

Pupil diagnostics
have just been pulled
from the Dark Ages into
the 21st Century.



RAPD™
EXPANDED PUPIL DIAGNOSTICS **X**

OCT substantially enhanced retinal imaging... **RAPDx** has now substantially enhanced our view of neuro-pupillary dysfunctions. After a century and a half, it was about time.



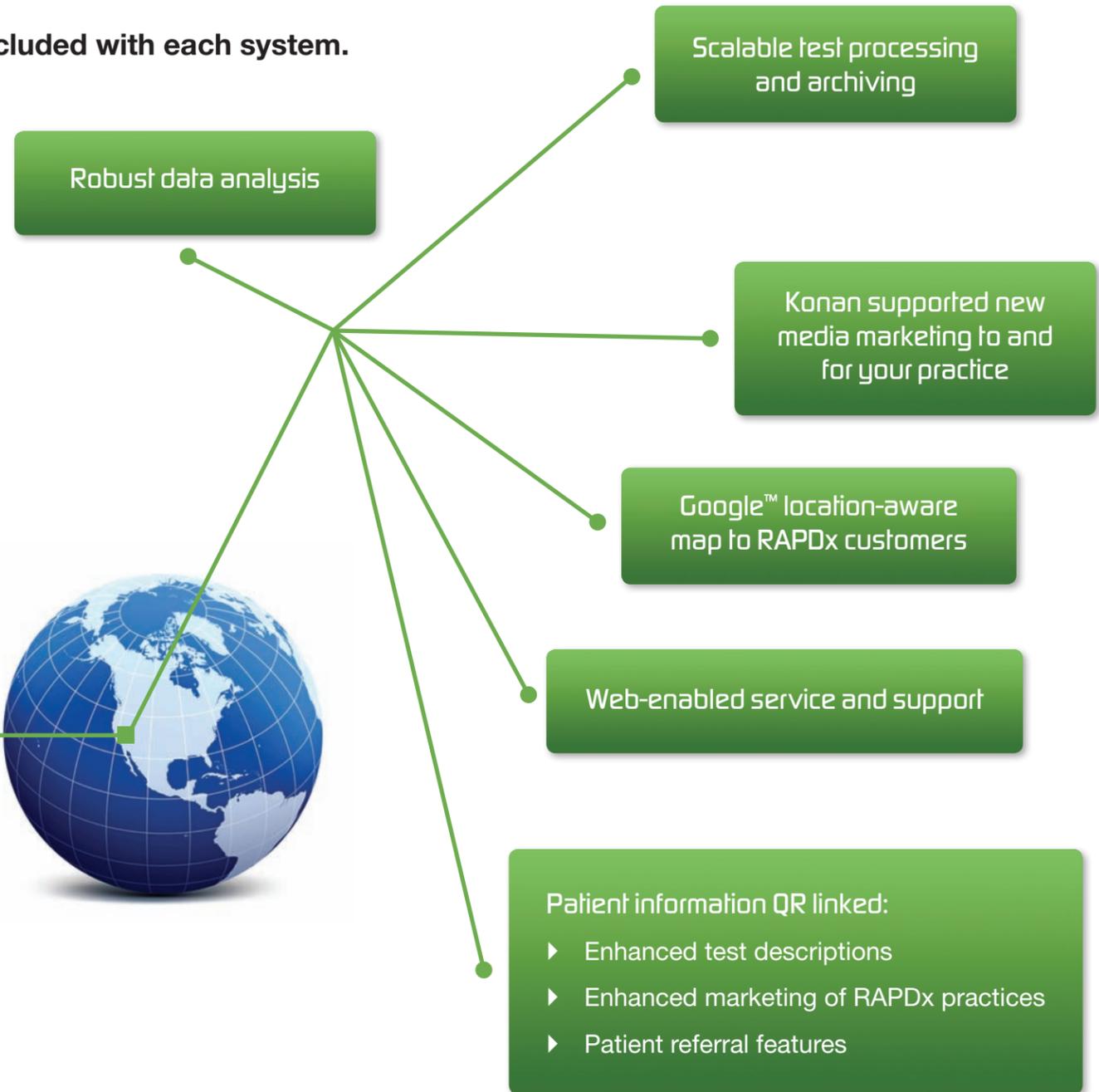
Yesterday:

Pupil defect testing began in the 19th Century, but until now, has been subjective, difficult to perform well and not conclusive. As a required part of a standard eye exam, the notation **“PERRLA -MG”** commonly appears (if testing was even performed) on the majority of patient records. **Even with the best of intentions, this is perhaps unwittingly inaccurate.**



KONANTM
Cloud
Services

Included with each system.



