# The Kinetic Visual Field
## Unique Field of Syntonics

**Syntonics Advanced 102**
**June 2020 Zoom**
**John Pulaski, OD, FCSO**

# The Syntonic Visual Field

Fritz Popp described the biophoton field that surrounds living organisms as being highly complex, self-tuneable, oscillating fields of energy. This 'field' regulates and controls all our life processes. When we plot colour visual fields, we are measuring information that the brain receives from the eyes and the eyes receive from the 'field'. In the same way as we emit a spectrographic pattern of our electromagnetic field, we can plot colour emanation from the brain. This colour visual field then describes the emergent biophoton field of a human being.

# The Visual Field
# Types of Measurements

1. Gross awareness to light stimulus
2. Confrontation Fields
3. Form Fields – object awareness
4. Extinction Phenomena
5. Static (Automated)
6. Kinetic (Functional)
7. Frequency Doubler (FDT)

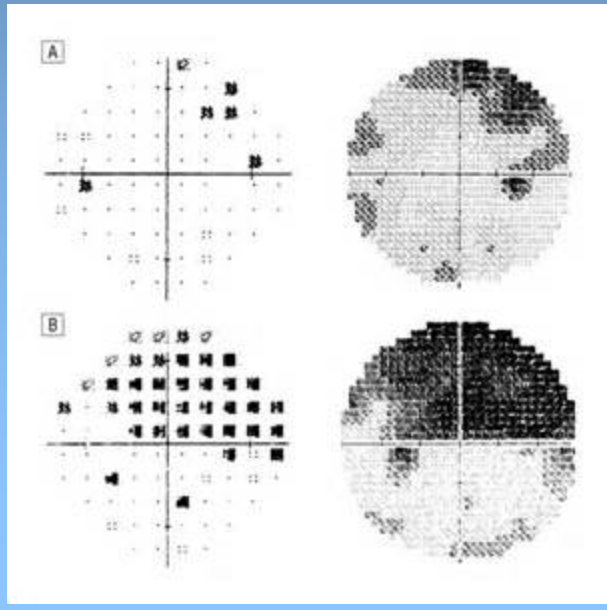
# The Visual Field Measurement Techniques

## Static (Automated)

### Conventional, Computerized, "Gold Standard"

Involves detection of a stationary target

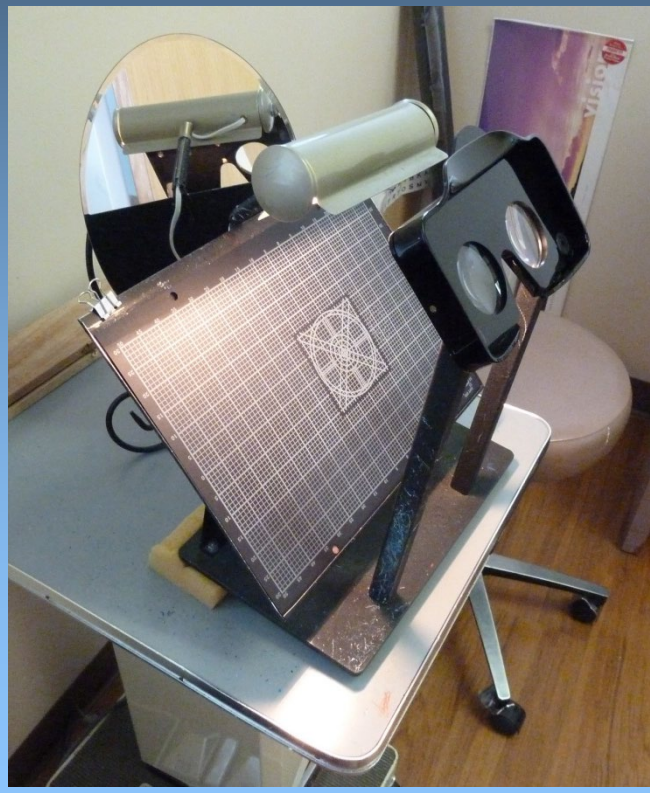
- Generally white light only.
- Threshold of light sensitivity
- Is for detecting pathology
- Relates to the "structural" integrity of the visual pathways in the brain.



# The Visual Field Measurement Techniques

## Kinetic (Functional)

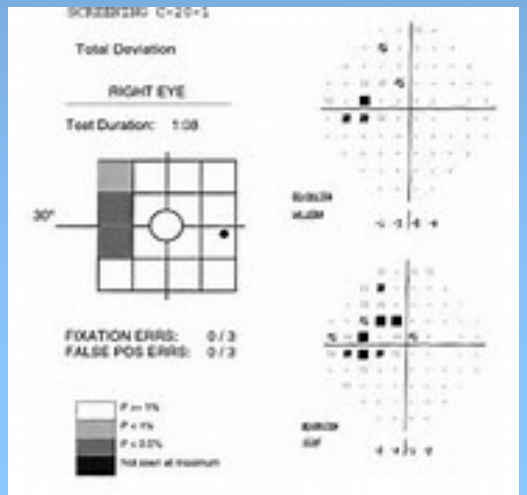
- Campimetric, Goldmann, Tangent Screen
- Used with stereo campimeter in Syntonics
- Detection of a moving target from non-seeing to seeing.
- Reveals pathologic as well as perceptual deficits
- Can be improved and used to monitor effectiveness of any treatment modality
- Test multiple levels of function
  - Motion, white and 3 colored targets



# The Visual Field Measurement Techniques

## Frequency Doubler (FDT)

- High Temporal Frequency Flicker Rate
- Flicker Sensitivity involves interpretation by retinal periphery
- Magnocellular or cortical pathways
- Correlates well with the kinetic field we measure in Syntonics



# The Visual Field
# Static vs Kinetic Field

**LOW SPATIAL RESOLUTION WITH STATIC PERIMETRY**

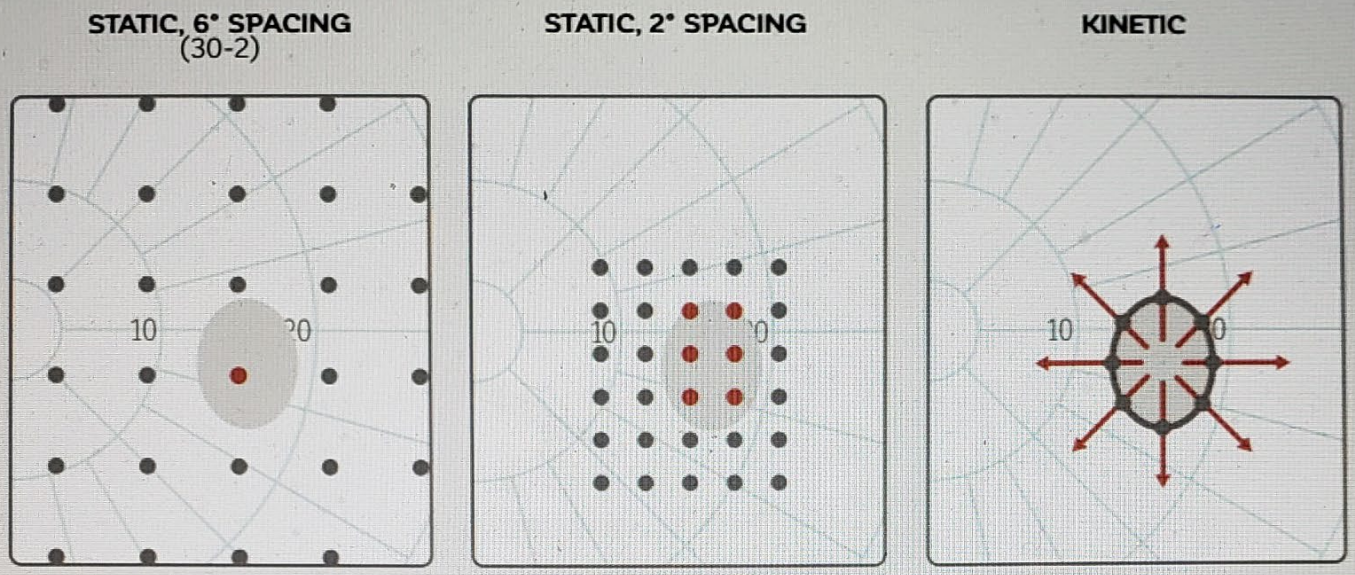



**FIGURE 11-1** Static perimetry has relatively low spatial resolution as demonstrated in this example in which the blind spot is tested. Using a 30-2 pattern with 6°spacing, only one or two locations are tested within the blind spot, providing no details about its size. Using a customized test pattern with 2°spacing provides higher, but not optimal resolution, while increasing test duration. Kinetic perimetry in this situation provides much higher spatial resolution with similar or lower test duration.

