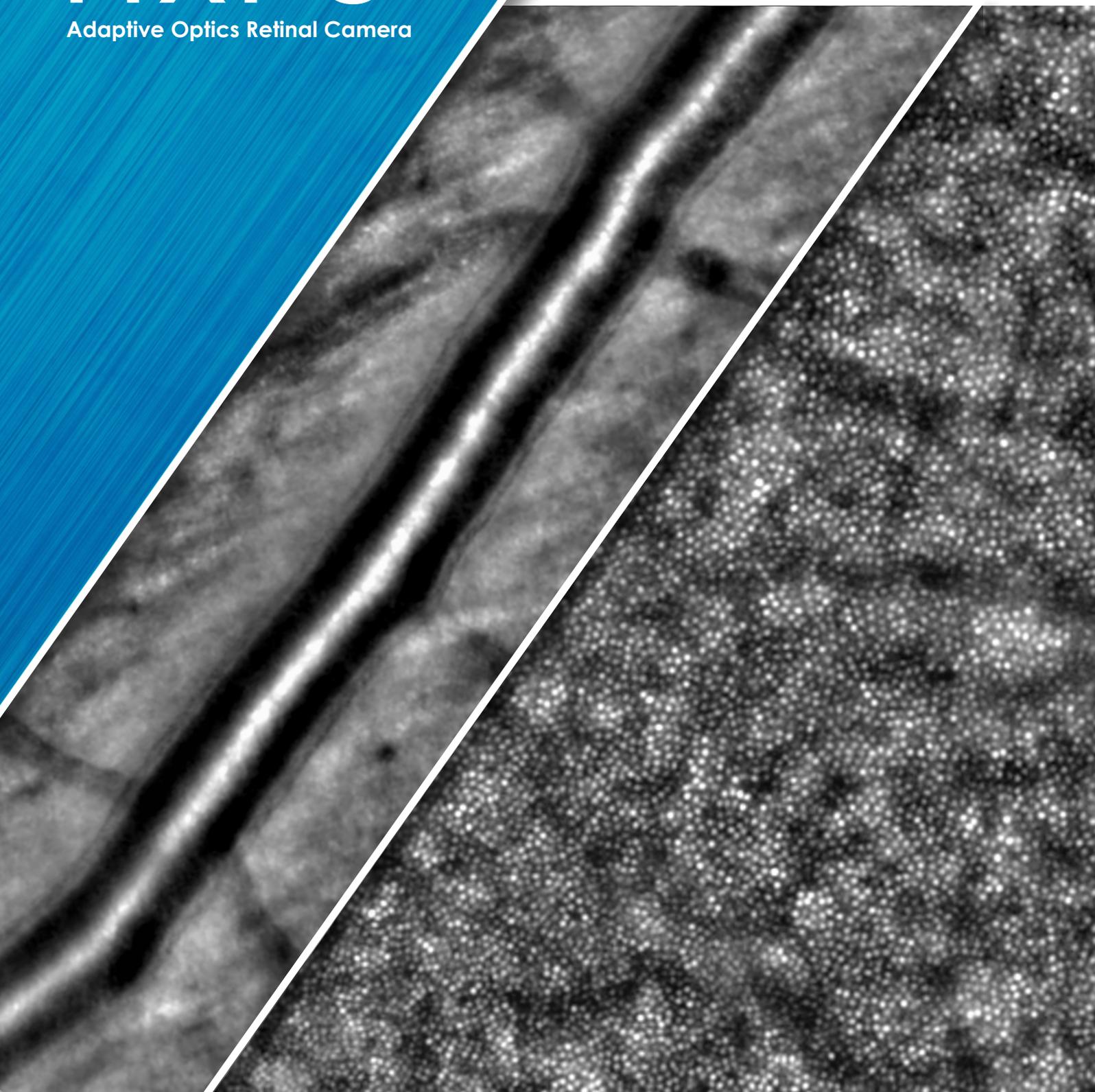


The power of Adaptive Optics
in the hands of clinicians

rtx1TM-e

Adaptive Optics Retinal Camera



See the retina beyond current limits

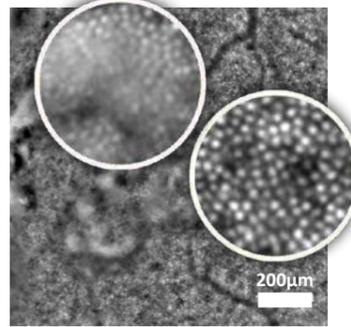
The rtx1 is an infrared retinal camera that offers a lateral resolution at least 10 times higher than OCT and other conventional imaging devices.

