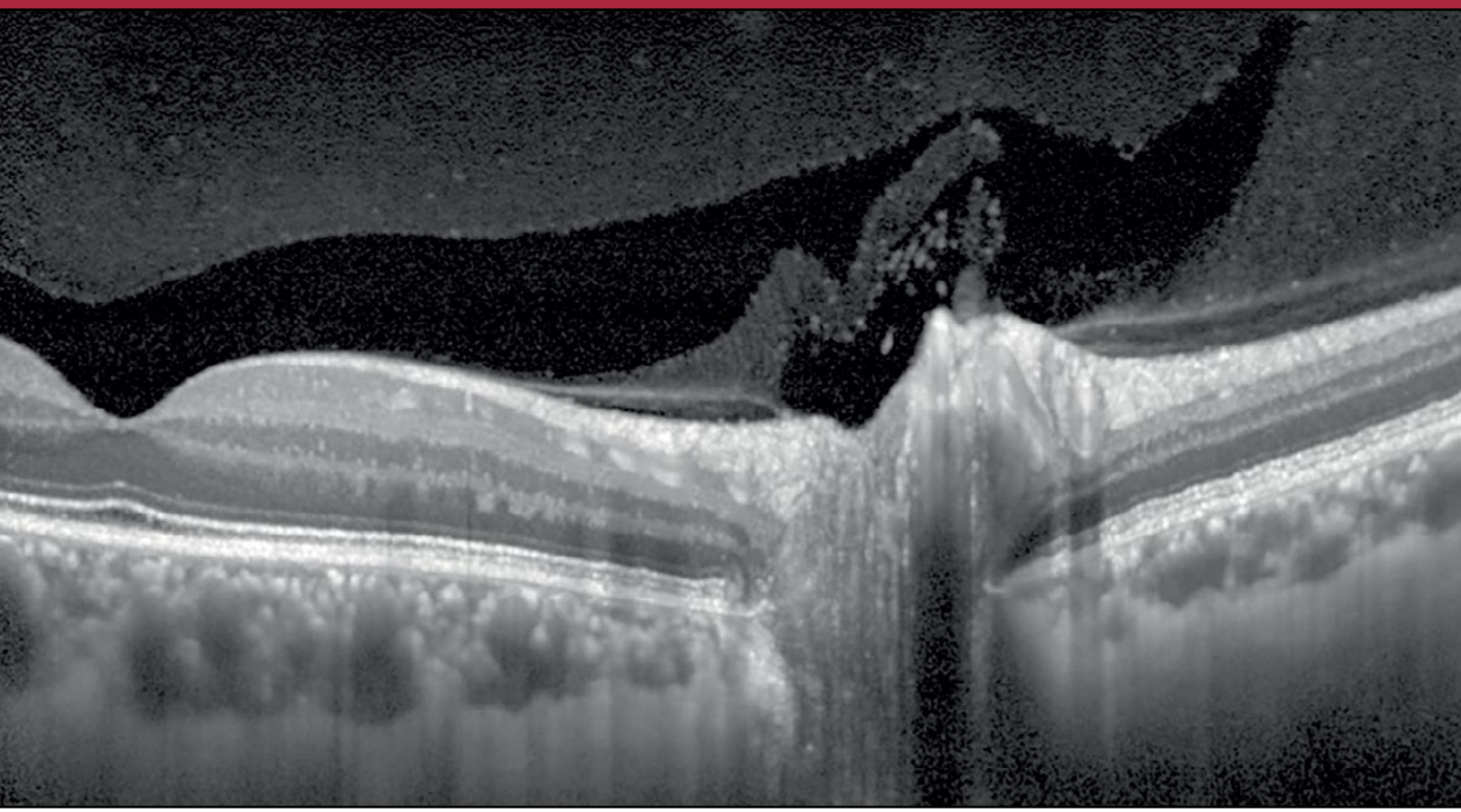
New OCT Technology Shortens Examination Time without Sacrificing Quality

Study shows time savings of close to 25% with SPECTRALIS OCT2 Module



"Patient wait time for OCTs has been reduced substantially even on our busiest days."

–Tim Steffens, Director, Ophthalmic Imaging and Information Systems, University of Michigan Kellogg Eye Center (USA)

New OCT Technology Shortens Examination Time without Sacrificing Quality

Study shows time savings of close to 25% with SPECTRALIS OCT2 Module

Study Conducted by Tim Steffens — Director of Ophthalmic Imaging and Information Systems
at the University of Michigan Kellogg Eye Center in Ann Arbor, MI, USA.

