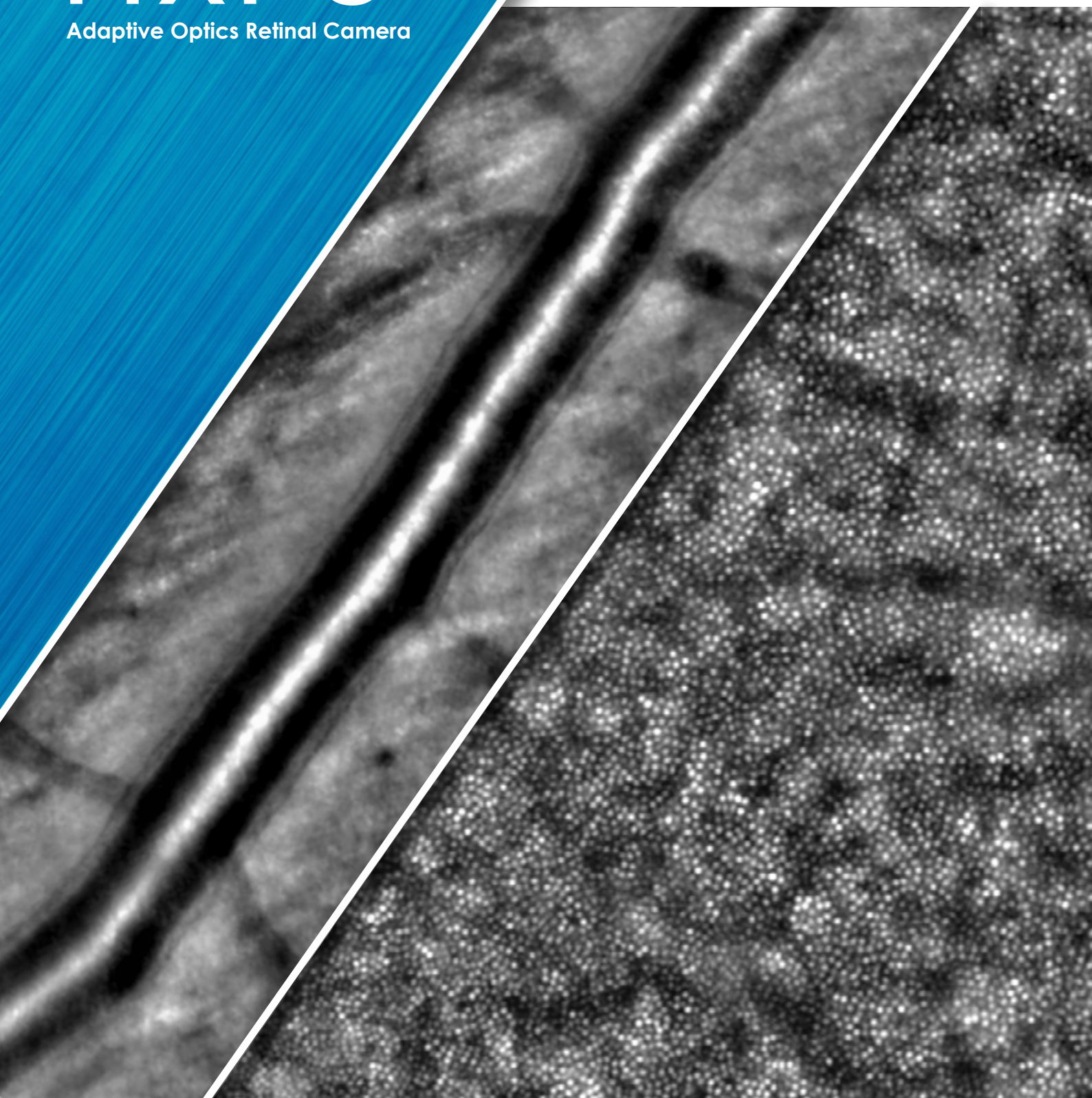
The power of Adaptive Optics
in the hands of clinicians

rtx1™-e

Adaptive Optics Retinal Camera

imagine eyes®



rtx1™-e

Adaptive Optics Retinal Camera

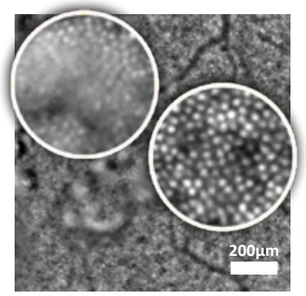
See the retina beyond current limits

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

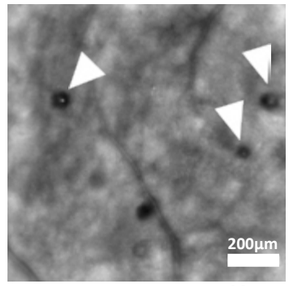
With the rtx1, you can examine the retina at a scale where single cells are visible.

