
Start of Clinical Research with Hiroshima University on Photon-Counting CT



Canon Medical Systems Corporation (hereinafter "Canon Medical"; President and CEO: Toshio Takiguchi; headquarters: Otawara, Tochigi, Japan) and Hiroshima University (President: Mitsuo Ochi; location: Higashi-Hiroshima, Hiroshima, Japan) began clinical research, using a Canon photon-counting CT (PCCT) system (the company's third such system worldwide) with the aim of rapidly advancing its practical application. PCCT is expected to become the next generation of X-ray CT.



System with Prof. Kazuo Awai (fifth from left.)

Canon Medical entered into a basic agreement on joint clinical research with Hiroshima University on November 1, 2023, ^{*1} and clinical research began, led by Professor Kazuo Awai of the Department of Diagnostic Radiology at Hiroshima University Graduate School of Biomedical and Health Sciences.

In this research, we are exploring the clinical usefulness of data captured by PCCT, evaluating and optimizing various kinds of diagnostic information provided by PCCT, and determining imaging protocols, in order to maximize the functionality of PCCT from a basic level to clinical applications. To achieve this goal, we are promoting a wide range of research.

Hiroshima University and Canon Medical have already conducted joint research projects with Professor Awai on the development of advanced diagnostic imaging technologies, including image reconstruction technology that utilizes deep learning technology. Through this latest clinical research, we are aiming to take another step forward towards the practical application of PCCT.

A PCCT system is a diagnostic imaging system equipped with a next-generation detector (photon-counting detector)^{*2} capable of collecting data by identifying the energy of incident X-rays. Unlike conventional X-ray CT, PCCT can differentiate multiple material compositions and is expected to improve diagnostic accuracy by providing superior quantitation. In addition, with the higher resolution of PCCT, the detectability of lesions should be further improved at even lower exposure doses.

We will accelerate development of PCCT by feeding back the results of this clinical research into improvement of the system. Through the early implementation of PCCT, which brings together various technologies cultivated by Canon over the years, Canon Medical will aim for the No. 1

share in the global CT market and contribute to the further development of diagnostic imaging technology.

The latest information on our PCCT will be presented at the International Technical Exhibition of Medical Imaging 2024 (ITEM2024) to be held in Yokohama from April 12 to April 14, and at the 83rd Congress of the Japan Radiological Society and the 80th Congress of the Japanese Society of Radiological Technology, which are also to be held in Yokohama, from April 11 to April 14.

Source & Image Credit: [Canon Medical Systems](#)

Reference:

*1: <https://jp.medical.canon/News/PressRelease/Detail/142190-834>

*2: <https://jp.medical.canon/products/computed-tomography/pcct>

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