# The Visual Field
# Static vs Kinetic Field

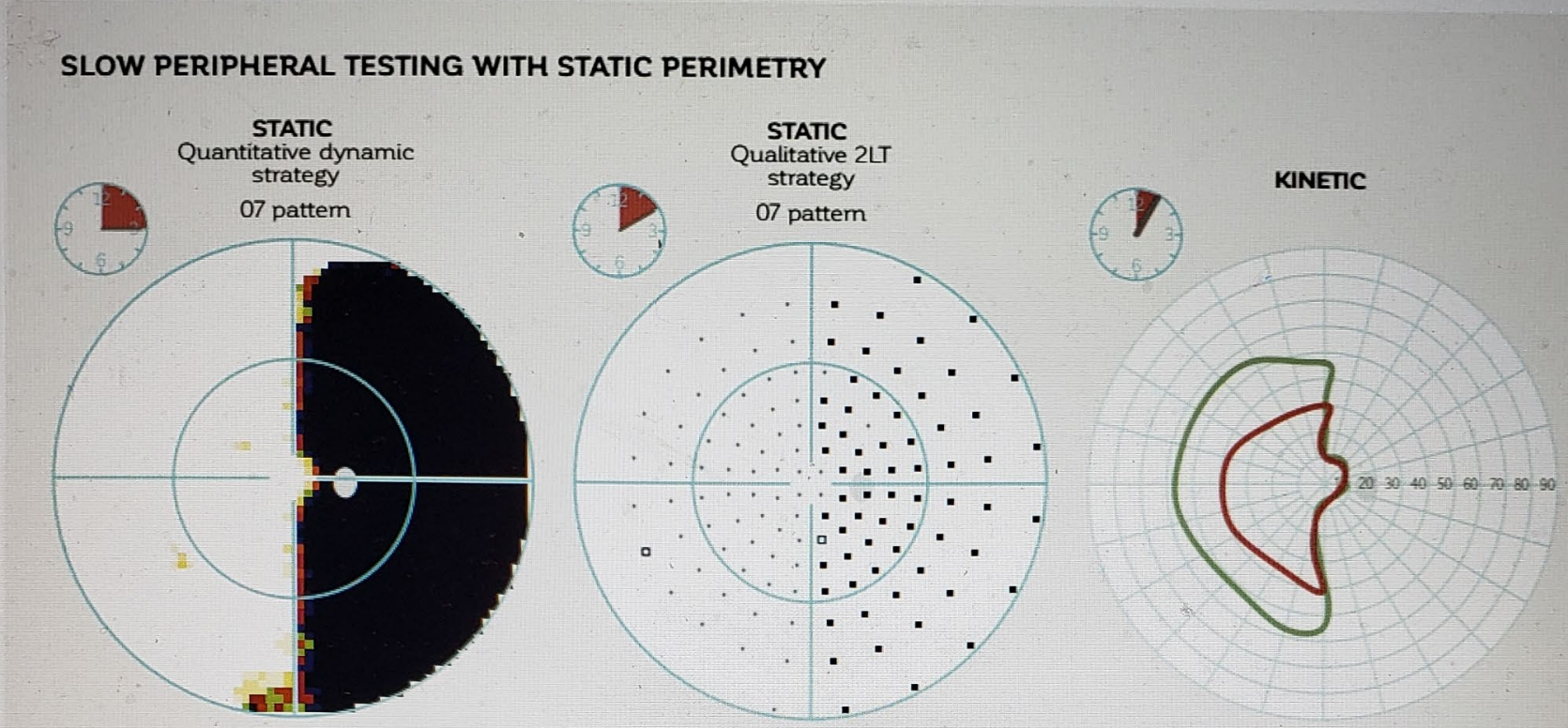
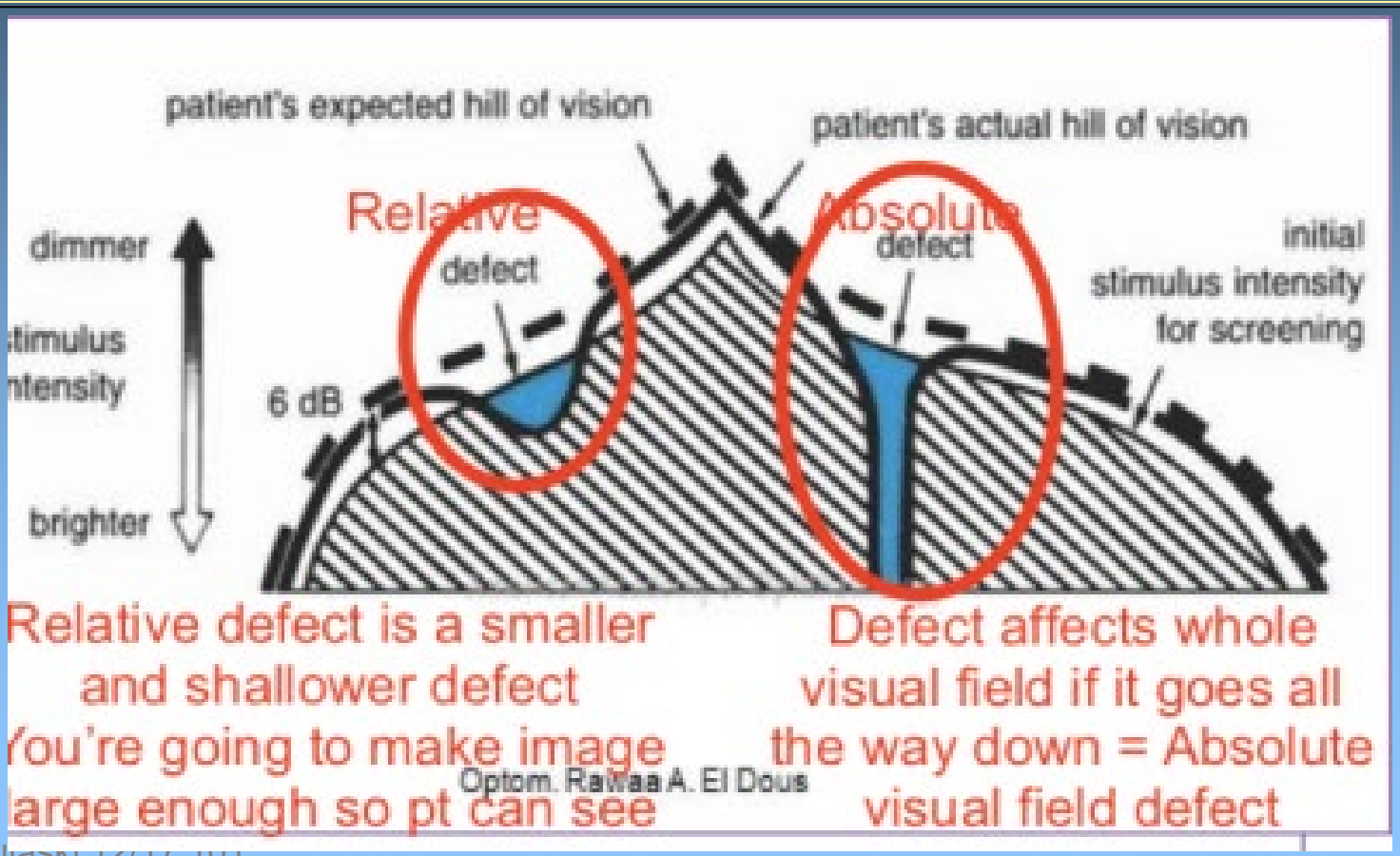
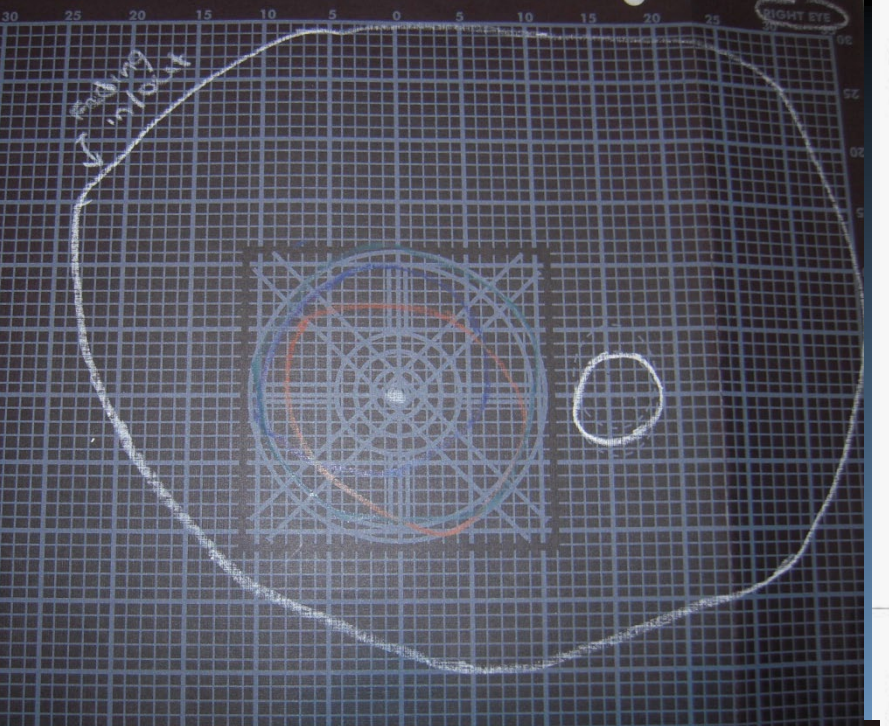
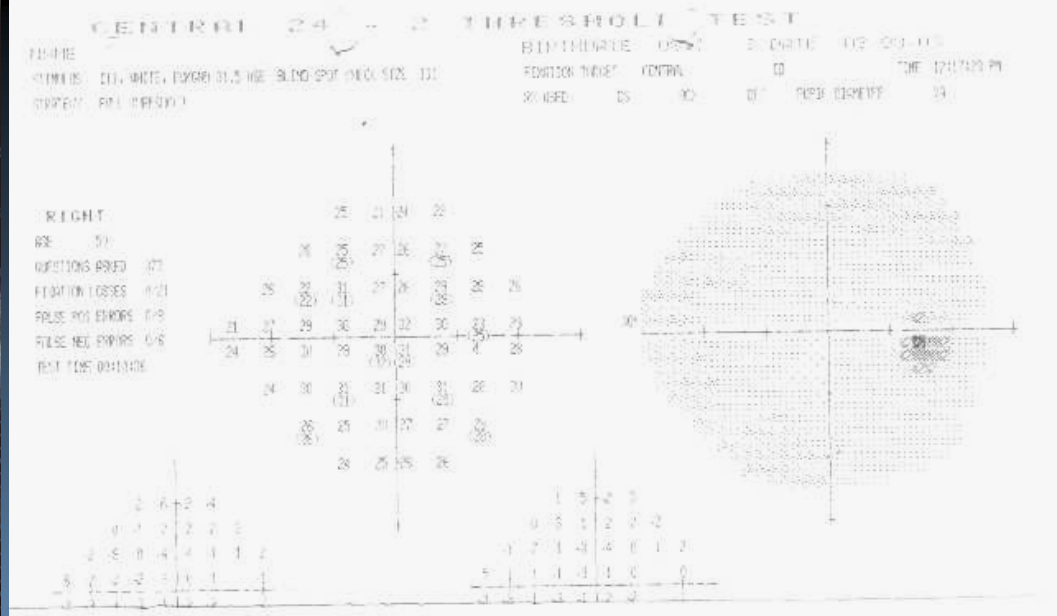


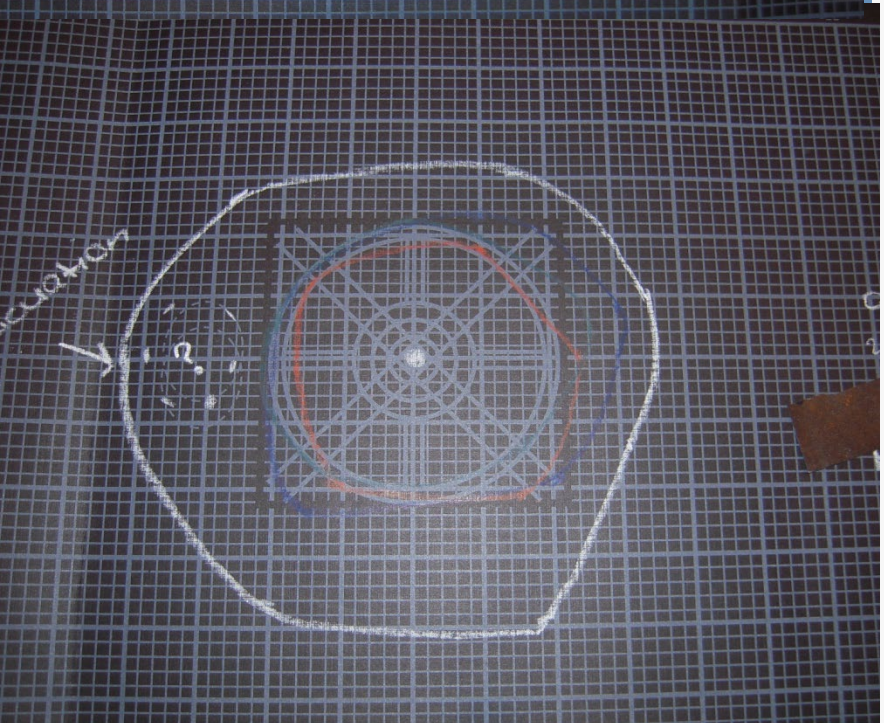

FIGURE 11-2 Peripheral testing with static perimetry is time-consuming under both quantitative and qualitative strategies, as this example of a postchiasmal lesion resulting in hemianopia with macular sparing demonstrates. Note that a kinetic test can be up to three times faster than a quantitative static test.

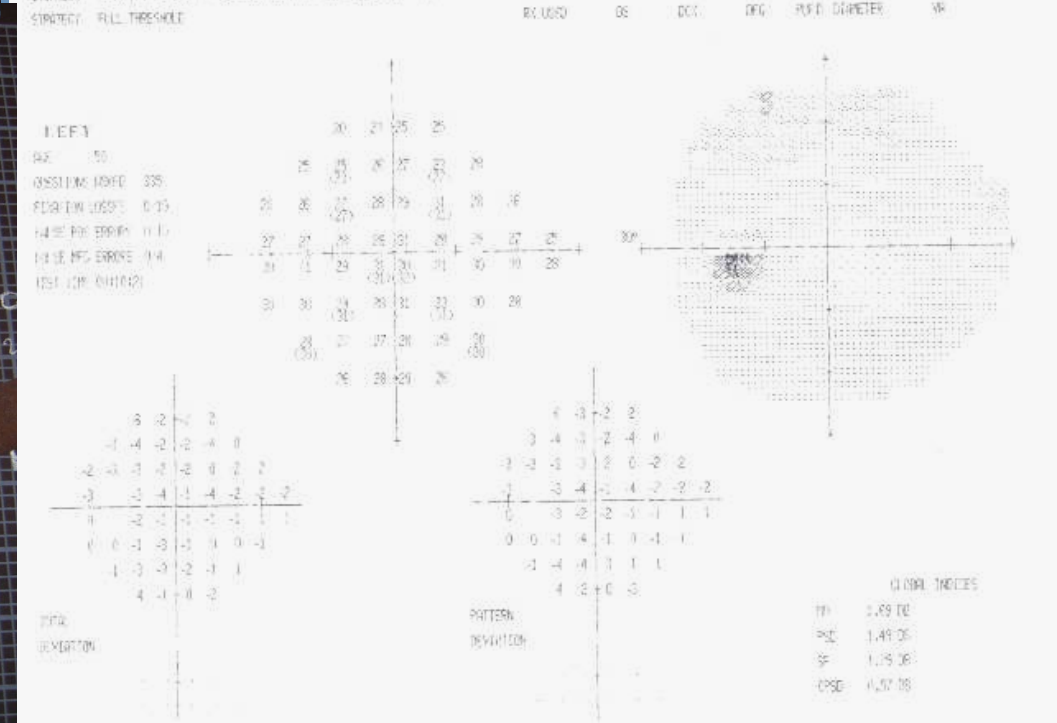
# The Visual Field
# Static vs Kinetic Field