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



Familial drusen[1]
Small drusen are revealed by changes in the cone cell mosaic



Diabetic retinopathy[1]
Micro-aneurisms are visible without injecting fluorescein

> *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 ultra-high 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-mydriatic on 4mm pupil and infrared only illumination

Cellular level follow-up
Distortion-free AO images automatically aligned with micrometer precision

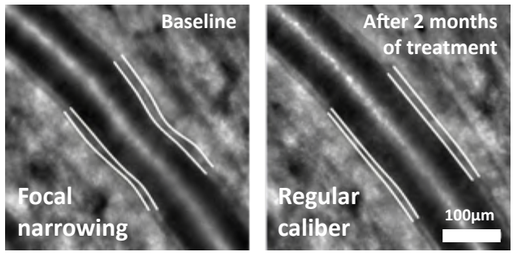
> *The rtx1 demonstrates that, unlike the common belief, performing AO retinal imaging can be as easy as standard retinal imaging.*
>
> Pr. Paques, Quinze-Vingt National Hospital, Paris, France.

Track microscopic retinal changes

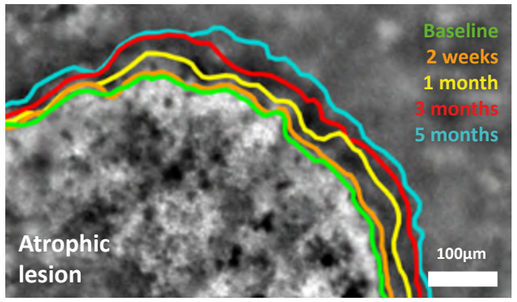
Unlike AO-SLO devices, the rtx1 delivers distortion-free retinal images. Building on this unique advantage, its software enables capturing images of the same retinal regions throughout different visits and automatically aligns them with micrometer accuracy.

Easy follow-up interface

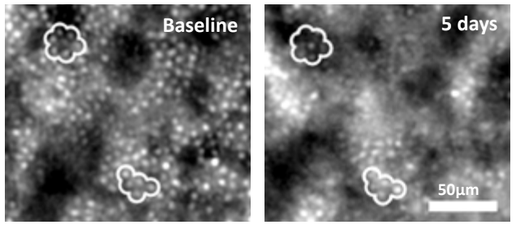
> *The rtx1 allowed us to directly observe stem-cell-derived RPE cells after their transplantation in a patient's retina. We could verify that the mosaic arrangement of these cells was similar to that of natural RPE cells, and stable over time.*
>
> Dr. Takagi, Kobe City Eye Hospital, Kobe, Japan.



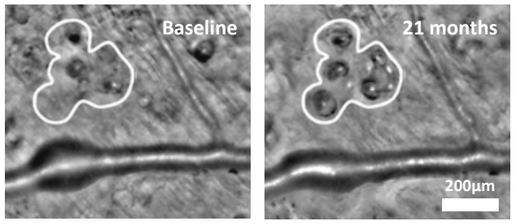
Arteriolar remodeling during anti-hypertensive therapy[2]



Geographic atrophy progression[1]



Follow-up images of cones - MEWDS[1]



Follow-up images of micro-aneurisms[3]

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 application[1] for analyzing the distribution of parafoveal cone cells and the wall structure of small arteries, for research use only.

THE Reference

in Adaptive Optics retinal imaging

The rtx1 is the only AO imaging device that has received regulatory clearance in multiple countries[2]. With over 130 peer-reviewed publications, it is the most widely used AO device in clinical settings throughout the world.

[1] Courtesy of Quinze-Vingt National Eye Hospital, Paris, France

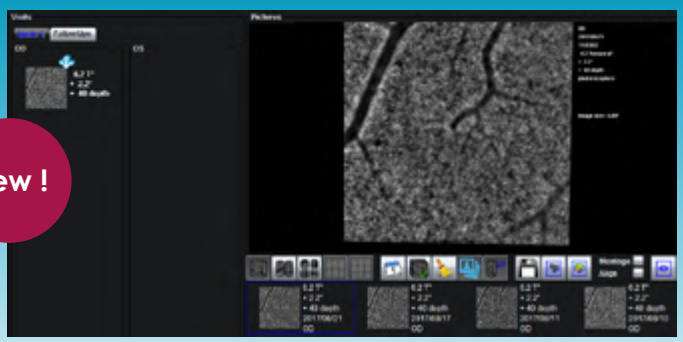
[2] Courtesy of Pitié-Salpétrière Hospital, Paris, France

[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 pathological 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.

New !



Follow-up management module

TECHNICAL SPECIFICATIONS — rtx1-e Adaptive Optics Retinal Camera

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

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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.