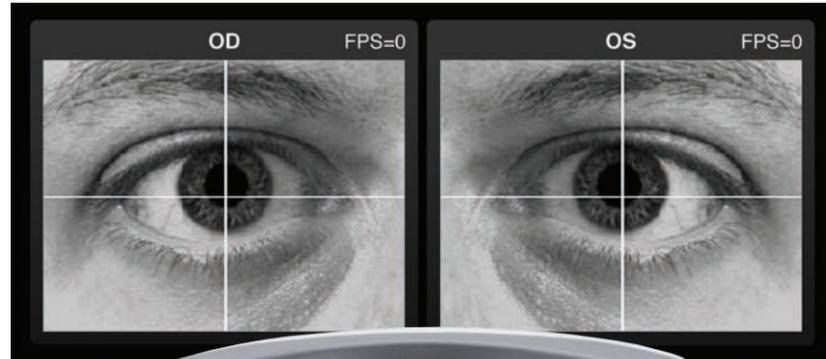
“The biggest problem with RAPD testing is that eyecare providers don’t do it... I estimate that pupillary testing is documented only about 10% of the time. It used to be gonioscopy took the prize for being done seldom and badly...”¹

Lankaranian, Altangerel, Spaeth et al 2005

¹ www.ncbi.nlm.nih.gov/pubmed/17573859

Technology

- ▶ HD, infrared, machine-vision
- ▶ Eye tracking
- ▶ Automated blink detection and rescheduling
- ▶ Digital, binocular recording of monocular stimuli responses



“*Routine physician assessment of an RAPD has been clinically difficult with any measure of precision. Now with the use of RAPDx, our techs can simply and objectively provide an entirely new level of detail in detection of an APD. Every doc will want one to enhance detection of neuro-affected diseases. This can be very interesting in looking at disease progression at a very early stage.*”

