Welcome

Visual Clarity Measurement for the 21st Century



How a Dyop® Vision Test Works



The Dyop® ring spinning gaps/segments provide a strobic stimulus to the photoreceptors using <u>resolution</u> acuity rather than the inherently imprecise and inconsistent <u>recognition</u> acuity of letter-based tests. The Dyop acuity endpoint is the smallest Dyop diameter where a person can detect the Dyop as spinning.

Rather than guessing letters, the Dyop response question is: "Can you still clearly detect the direction of the spinning Dyop?" as the spinning Dyop gets smaller. The Dyop 20/20 or 6/6 acuity endpoint is 7.6 arc minutes in diameter which is equivalent to the Snellen 5 arc minutes acuity endpoint letter height.

How a Dyop® Vision Test Works



Optotype = visual target

Dyop® = dynamic optotype



2020 Technology

Dyop® components:

1 – visual angular velocity or strobic contrast response

- 2 a moving segment visual arc-area dynamically stimulating retina cells with motion
- 3 retinal cells
- 4 an example of a static historical optotype

5 – a static minimum angle of resolution of a historical optotype



A Dyop® test:

- is six times more precise than static image testing,
- has one/sixth the variance of static image testing,
- is three times as efficient, avoids overminusing,
- minimizes fixation, minimizes decision fatigue, and
- does not require patient literacy.

Dyop® Screen Controls

The initial Dyop® screen has simple controls & a simple display.



Only ONE Dyop of the duo should be spinning

Dyop® Screen Icons

Roll-over Dyop® Menu Icons shows additional Control Options



Roll-over Icons for Test Settings, Test Help, Global Help, Help for the Remote, Keyboard, Mouse, and Research Data Entry

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Dyop® Test Selection Icons

Roll-over Dyop® Menu Icons shows additional Control Options



Roll-over Icons for Dyop test options

Feet, Metric, LogMar, Decimal Settings

Dyop Notation Icon Settings



Options for Dyop test measurement formats

Dyop® Setup Menu Access Icon

Go to the Settings Menu for proper Initial Calibration



Simple roll-over Settings Menu access or Press F-10

Dyop® Setup Menu Screen

Enter the <u>calibration</u> line <u>size</u> and viewing <u>distance</u> Select <u>Save</u> and then <u>Close</u> when changes are complete



Dyop® Setup Menu Screen

Enter the Office and Practice information. Select Save and then Close when changes are complete



Save and Close to Exit the Setup and Return to the

Dyop® Setup Screen

Chose the Examination Lane viewing <u>Configuration</u> Select Save and then Close when changes are complete



Dyop Acuity Test Modes Choose Patient Wizard, Adult Duo, Children's Duo, or Single Test

Also options for Color/Contrast and Precision Screening



The Wizard can also be accessed via Keystroke "W"

Patient Wizard - Adult Test



The Dyop Wizard <u>Adult Duo</u> rapidly determines the acuity The Wizard can also **60 accies** sed via Keystroke "W"

Patient Adult Duo Test

Dyop® <u>Adult Duo Test</u> – 41 arc minutes = 6/120 meters For use at 6 meters (20 feet) viewing distance



Acuity question: "Which (Dyop) segmented ring is spinning? 14 (Left or Right?) Is it spinning clockwise or anti-clockwise?

The Wizard Creates a Test Report



The Wizard rapidly determines the acuity endpoint.

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Basic Color Screening Patient Test

Best done at a 3 meter (10 foot) viewing distance.



The Wizard rapidly determines the acuity endpoint.

Basic Color Screening

Black/White-on-Gray versus Blue/Black versus Green/White

The three acuity tests are done sequentially as binocular tests and can rapidly screen for color abnormalities which may be indicative of potential symptoms of dyslexia, migraines and epilepsy.



Acuity question: "Which (Dyop) segmented ring is spinning? (Left or Right?) Is it spinning clockwise or anti-clockwise?

Advanced Color Screening Test



The Wizard rapidly determines the acuity endpoint.

Advanced Color Screening Test

Dyop® Color Acuity Measurement

Color tests are done sequentially as a binocular test.

Acuity question: "Which (Dyop) segmented ring is spinning? (Left or Right?) Is it spinning clockwise or anti-clockwise? 19

Patient Children's Test – Basic Acuity

Dyop Duo Children's Acuity Detection

Dyop Duo Children's Test best done at 1 meter (3 feet).

Options	Dyop Vision Test		CHART 2020 Dyop Vision Screening				CHART 2020	
Patient Test Eye	John Doe , Jr. (6 years old) Right Left	ange Patient Both	Dyop Vision 2020-03-2 John Doe , Jr. patient name Adult Test metrod 3 Meters distance	25 T Male pender p L	fel: 888-555-12 3/25/2020 pe date time stert ID figh aminance	12 7:06 PM Basic Acuity _{Dyep Color}	10.5 venio Monitor not calibrate aitention info Not Refer Result	9.60 ×
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Luminance	• Normal • 85 cd/m2				Both 6/7.5	_		
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	Advanced Color Test START		۲					IESH LTH Tions

The Wizard rapidly determines the acuity endpoint.

Color Acuity Options

Dyop® Color Acuity Options – Red, Green, Blue, & Yellow

Blue/Black Acuity Group Screening

Dyop® Genetic <u>Color/Contrast Blue/Black</u> Screening Pressing the Home Key scrolls through the color options

Acuity question: "Which (Dyop) segmented ring is spinning? 22 (Left or Right?) Is it spinning clockwise or anti-clockwise?

Green/White Group Screening

Dyop® Genetic Color/Contrast Green/White Screening

Acuity question: "What is the smallest spinning ring you can clearly 23 detect as spinning? Is it spinning clockwise or anti-clockwise?