With the rtx1, you can examine the retina at a scale where single cells are visible.

rtx1 images reveal retinal details that remain invisible with other techniques :

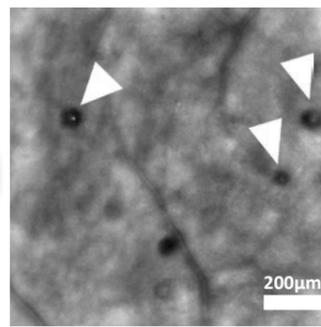
- Parafoveal photoreceptor cones
- Wall structure of arterioles
- Micro-aneurisms, micro-hemorrhages and other small lesions

Small drusen are revealed by changes in the cone cell mosaic



Familial drusen [1]

Micro-aneurisms are visible without injecting fluorescein



Diabetic retinopathy [1]

In all patients, AO images showed dark elements that were smaller than what could be resolved by fundus imaging and OCT

Bek. Acta Ophthalmologica 92, 753-758

Clinician-friendly adaptive optics

The time when AO technology could be mastered only by physicists and engineers belongs to the past.

Designed in collaboration with clinicians, the rtx1 unites ultrahigh resolution images, patient throughput and usability.



Fast and easy to operate

Acquisition in 2 seconds with the user-friendly interface



Comfortable for the patient

Non-mydratic on 4mm pupil and infrared only illumination



Cellular level follow-up

Distortion-free AO images perfectly aligned in 2 clics

The rtx1 demonstrates that, unlike the common belief, performing AO retinal imaging can be as easy as standard retinal imaging

Pr. Paques, Quinze-Vingt National Hospital, Paris, France.

Track microscopic retinal changes

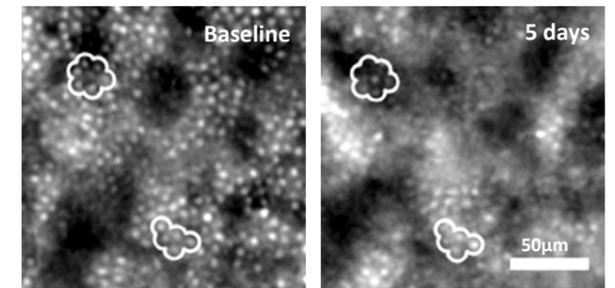
Unlike AO-SLO devices, the rtx1 delivers distortion-free retinal images.

Building on this unique advantage, the rtx1 software AOimage™ allows to easily capture images of the same retinal region through different visits and align these images with high accuracy.

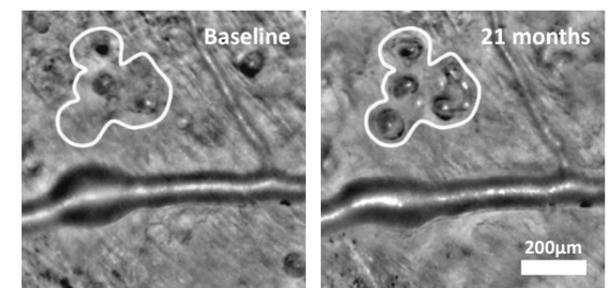
This follow-up functionality results in enhanced sensitivity for tracking minute changes in the retina over time.

We, for the first time, visualized longitudinal changes during the recovery of cone photoreceptors in the eyes of VKH patients

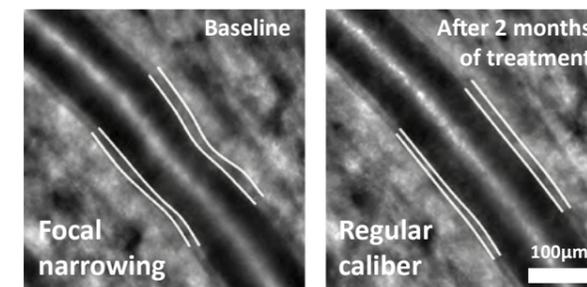
Nakamura et al. Graefes Arch Clin Exp Ophtha 2018, 256-38.