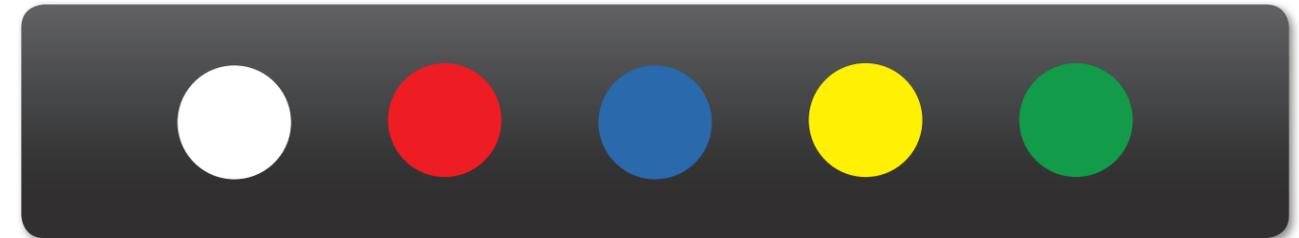
Theodore Krupin, MD

Stimuli

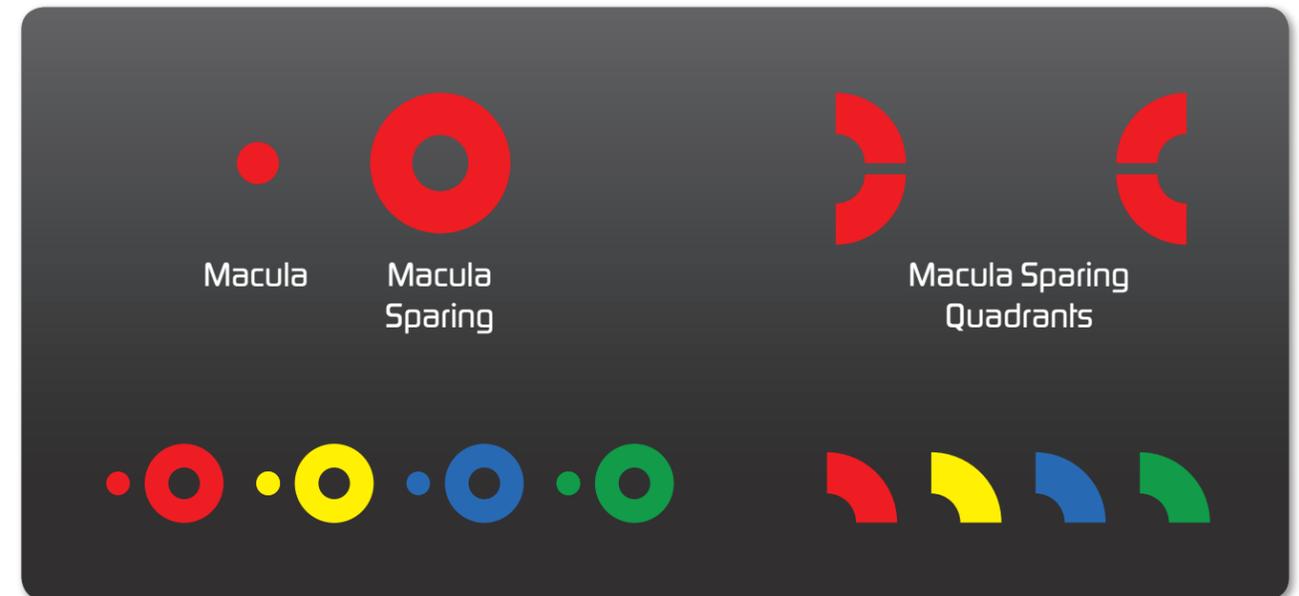
RAPDx presents patented³ monocular stimuli while the patient is viewing binocularly

- ▶ White light and multi-chromic
- ▶ Multi-intensity
- ▶ Full-field, macular, macula sparing
- ▶ Quadrants

Full-field White and Primaries



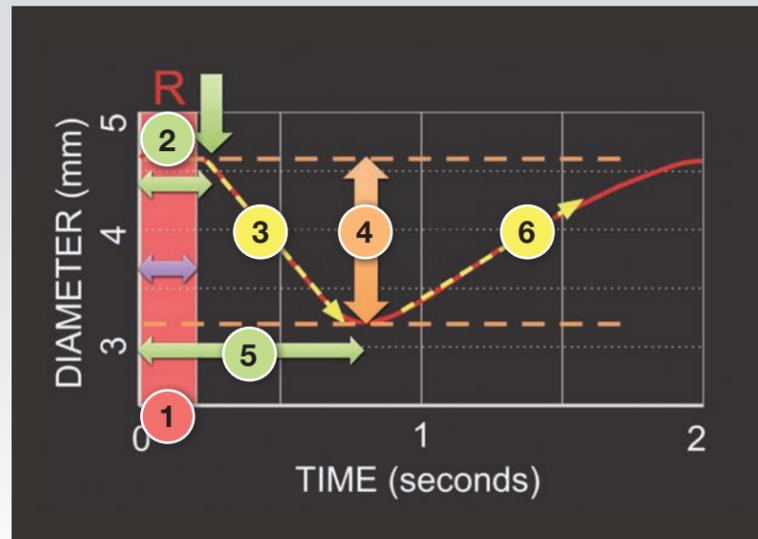
Partial-field



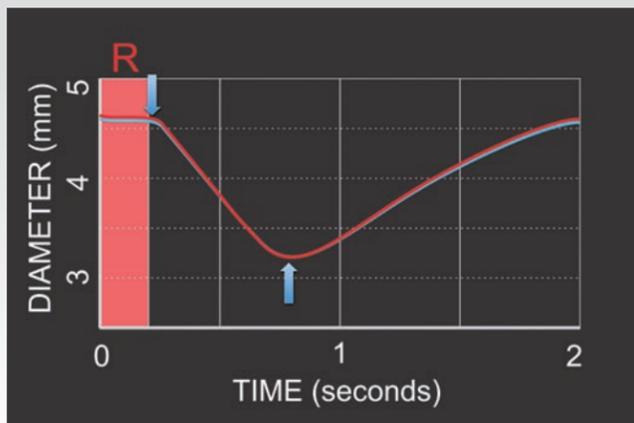
RAPDx SignatureTM

RAPDx records a high-definition, biometric waveform, the **RAPDx SignatureTM**, which characterizes key features of pupil defect responses beyond those seen by human observers of the old Swinging Flashlight Test.