RIGHT EYE
Fading in/out


CENTRAL 24 - 2 THRESHOLD TEST
RIGHT


fluctuation


CENTRAL 24 - 2 THRESHOLD TEST
LEFT
GLOBAL INDICES

# The Kinetic Visual Field
# Why do it?

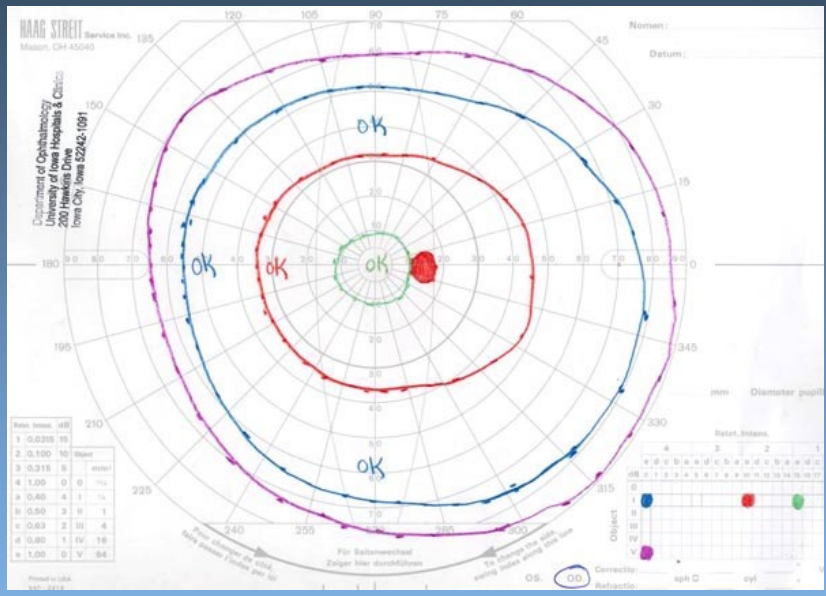
What is so unique and valuable about this field?

Why can it be used to monitor any therapies?

# The Kinetic Visual Field
# Why do it?

- Colour visual field analysis, among the most important biological visual tests known to science.'

T.A.Brombach, 1936



# The Kinetic Visual Field
# Why do it?

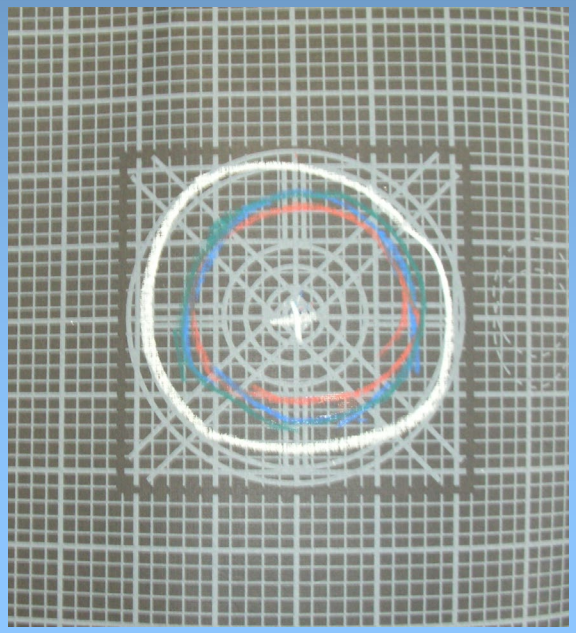
- Imbalances of the extraocular muscles are reflected in visual field charts.
- Early changes in the peripheral limits of the colour field are the first sign of impending pathology
- Fatigue appears to produce shrinkage of the fields, with one eye consistently presenting a greater amount of collapse.

Brombach 1928

# The Kinetic Visual Field
# Why do it?

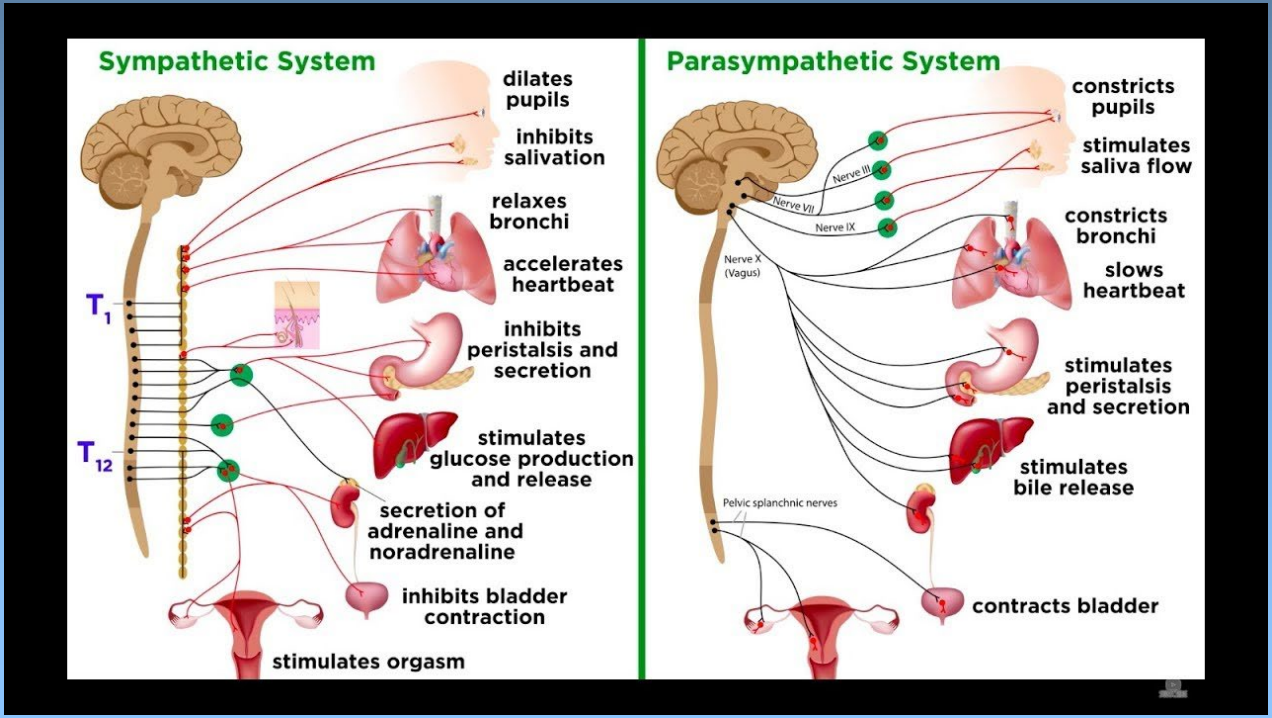
It is an extremely sensitive field measurement of visual performance and efficiency. A compressed field effects such areas as:

- Pursuit and Saccadic fixations
- Reading speed and processing
- Handwriting
- Sports performance
- Spatial perception
- Behavior



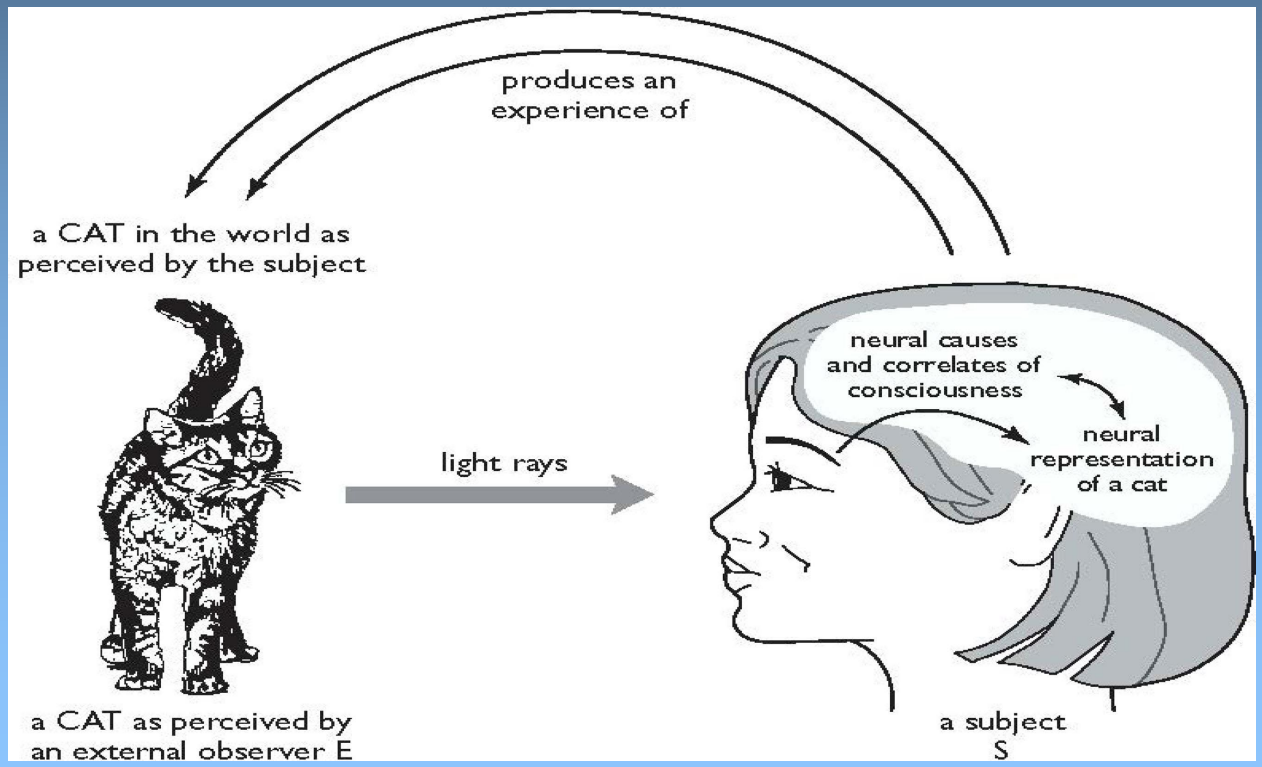
# The Kinetic Visual Field
# Why do it?

- Highly integrated with Autonomic Nervous System balance and function.



# The Kinetic Visual Field
# Why do it?

- Is a measure of capacity of the brain to process visual information and then project the image accurately into space.



# The Kinetic Visual Field
# Why do it?
# Vision is our Creation

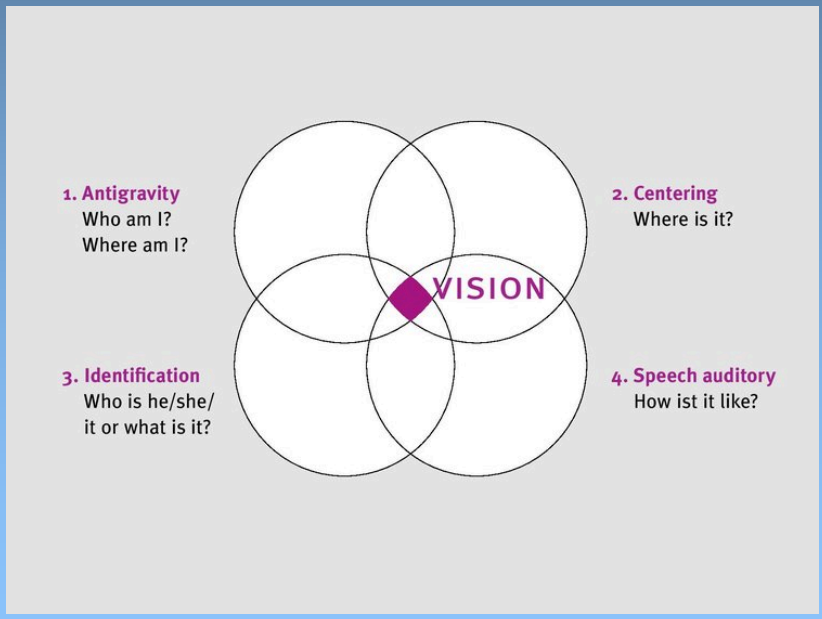
Is an assessment how much space one is able to process and interact with at any one time effecting spatial judgments.