When it comes to clinical workflow, the rate at which patients move through the clinic from arrival to exit is a key factor in determining both the quality of the patient experience and the financial efficiency of the practice. In a typical clinic setting, patients move through multiple checkpoints as they receive preparation, diagnostic imaging, and then clinical examination by a physician.

Each step along the way has the potential to slow down the process. Spectral-domain optical coherence tomography (SD-OCT), for example, has become a standard of care for diagnostic imaging, with the majority of patients receiving this exam. The time needed to scan and evaluate each patient can have a large impact on clinical workflow. Accordingly, it would seem that the actual speed at which the scans are acquired may have a significant impact on the overall patient flow in the clinic.

The University of Michigan Kellogg Eye Center in Ann Arbor (USA) decided to test this theory with the OCT2 Module from Heidelberg Engineering. OCT2 is the next generation OCT module for the SPECTRALIS® platform, offering enhanced image quality from vitreous to choroid along with more than double the scan speed of the standard OCT.

"We wanted to look at work and patient flow to see how we could decrease patient wait times and patient movement through the Retina Clinic and the Ophthalmic Imaging Clinic," said Tim Steffens, Director, Ophthalmic Imaging and Information Systems.

To evaluate the workflow impact of upgrading their SPECTRALIS SD-OCT from the standard OCT hardware to the new OCT2 technology, Kellogg Eye Center created a study to compare the time required for patient exams utilizing the existing OCT technology to the time required with the same model SPECTRALIS upgraded with the OCT2 Module.