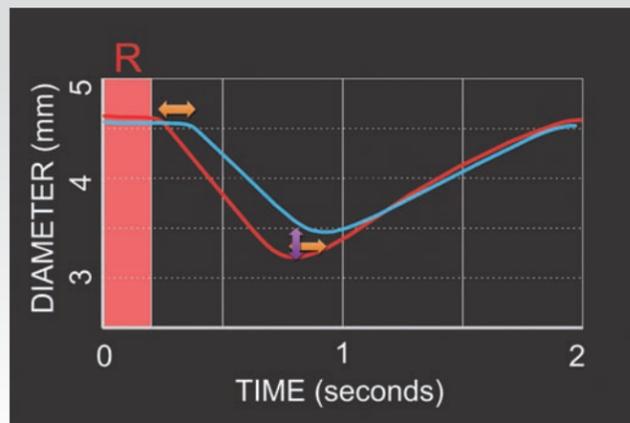
1. Stimulus Duration
2. Constriction Onset Latency
3. Constriction Velocity
4. Constriction Amplitude
5. Maximum Constriction Latency
6. Recovery Velocity



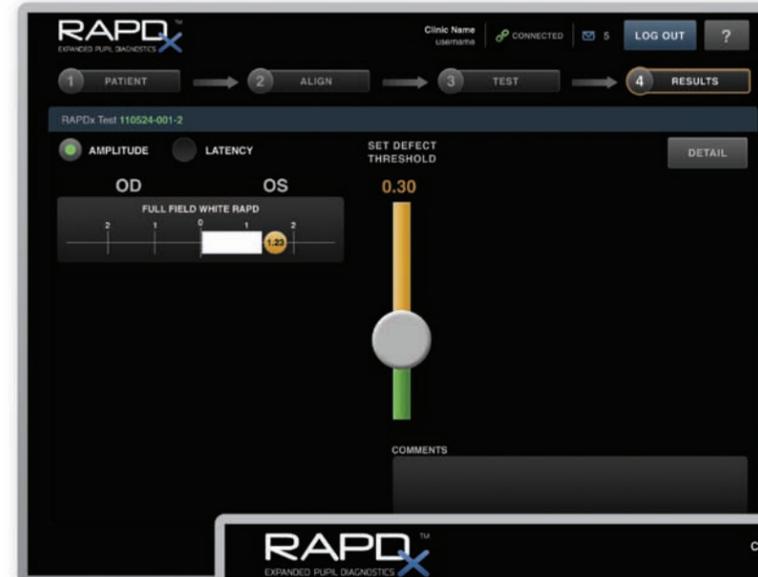
Normal, typical, matching responses



Abnormal, differential latencies and constriction amplitudes



RAPDx Results



Basic View:

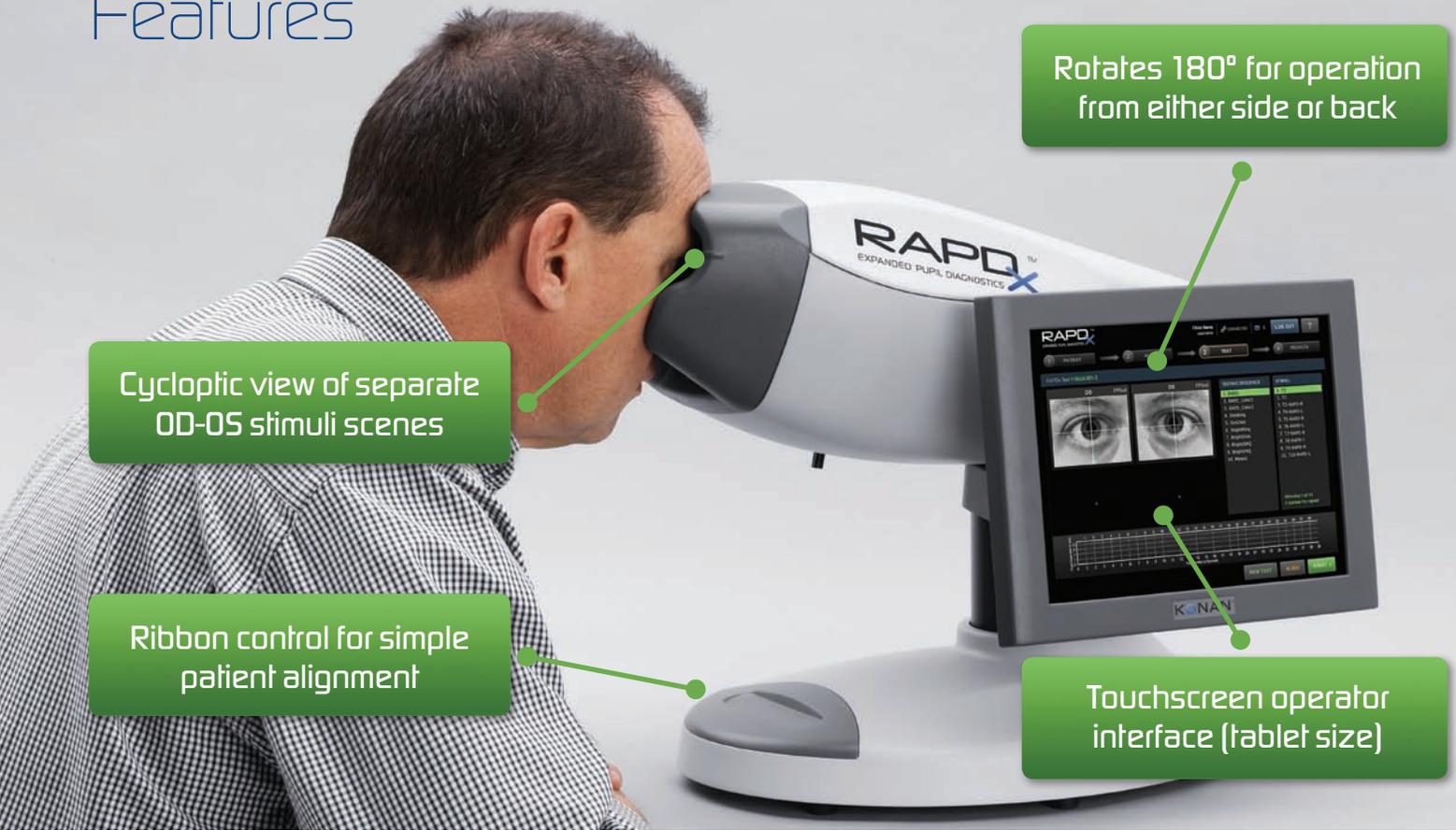
- ▶ Analog of Swinging Flashlight Test
- ▶ User-adjusted defect threshold
- ▶ Amplitudes and latencies
- ▶ Normative databases in development



Detailed View:

- ▶ Primaries and patterns
- ▶ Analog of Swinging Flashlight Test
- ▶ User-adjusted defect threshold
- ▶ Amplitudes and latencies
- ▶ Normative databases in development

Features



Rotates 180° for operation from either side or back

Cycloptic view of separate OD-OS stimuli scenes

Ribbon control for simple patient alignment

Touchscreen operator interface (tablet size)

Specifications

Integrated computer	Integrated web communications (ethernet and WiFi)
Patient self-alignment ribbon	Touchscreen operator display rotates 180°
Digital, 60 Hz, Infrared machine-vision system	Auditory cues for simplified test process
100-240 VAC, 50-60 Hz	Synchronous imaging & stimulus-display
USB 2.0 (x 2)	FDA Class I device
Konan Medical USA, Inc. is ISO 13485 certified	Web-enabled remote service and training capabilities

³ RAPDx is a Konan trademark. RAPDx is covered under US and International patents including: 7,334,895; 7,488,073; 7,810,928; 7,874,675; 03788506.8

Distributed by

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