"the mind takes raw data, creates an effigy, clothes it with forms and colors, places it in space and says I can see an object.

Vasco Ronchi "Optics, the Science of Vision

# The Kinetic Visual Field
## Process of Projection
### Skeffington – The Emergent

- It is a projection into and interaction with the world around us.
- It includes both Input and Output as an ongoing process.
- This interaction is on ALL levels of perception that includes integration of movement through Visual, Cortical and Vestibular processes.



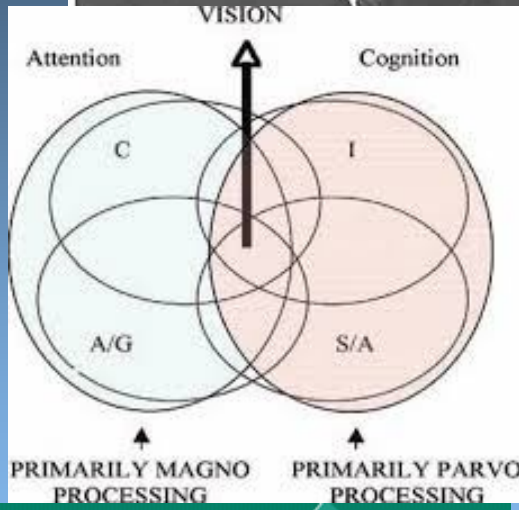
# The Kinetic Visual Field

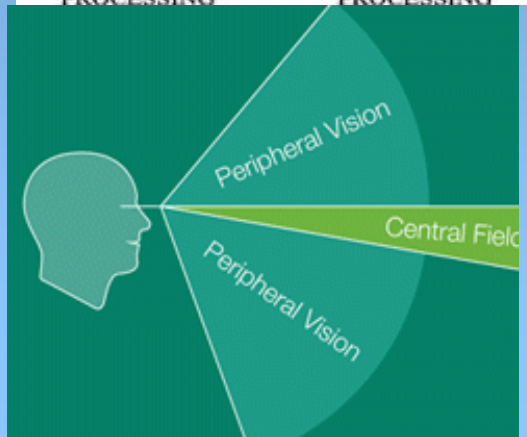
## Process of Projection

### Skeffington – The Emergent

"The "What to do" is compounded out of the experiences from ALL of the inputs of the WHOLE body … and organism.

"Stresses bring a constriction of the movement patterns. The constriction IS the visual problem."



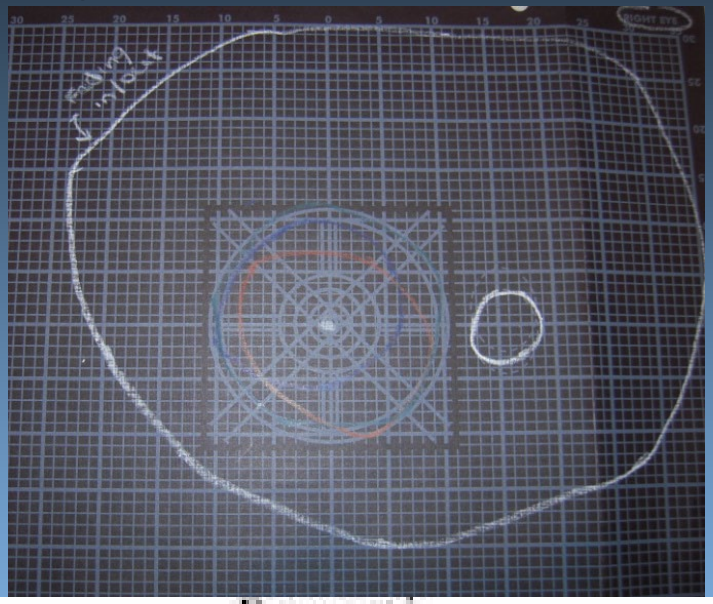



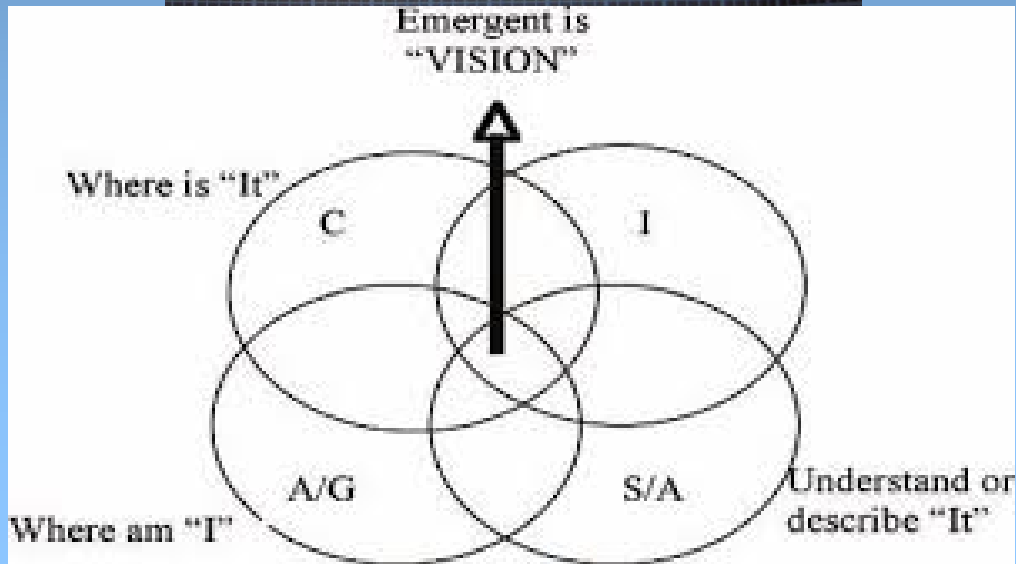

Practical Applied Optometry

# The Kinetic Visual Field
# Process of Projection

Vision is an Emergent.

- It is Projection
- It is my belief that this is what we are measuring with the Campimetric field.
- "The whole cookie" Abe Shapiro

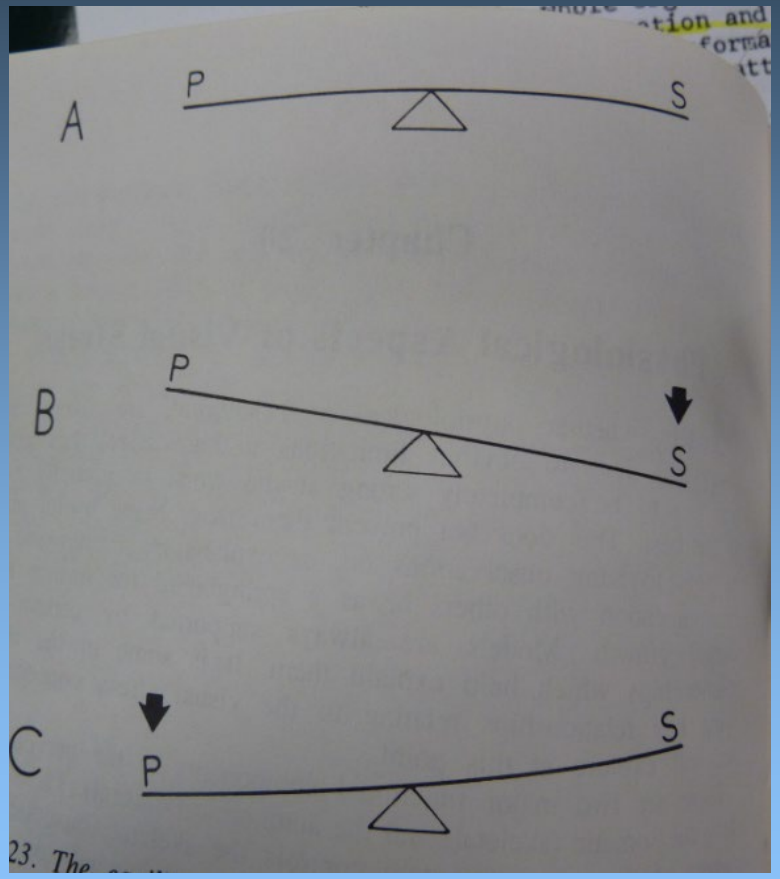




# The Kinetic Visual Field
# Why do it?

## Spitler's Syntony

- Balance in Change
- Harmonious
- Neural flexibility
- It's vitality and tone determines the efficiency and quality of our ability to live.
- It is the underlying basis for accurate Projection.



# The Kinetic Visual Field
# Why do it?

Relates to the structural and functional integrity of the visual pathways in the brain with deficits not detectable by other testing.

- Post Concussion Syndrome
- Diffuse Axonal Injury
- Stroke
- Lyme Disease
- Neurological Disease

# The Kinetic Visual Field
# Why do it?

It can be used in monitoring the success of all modalities of therapy.

- Vision Therapy
- Medical Treatment
- Neuro-chiropractic
- Functional Body therapists – PT
- Psychology

# The Kinetic Visual Field
# Why do it?

Opening a field is the key to overall wellness and accurate integration with the world and people around us.

It is the most important measurement you will do as a clinician!

# The Kinetic (Functional) Field

Questions and Confusion

- Blind spot enlargement. Is it edema
- Small Functional Field. Is it Tunneling

# The Kinetic Visual Field Interpretation

## Blind Spot

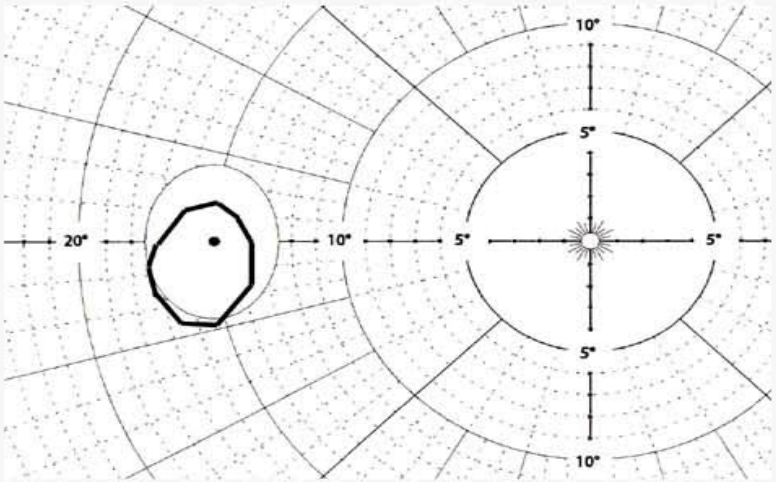
- A very important measurement
- Cannot be measured in severely compressed fields
- Different from glaucomatous field
- Can be 2-5x normal size
- Often associated with reading problems
- Often associated with brain trauma
- Helps determine when to stop therapy

# The Kinetic Visual Field Interpretation

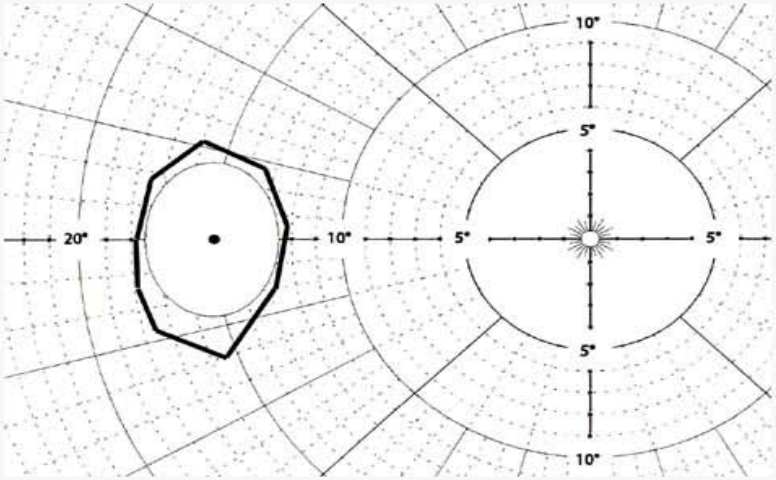
## Blind Spot Enlargement

- Optic Nerve
  - Edema, Atrophy, Traumatic Neuropathy
- Cortical
  - Anomalous projection
  - Misplaced or Torqued