Red/Gray Color Acuity

Precise <u>Red</u> Acuity Measurement

Acuity question: "Which (Dyop) segmented ring is spinning? 24 (Left or Right?) Is it spinning clockwise or anti-clockwise?

Yellow Color Acuity

Precise <u>Yellow</u> Acuity Measurement

Acuity question: "Which (Dyop) segmented ring is spinning? 25 (Left or Right?) Is it spinning clockwise or anti-clockwise?

Green/Gray Color Acuity

Precise Green Acuity Measurement

Acuity question: "Which (Dyop) segmented ring is spinning? 26 (Left or Right?) Is it spinning clockwise or anti-clockwise?

Blue/Gray Color Acuity

Precise Blue Acuity Measurement

Acuity question: "Which (Dyop) segmented ring is spinning? 27 (Left or Right?) Is it spinning clockwise or anti-clockwise?

For Children age 1 and older at 1 meter (3 foot) viewing distance

Alternating Location for Rotation and Acuity Detection

For Children age 1 and older at 1 meter (3 foot) viewing distance Maximum Children's Acuity Detection – 6/120 Metric

<u>NO Questions</u>. Instead watch the infant's head and eyes to detect which ring they see spinning as the rings get smaller.

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For Children age 1 and older at 1 meter (3 foot) viewing distance Maximum Children's Acuity Detection – 20/400 Snellen

For Children age 1 and older at 1 meter (3 foot) viewing distance Alternating Location for Rotation and Acuity Detection

For Children age 1 and older at 1 meter (3 foot) viewing distance Alternating Location for Rotation and Acuity Detection

Children's Acuity – Blue/Black Acuity

For Children age 1 and older at 1 meter (3 foot) viewing distance Allows for Color perception diagnostics

<u>Children's Acuity</u> – Green/White

For Children age 1 and older at 1 meter (3 foot) viewing distance Allows for Color perception diagnostics

Dyop Infant Acuity – 41 arc minutes

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

Dyop Infant Acuity – 15 arc minutes

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

Dyop Infant Acuity – 8 arc minutes

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

Dyop Infant Acuity - Red

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

<u>NO Questions</u>. Instead watch the infant's head and eyes to detect which ring they see spinning as the rings get smaller.

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Dyop Infant Acuity - Blue

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

Dyop Infant Acuity – Green

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

<u>NO Questions</u>. Instead watch the infant's head and eyes to detect which ring they see spinning as the rings get smaller.

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Dyop Infant Acuity - Stable Near Image*

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

*Better acuity with Green/White than with Blue/Black.

Dyop Infant Acuity – Near Vision Stress*

For Children age 1 month to 12 months at 1 meter (3 foot) viewing distance. Alternating Location for Rotation and Acuity Detection

*Better acuity with Blue/Black than with Green/White.

Dyop Infant Acuity – 81 arc minutes

Exit the Infant Test by pressing any of the Dyop Test keystrokes, "A" (Adult), "U" (Children), "S" (Single Dyop), "C" (Contrast), "P" (Precision)

Single Dyop Test

Acuity ranges from 6/2 (20/4) to 6/600 (20/2000) in seven steps

Single Dyop Test Dyop® – 41 arc minutes = 6/120 meters = 20/400 feet also in LogMAR (1.3) and Decimal (0.05)

Maximum Dyop Arc Width

Dyop® Acuity Maximum Value – Metric <u>6/600</u> or Sloan <u>20/2000</u> also in LogMAR (2.0) and Decimal (0.01)

Acuity question: "What is the smallest spinning ring you can clearly 46 detect as spinning? Is it spinning clockwise or anti-clockwise?

Dyop <u>Color/Contrast</u> Mode Keystroke "C" for Color/Contrast

Acuity in 0.02 diopter increments

Acuity question: "What is the smallest spinning ring you can clearly ₄₇ detect as spinning? Is it spinning clockwise or anti-clockwise?

Dyop Color/Contrast Mode

Predefined for Color/Contrast options

Access the Contrast Menu via Shift F-10 or the Color/Contrast Icon 48

Dyop Color/Contrast Mode

Color/Contrast permutations may also be customized

Access the Contrast Menu via Shift F-10 or the Color/Contrast Icon 49

Dyop <u>Color/Contrast</u> Mode

Color/Contrast permutations may also be customized Options advanced by the N Keystroke or reversed by the J

Acuity question: "What is the smallest spinning ring you can clearly detect as spinning? Is it spinning clockwise or anti-clockwise?

Dyop Precision Modes Keystroke "P" for Precision

Acuity in 0.02 diopter increments

Acuity question: "What is the smallest spinning ring you can clearly detect as spinning? Is it spinning clockwise or anti-clockwise?

Dyop Precision Mode

Precise Emmetrope Acuity in 0.02 diopter increments Precise Acuity in <u>Snellen feet</u> measurements

Acuity question: "What is the smallest spinning ring you can clearly detect as spinning? Is it spinning clockwise or anti-clockwise?

Dyop® Remote Help

Dyop® Remote Help - Access via the control menu

Simple button controls.

Dyop® Keyboard Help

Dyop® Keyboard Help - Access via the control menu

Simple keyboard controls.

Dyop® Dual Screen Mode

Allows the doctor to run the test without clueing the patient as to the answers.

Patient Screen

Doctor Screen

What the patient sees.

What the refractionist sees.

To Exit - go to the Menu Icon

Roll-over the Dyop® Control Icon to Exit the Dyop® test

Click the Control Icon to display the Menu Icons.

Select the Dyop® Exit Icon

Select the Dyop® X (Exit) Icon to Exit the Dyop® test

Click the Exit Icon to quit the Dyop test.