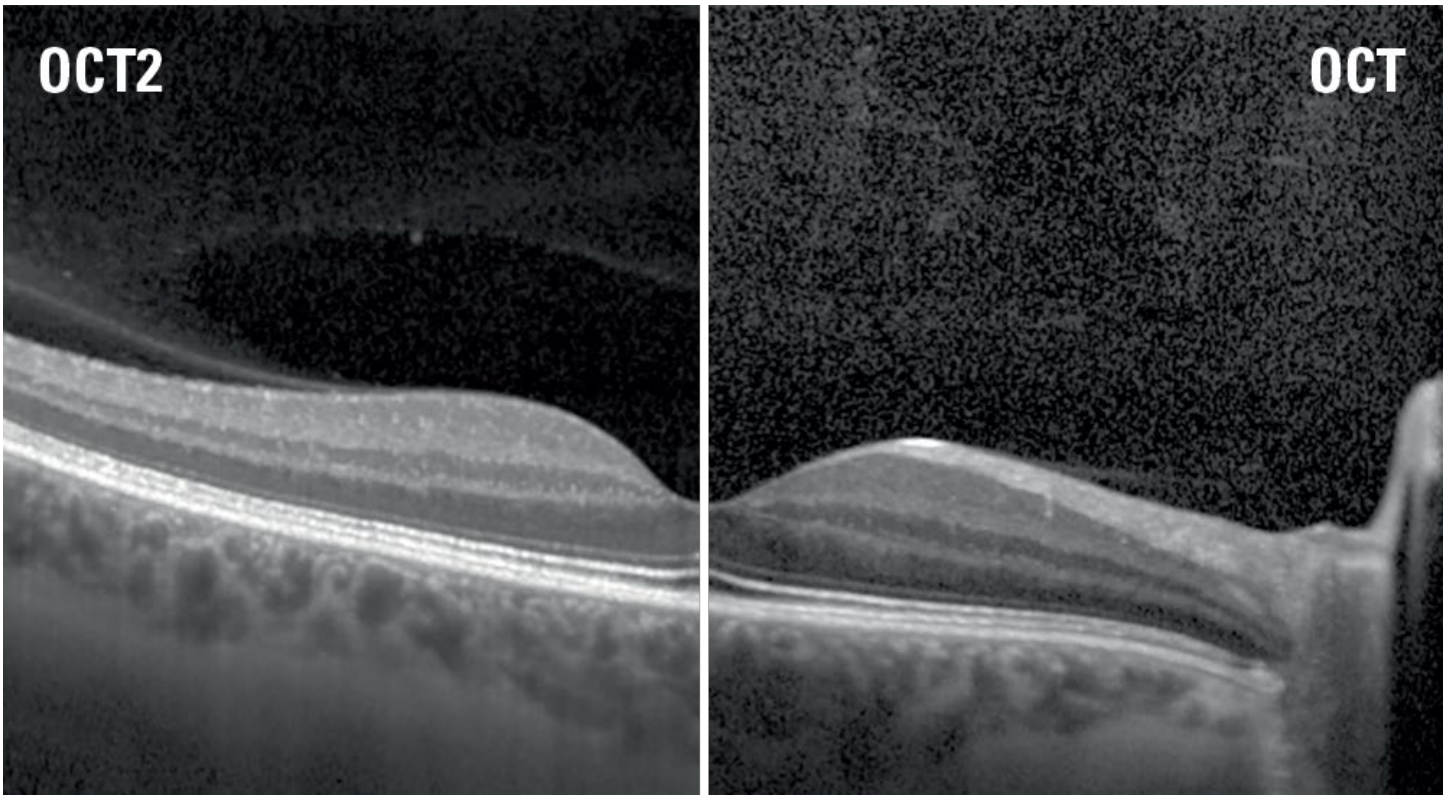
Kellogg Eye Center

THE STUDY

Kellogg Eye Center performed its prospective study over the course of five clinic days. In total, 715 patients were scanned on the standard SPECTRALIS OCT platform and 715 on the SPECTRALIS platform upgraded with the OCT2 Module. The study was performed on three SPECTRALIS OCT devices, each with an A-scan rate of 40,000 Hz, and two with the OCT2 Module, each with an A-scan rate of 85,000 Hz.

Patients were randomly assigned to either platform as they moved through the clinic. Only patients in which both eyes were scanned were included in the study, and each patient received the same scan protocol. For each eye, the patient was scanned with a FAST volume scan (20°x20°, 25-line volume scan, ART [automated real-time tracking] value of 9), a 7-line horizontal scan (30°x5°, 7-line scan, ART of 25) and a 7-line vertical scan (30°x5°, 7-line scan vertically oriented, ART of 25).

The photographers involved in the study received patients randomly, and for each patient they recorded the time, to the nearest minute, from when the patient sat down at the device to when they stood up after the OCT exam.



An OCT image captured with the OCT2 Module (L) shows greater detail from the vitreous through the choroid as compared to an OCT of the same eye obtained with the standard OCT (R).

RESULTS

A total of 1,430 patients were scanned, 715 on each SPECTRALIS platform. The average exam time was 6 minutes 56 seconds on the standard OCT and 5 minutes 18 seconds on OCT2. Since Kellogg Eye Center performs an average of close to 1,800 OCT exams per month, this time savings per exam would translate to nearly 3,000 minutes, or approximately 50 hours, per month.

"OCT2 was noticeably faster in both taking the images and processing them. Patient wait time for OCTs has been reduced substantially even on our busiest days," noted Steffens. "Both physicians and photographers love the OCT2 Module. The retina physicians are able to get to their injection patients faster to move them through the clinic, and the photographers have been able to move more patients through the Imaging Clinic. We are able to see more patients in the same amount of time."

While this study was not designed to evaluate image quality, the photographers saw benefits there as well. "The OCT2 images are much sharper, have more contrast, and have more choroidal detail than the standard OCT. We plan on purchasing only SPECTRALIS systems with the OCT2 Module going forward." The OCT2 Module is also available as an upgrade on existing SPECTRALIS systems.

BY THE NUMBERS

	SPECTRALIS OCT	SPECTRALIS with OCT2 Module
TOTAL PATIENTS	715	715
OCT SCAN RATE	40,000 Hz	85,000 Hz
EXAM TIME/ PATIENT	6 min 56 sec	5 min 18 sec

HEIDELBERG ENGINEERING

Headquarters
Heidelberg Engineering GmbH · Max-Jarecki-Str. 8 · 69115 Heidelberg · Germany
Tel. +49 6221 6463-0 · Fax +49 6221 646362

AUS
Heidelberg Engineering Pty Ltd. · 404 Albert St. · East Melbourne 3002 · Victoria
Tel. +61 396 392 125 · Fax +61 396 392 127

CH
Heidelberg Engineering GmbH · Alte Winterthurerstrasse 88 · 8309 Nürensdorf
Tel. +41 44 8887 020 · Fax +41 44 8887 024

UK
Heidelberg Engineering Ltd. · 55 Marlowes · Hemel Hempstead · Hertfordshire HP1 1LE
Tel. +44 1442 502 330 · Fax +44 1442 242 386

USA
Heidelberg Engineering, Inc. · 10 Forge Parkway · Franklin, MA 02038
Tel. +1 508 530 7900 · Fax +1 508 530 7901

www.HeidelbergEngineering.com