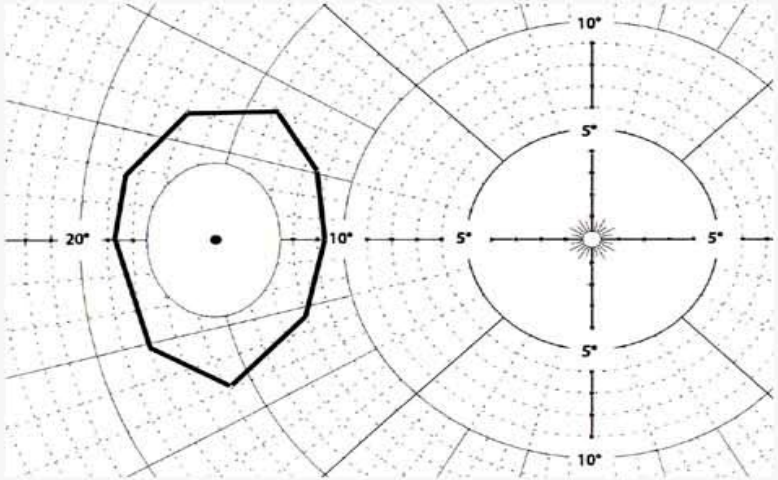
## Normal :



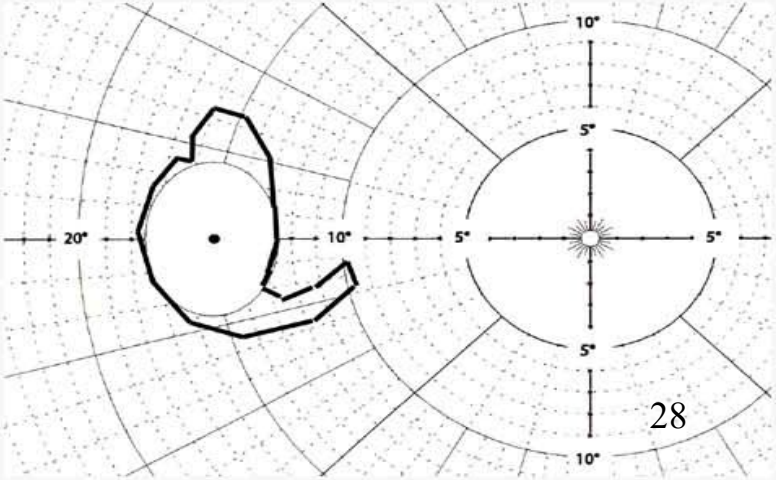

## Large :



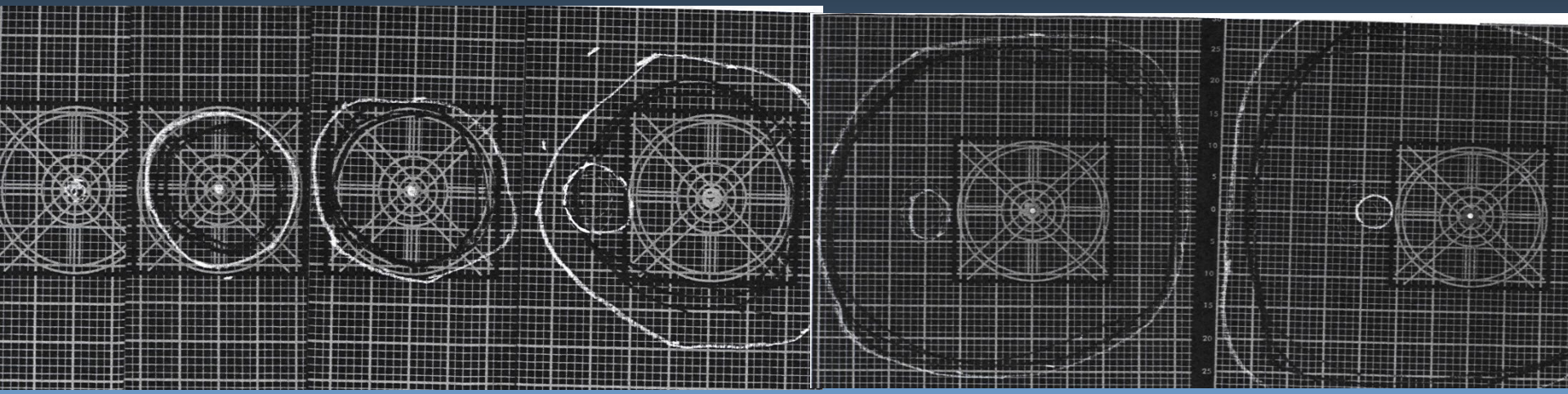

## Larger :

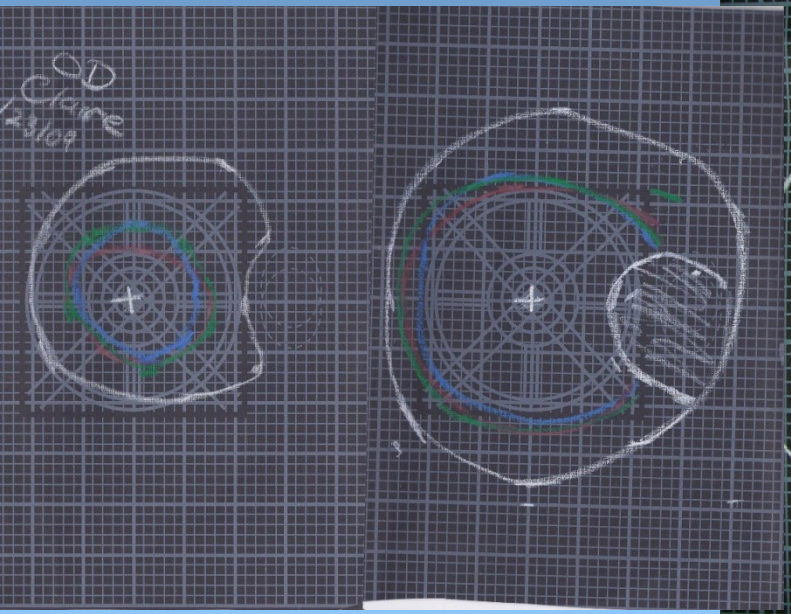


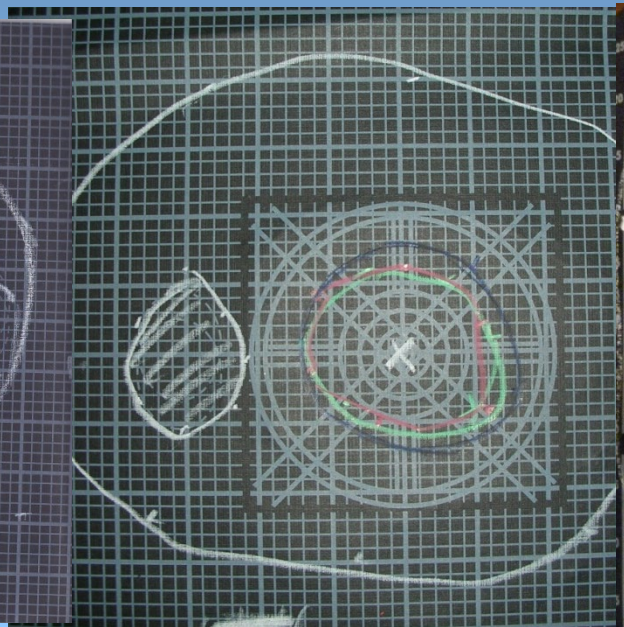

## Irregular :

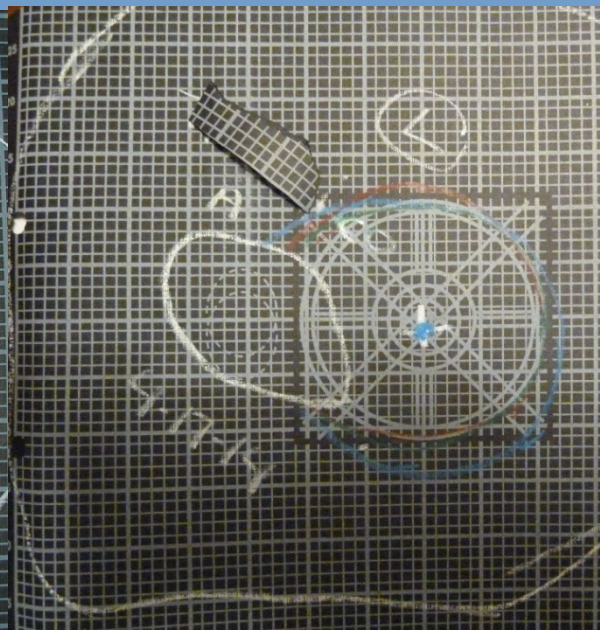


# The Kinetic Visual Field
# Blind Spots





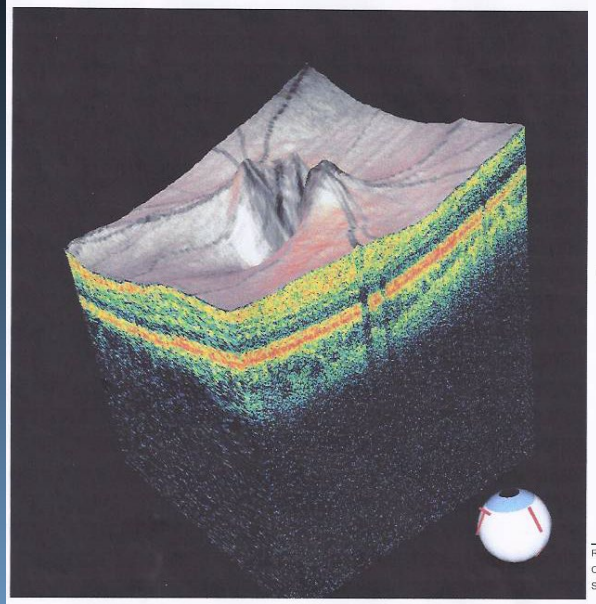


# Blind Spot Enlargement Traditional

## Edema as the cause of functional Blind spot enlargement

- But why is it that we do not see it on retinal exam, do not detect it in a conventional field test and see no signs in OCT testing?
- How is it that a huge blind spot can change improve so quickly (in a matter of a few days) with our treatment protocol? Papilledema changes over many weeks.
- Why is it that the more constricted the field the larger the blind spot?

Operator:
Disease:
Gender: M
ID: 46083

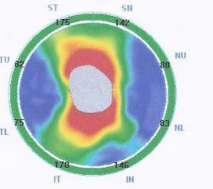


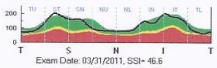
Physician: PULASKI OD, JOHN
Operator:
Disease:
Gender: M
ID: 46083
Exam Date: 03/31/2011
DOB(age): 10/14/1979 (31)
Ethnicity: Caucasian
Algorithm Version: A6, 1, 0, 4

OD

GCC Significance

Optic Nerve Head Map





Exam Date: 03/31/2011, SSI= 62.9

Exam Date: 03/31/2011, SSI= 46.6

| RNFL Parameters | OD | OS |
|---|---|---|
| Avg. RNFL | 119.29 | 165.43 |
| Sup. Avg | 119.87 | 156.12 |
| Inf. Avg | 118.71 | 172.95 |

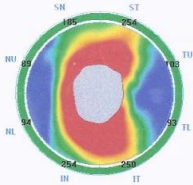
| Nerve Head Parameters | OD | OS |
|---|---|---|
| Rim Volume (mm³) | 0.709 | 1.190 |
| Nerve Head Vm (mm³) | 1.000 | 1.601 |
| Cup Volume (mm³) | 0.000 | 0.000 |

| Nerve Head Parameters | OD | OS |
|---|---|---|
| Optic Disk Area (mm²) | 1.95 | 2.73 |
| Cup/Disc Area Ratio | 0.00 | 0.00 |
| Horizontal C/D Ratio | 0.00 | 0.00 |
| Vertical C/D Ratio | 0.00 | 0.00 |
| Rim Area (mm²) | 1.95 | 2.73 |
| Cup Area (mm²) | 0.00 | 0.00 |