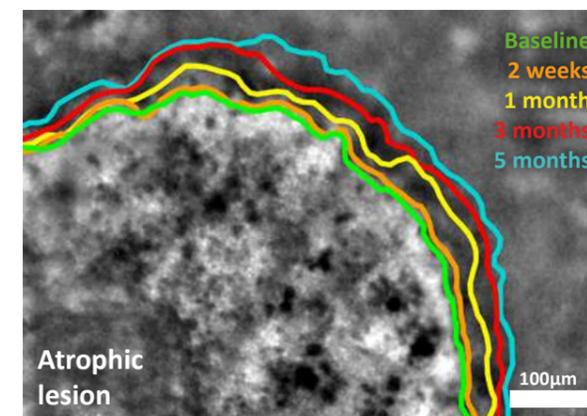
Follow-up images of cones - MEWDS [1]



Follow-up images of micro-aneurisms [3]



Arteriolar remodeling during anti-hypertensive therapy [2]



Geographic atrophy progression [1]

Enable new advances in biomarkers

The rtx1 has empowered clinical researchers to investigate a wide array of candidate biomarkers for assessing the micro-structural integrity of the retina.

rtx1 images are compatible with a semi-automated application¹ for analyzing the distribution of parafoveal cone cells and the wall structure of small arteries, for research use only.



in AO Retinal Imaging

The rtx1 is the only AO imaging device that has received regulatory clearance in multiple countries². It is the most widely-used AO device in clinical settings. With over 100 peer-reviewed publications describing various new insights in the retina enabled by its unrivaled resolution, the rtx1 is defining a new standard in retinal imaging.

[1] COURTESY OF QUINZE-VINGT NATIONAL EYE HOSPITAL, PARIS, FRANCE

[2] COURTESY OF PITIÉ-SALPÊTRIÈRE HOSPITAL, PARIS, FRANCE

[3] COURTESY OF NIPPON MEDICAL SCHOOL HOKUSOH HOSPITAL, CHIBA, JAPAN



The image resolution achieved by this technology is superior to that of any other current diagnostic tool.

Zaleska-Zmijewska et al. *Journal of Diabetes Research* 2017, 1–9.

Adaptive optics retinal imaging provided non-invasive and sensitive information on the pathologic disruption of the cone mosaic, even in the absence of subjective (visual loss) or objective (diagnostic imaging) abnormalities.

Ziccardi, L. et al. *American Journal of Ophthalmology* 160, 301–312.e6

TECHNICAL SPECIFICATIONS

Imaging type	En face reflectance imaging
Detection type	Low-noise CCD camera
Illumination	Near infrared LED, 850nm
Exposure time	< 10 ms
Imaging field of view ³	4° x 4°
Fixation stimulation range	H ± 14.4° / V ± 10°
Camera pixel pitch on the fundus ³	1.1 µm
Optical resolution on the fundus ^{3,4}	250 line pairs per millimeter (lppmm)
Adaptive optics control	Fully automated, resistant to blinking and movement
Depth focussing range ³	1600 µm
Pupil diameter	≥ 4 mm
Refractive error compensation	-12 to +6 D
Total footprint (WxDxH)	137 x 53 x 132-162 cm

rtx1-e Adaptive Optics Retinal Camera



18 rue Charles de Gaulle, 91400 Orsay, FRANCE

Contact number in Paris, FRANCE :
+33 (0) 1 64 86 15 66

Contact number in San Francisco, CA, USA :
+1 (415) 944-4461

contact@imagine-eyes.com
www.imagine-eyes.com



1. The analysis application is not part of the rtx1 product and is for research use only.
2. The rtx1 is an approved medical device in the European Union (device class 2a) and in Japan. In the USA, the rtx1 has not received FDA clearance. It is an investigational device and requires Institutional Review Board (IRB) oversight for use in any research application. Further information is provided in the user's documentation.
3. Some specifications are dependent on several factors including but not limited to: ocular biometry, pupil diameter, optical defects, ocular media transparency.
4. The system can image line pairs of 2 µm in line width.