then a barely developed area of medicine.

Research.

Next to treating patients in the NKI, Den Hoed starts an ambitious research program in which he investigates characteristics of radiotherapy in the fields of medicine, physics and radiobiology with scientifically proven methods. He lays the foundation of effective and safe radiation therapy, and he takes part in the development of better treatment apparatus and methods. An example is the introduction in 1926 of improved radiation dosimetry based on the "röntgen" as unit of the ionisation in air. In a cooperation with the physicist Walch of the University of Amsterdam he constructs the first standard dosimeter in The Netherlands. On the basis of this standard instrument a national calibration service is founded in the NKI. Radiologists in the Netherlands turn to Den Hoed to have their irradiation units and dosimeters calibrated. After World War II this service is continued by a state owned organisation.

Doctorate.

In 1934 Den Hoed takes his PhD in medicine under the supervision of professor J. Ebbenhorst Tengbergen at the University of Amsterdam. The subject of his dissertation is "The characteristics of hard X-rays and gamma rays from radium" ("Over de werking van harde Röntgen en gamma-stralen van Radium"). In 1933 his research is awarded the golden Wertheim Salomonson prize by the Netherlands Society of Radiology (Nederlandse Vereeniging voor Electrotherapie en Röntgenologie).

He is recognized as the first therapeutic radiologist in The Netherlands that takes his PhD on research in radiation therapy. His work and his training of a next generation of radiation therapists has been of great importance for the development of modern radiotherapy in The Netherlands.

Collaboration with Philips.

In 1925, Den Hoed carries out X-ray technical research on the new Metalix X-ray tube of the Philips NatLab, prior to its release for commercial use. This X-ray tube is a revolutionary improvement on the primitive glass X-ray tubes which are in use up until then. In 1936, Den Hoed is one of the first to carry out radiobiological research into the therapeutic possibilities of neutron irradiation. He carries out measurements in the beam from a neutron generator in the physics laboratory of Philips in Eindhoven. In 1939, in the NKI, Den Hoed has at his disposal a unique one million volt X-ray machine from Philips.

Director of the Rotterdam Radiotherapy Institute.

In 1940, Den Hoed leaves his position at the NKI. He moves to the Rotterdam Radiotherapy Institute (Rotterdams Radiotherapeutisch Instituut, RRTI) and succeeds Dr. Lammers as Director of the RRTI on 1 July 1940. He marries radiologist S. Sytsema who was trained by him at the NKI. They have a son.

Together they lead the RRTI. After World War II, the Rotterdam Radiotherapy Institute develops into one of the leading European centres and an important training site. One of the physicians trained by Den Hoed in Rotterdam is Klaas Breur. When Den Hoed dies suddenly in 1950 as the result of a heart attack, Klaas Breur, together with Mrs Den Hoed-Sytsema, takes over the leadership of the RRTI. In 1964, Breur leaves for Amsterdam and becomes the first university professor in radiotherapy in The Netherlands. Besides he is head of the Radiotherapy Departments in the NKI and in the University Hospital, the Wilhemina Gasthuis, in Amsterdam.

In memoriam Daniel den Hoed

The sudden death of Daniel den Hoed at the age of 50 is a big blow to colleagues and co-workers. His enormous contribution to the development of radiation treatment and his research of radiobiological and physics-technical aspects of radiotherapy come to an end.

He made easy contact with patients and co-workers. In the words of W.F. Wassink in the obituary published in the Netherlands Medical Journal (Nederlands Tijdschrift voor Geneeskunde) 94.I.12 on 25 March, 1950: "... collaboration, through his characteristic friendliness and simplicity..., also through his amiable contact with personnel, was always harmonious.... What he meant to his patients as physician can be characterized by the title one of them once gave him: our kind doctor of the rays..."