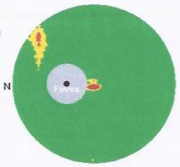
p<5% within Normal
p<5% Borderline
p<1% Outside Normal

OS

Optic Nerve Head Map



GCC Significance



| GCC Parameters | OD | OS |
|---|---|---|
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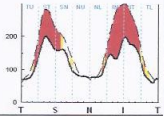
| Sup. GCC(μm) | 107.49 | 89.58 |
| Inf. GCC(μm) | 100.58 | 92.59 |
| FLV (%) | 9.572 | 0.705 |
| GLV (%) | 9.834 | 5.690 |

Solid line - OD
Dash line - OS

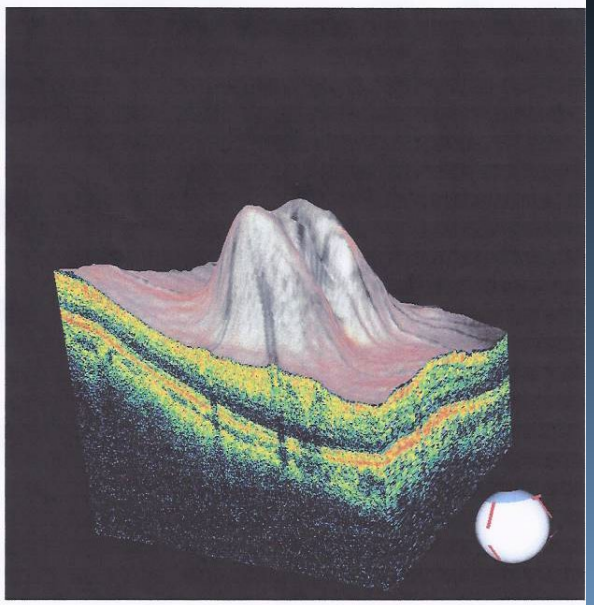


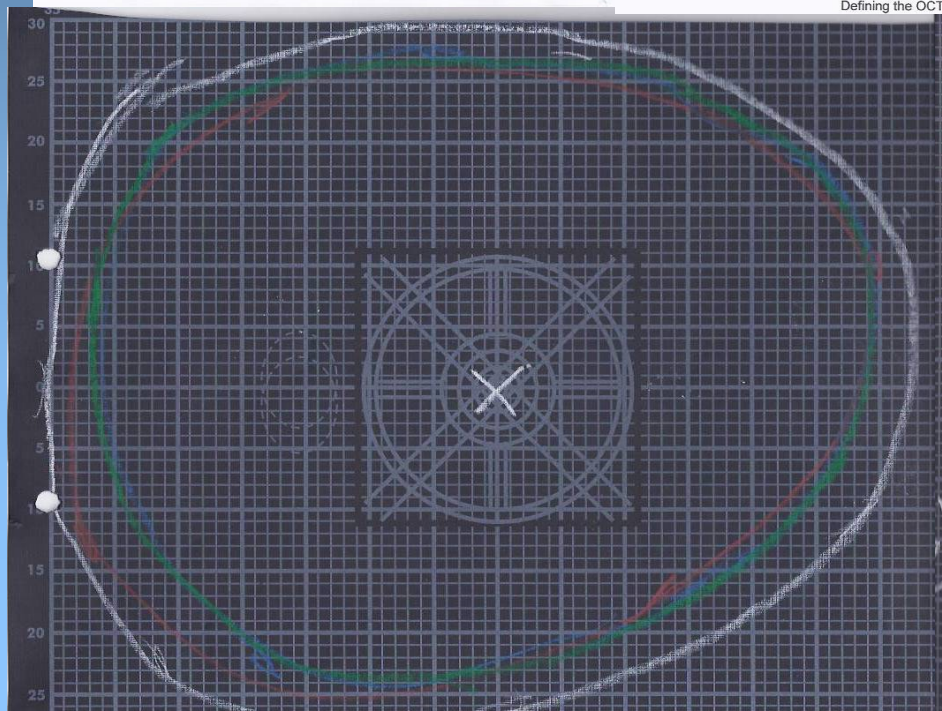
Report Date: Thursday March 31 12:34:39 2011
Software Version #6, 1, 0, 4
Comments:
Signature:

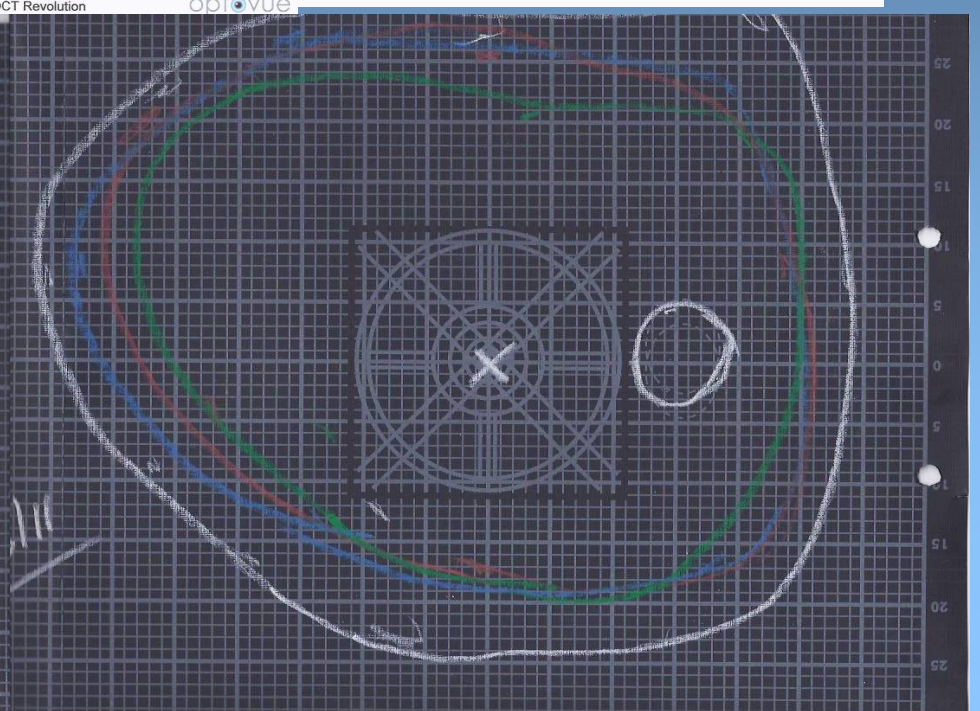
Defining the OCT Revolution

optovue

Operator:
Disease:
Gender: M
ID: 46083







# Normal Blind Spot

## Anatomically

- Retina is 32 mm from ora to ora.
- Blind spot is about 1.76mm horizontal x 1.92mm vertical or 5.5-6% of the total retina.
- Located 15.5° temporal from point of fixation and 1.5° below horizontal

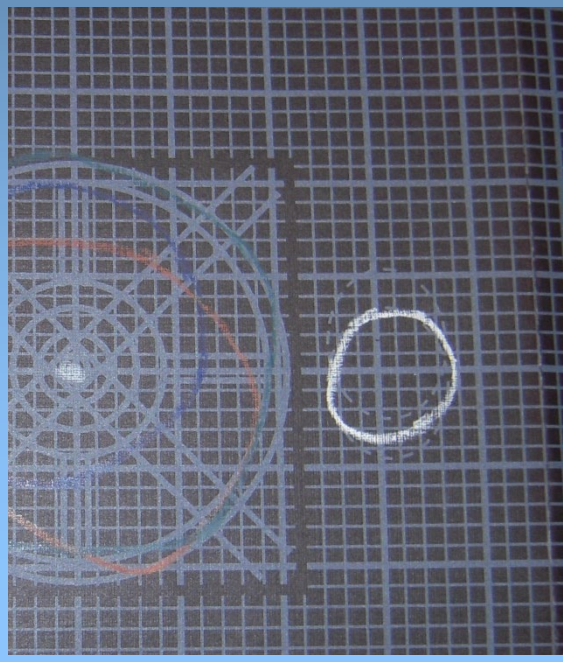
# Normal Blind Spot

## On Visual Field Plot

Vertical Oval with steep edges - 5.5° by 7.5° (20x28mm)

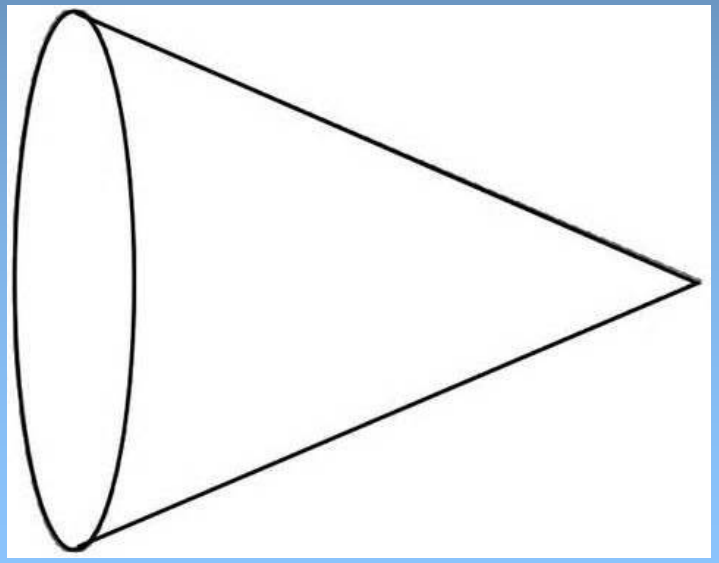
- (18mm x 25mm@ 20cm) or .71"x1"
- (96mm x 132mm @ 1m ) or 3.8 x 5.2"
- (193mm x 263mm @ 2m) or 7.6" x 10 "

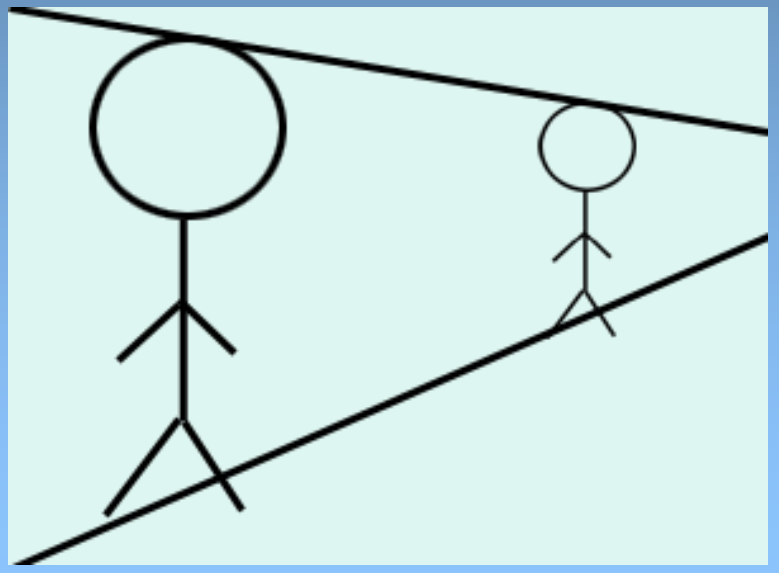
1° amblyopic zone around circumference of blind spot



# Normal Blind Spot

It is conical - It's size is only limited by how far one can project their vision. Ideally it should be the same relative size in our field.





# Normal Blind Spot

Consider the 5.5° x 7.5° or 5-6% size as you look through space. It is the size of a


Dime when looking at 8 inches


Basketball when looking at 8.5 feet

Car tire when looking at 25 feet


@ 5 miles
1.5 miles
@ 300’
32’
Sinclair
ATM

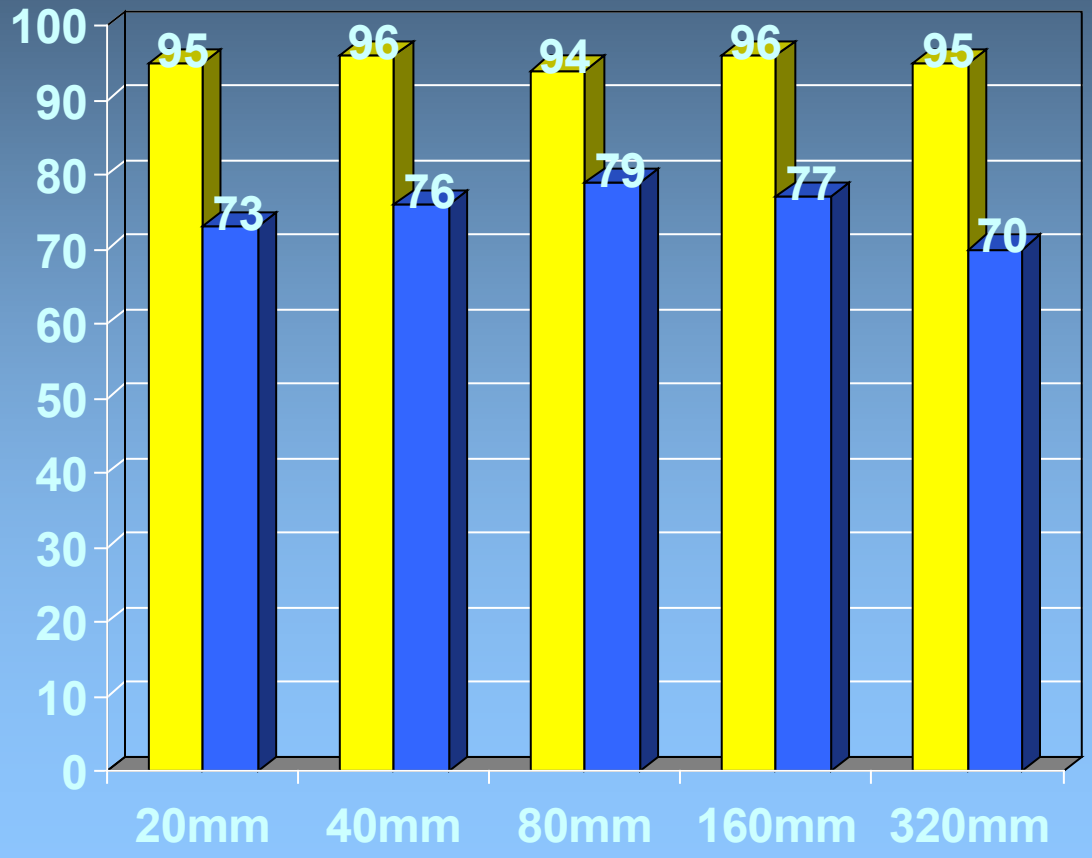
# Blind Spot Enlargement

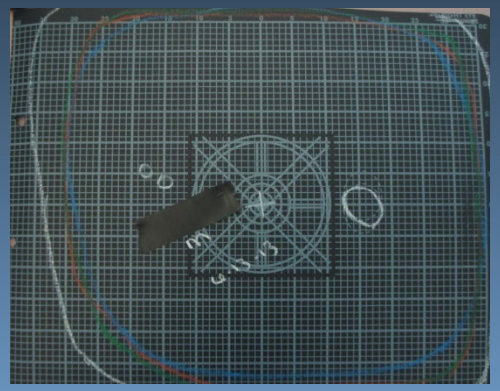
Could it related to the accuracy of

The Projected Image

# Projection Accuracy

## 8 Patients - Full fields and Blind Spot
## 20 Patients - Compressed fields
## (Pulaski 2010)



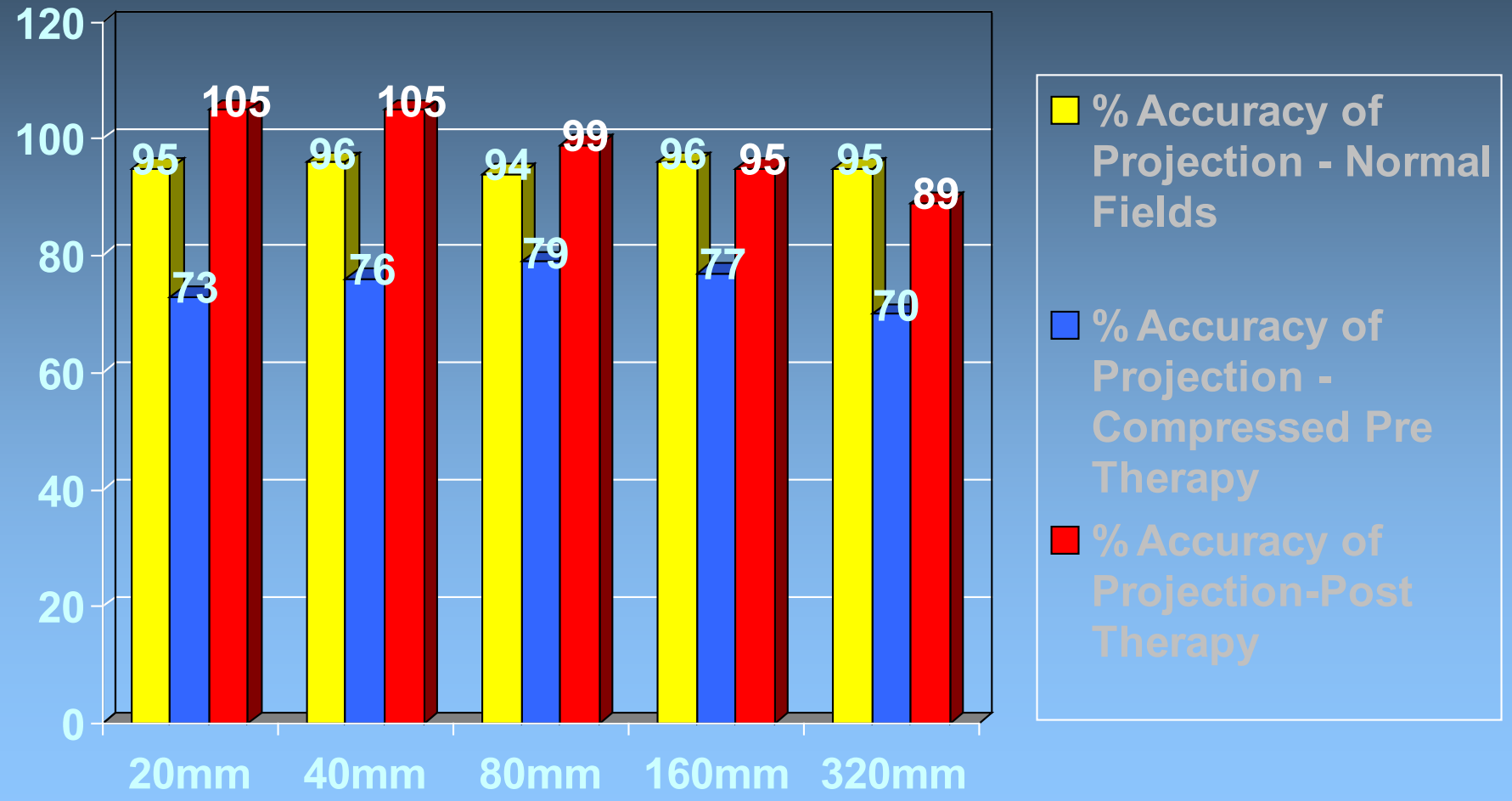



% Accuracy of Projection - Normal Fields

% Accuracy of Projection - Compressed Fields

# Projection Accuracy

## Full Field Patients Vs Compressed Field Patients - Pre/Post Therapy (Pulaski 2010)

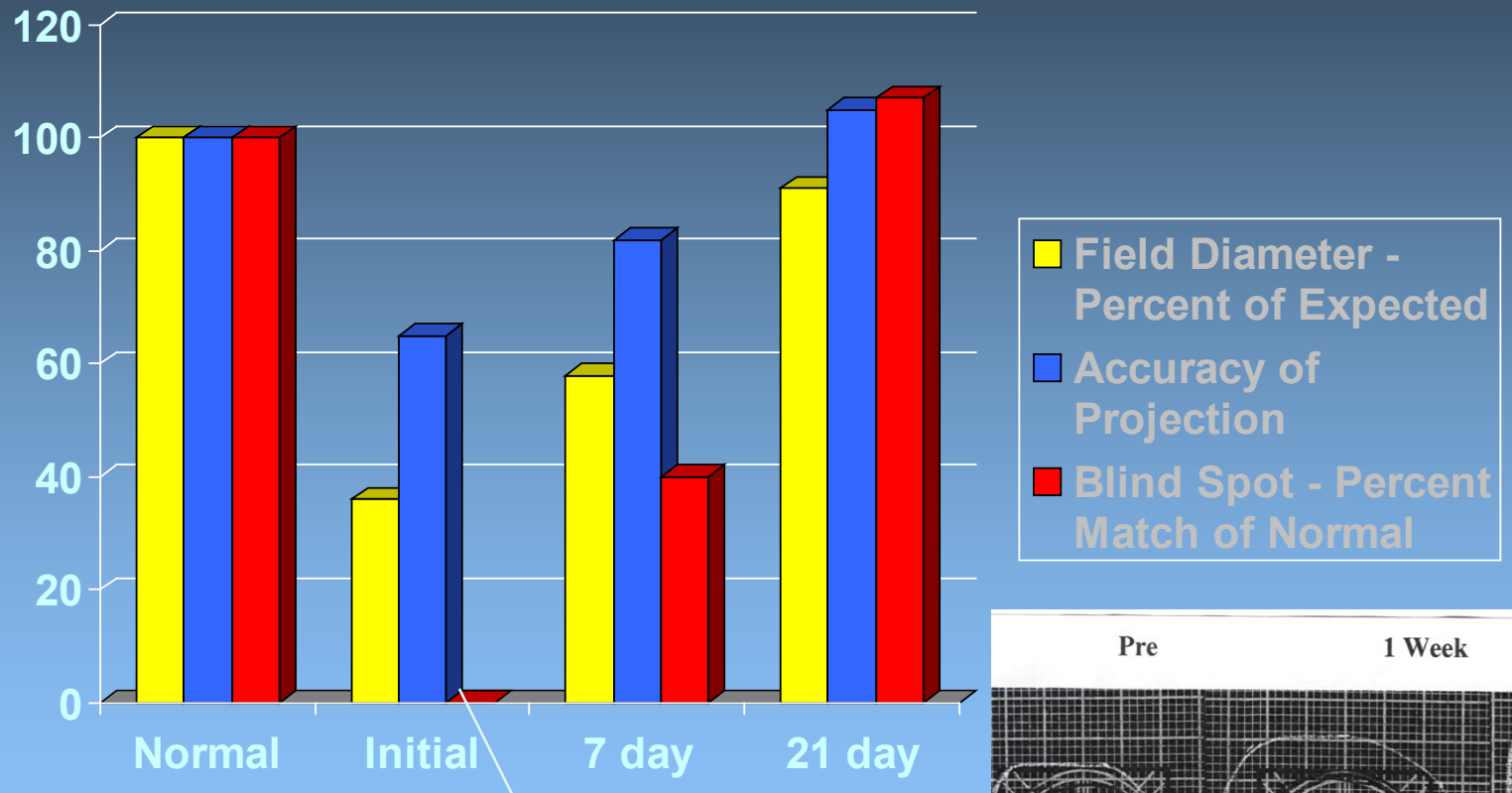


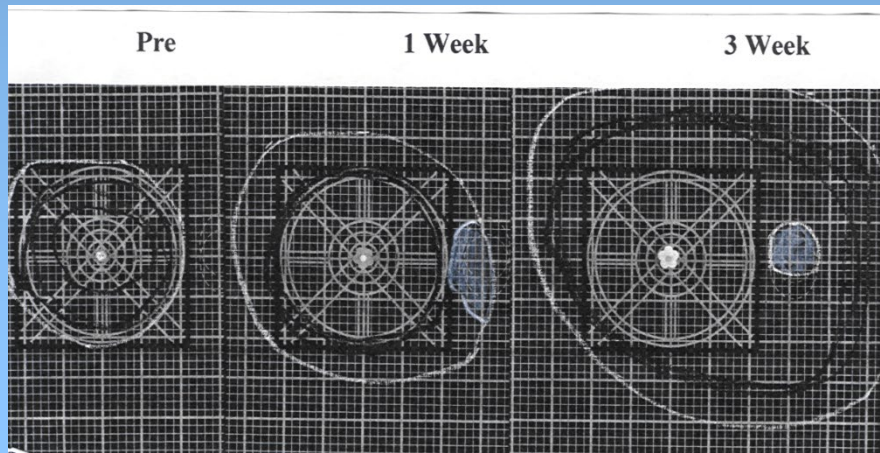
# Field Size vs Projection Accuracy

## (Pulaski 2010)

| Target Distance | 20cm | 40cm | 80cm | 160cm | 320cm |
|---|---|---|---|---|---|
| **Patients with Full Fields(8)** | | | | | |
| • Accuracy(%) | 95% | 96% | 94% | 96% | 95% |
| • Range(cm) | 19-21 | 35-40 | 72-77 | 145-159 | 289-314 |
| **Patients with "Tunnel Fields"(20) – Pre Treat** | | | | | |
| • Accuracy(%) | 73% | 76% | 79% | 77% | 70% |
| • Range(cm) | 11-18 | 23-39 | 52-72 | 74-138 | 120-308 |
| **Patients with "Tunnel Fields"(20) – Post Treat** | | | | | |
| • Accuracy(%) | 105% | 105% | 99% | 95% | 89% |
| • Range(cm) | 16-28 | 34-50 | 74-82 | 139-171 | 241-318 |

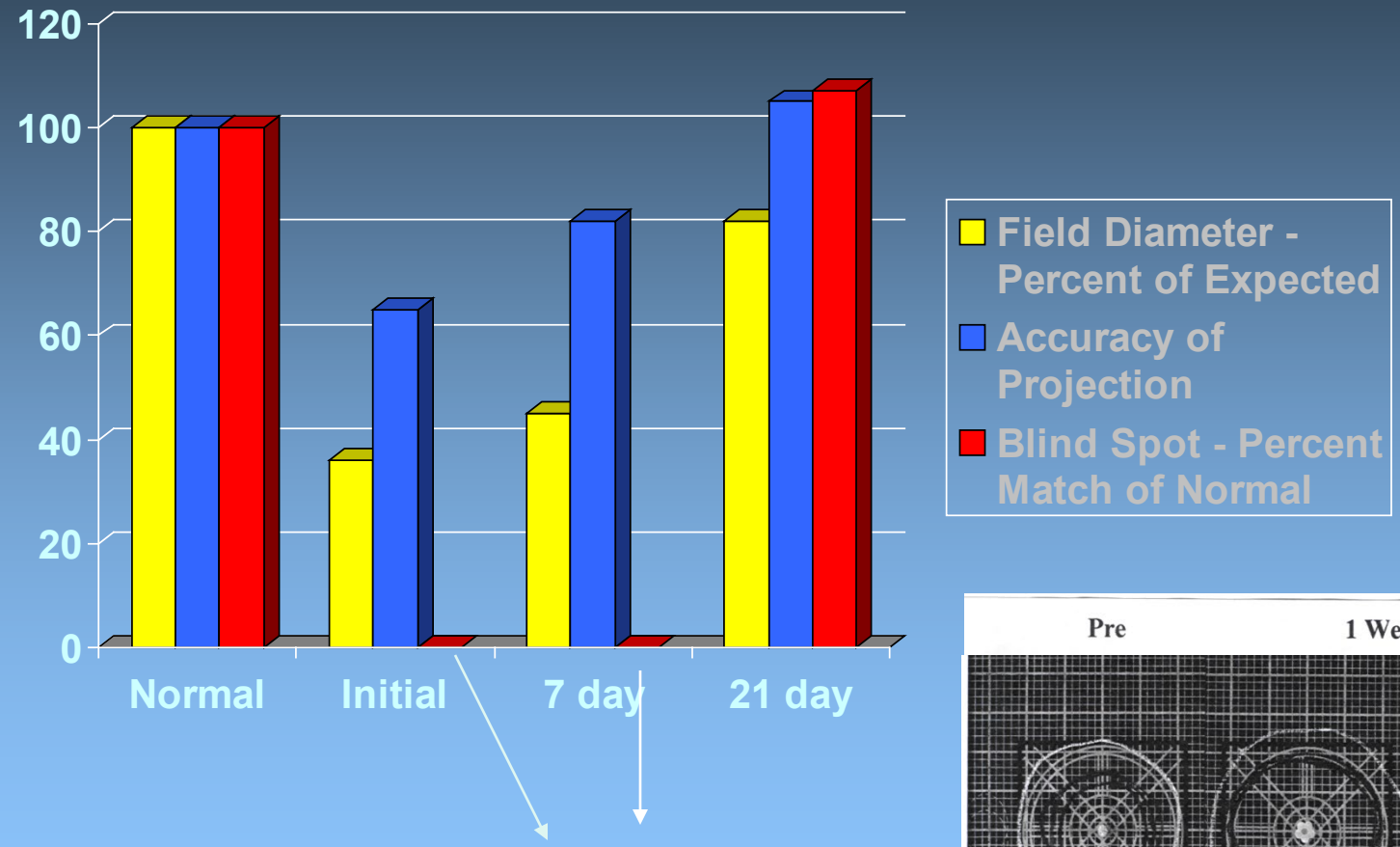
# Change in Projection, Field, Blind Spot with Syntonic Light Therapy
## Case 1 Stephanie - OD



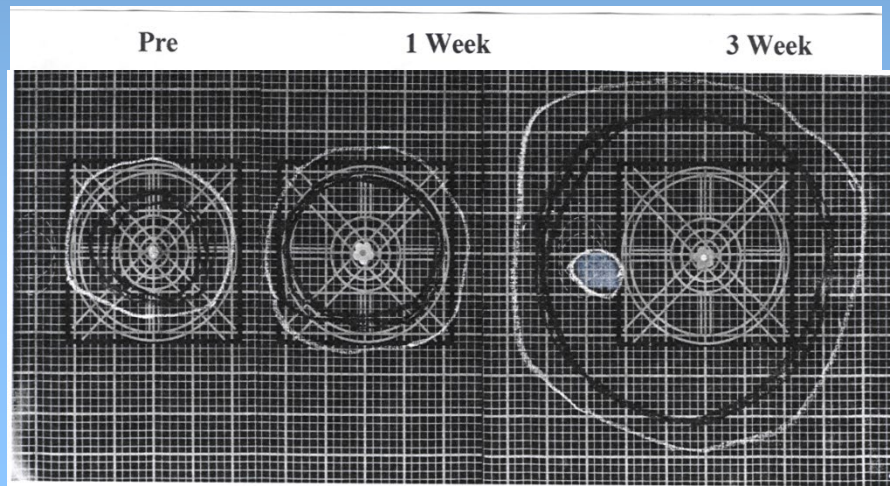



# Change in Projection, Field, Blind Spot with Syntonic Light Therapy

## Case 1 Stephanie - OS

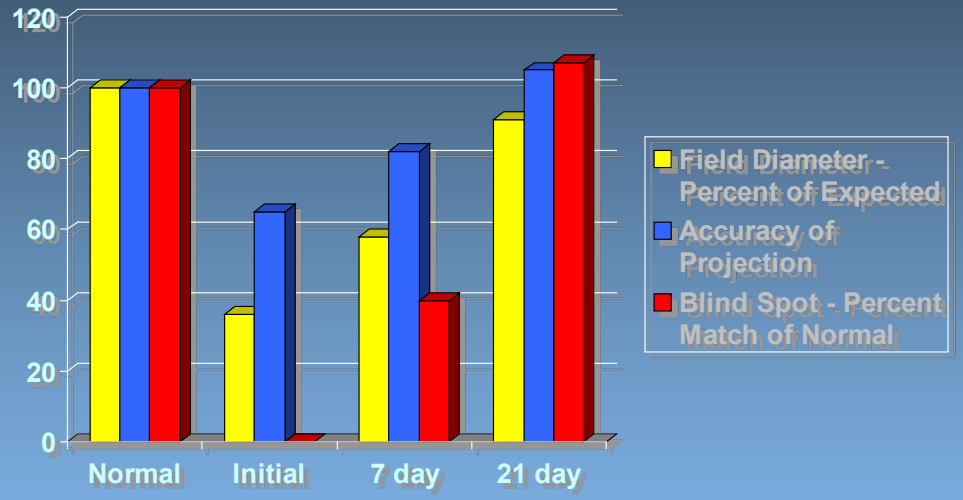


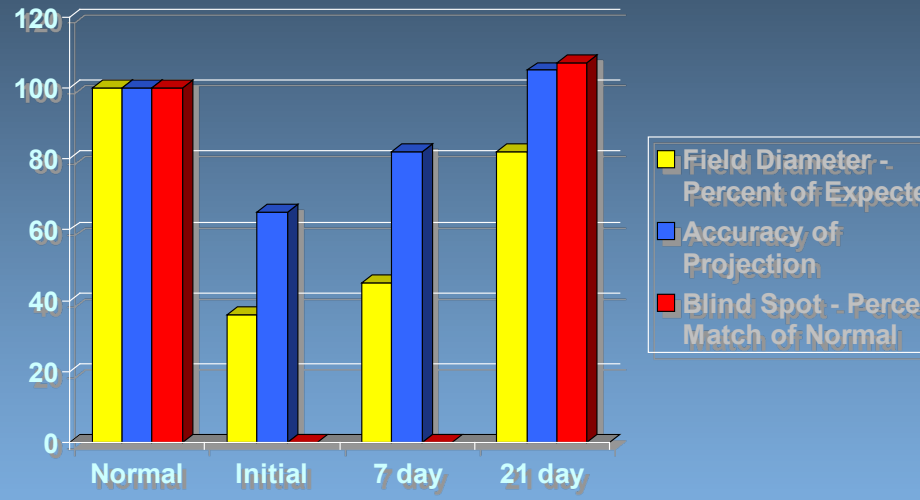

Blind spot not measurable

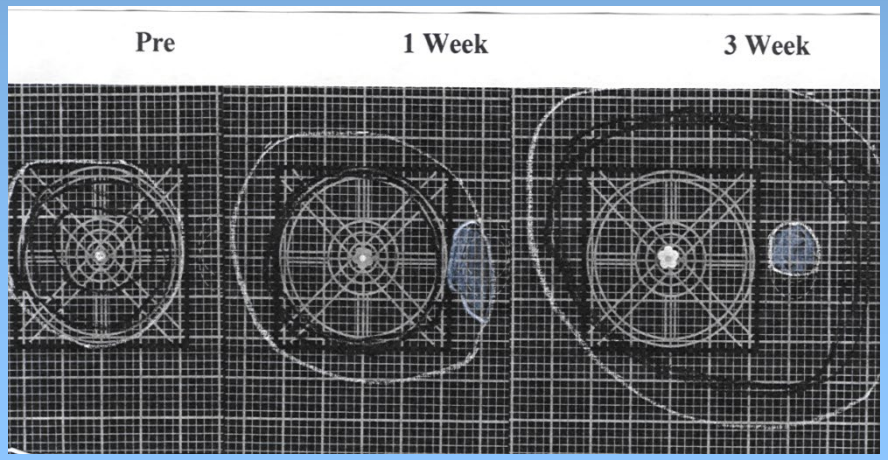


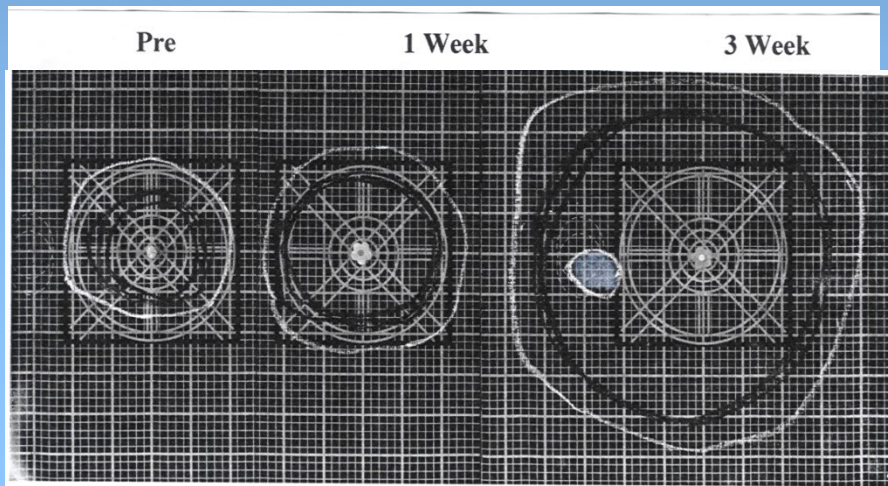
# Change in Projection, Field, Blind Spot with Syntonic Light Therapy

## Case 1 Stephanie - OU

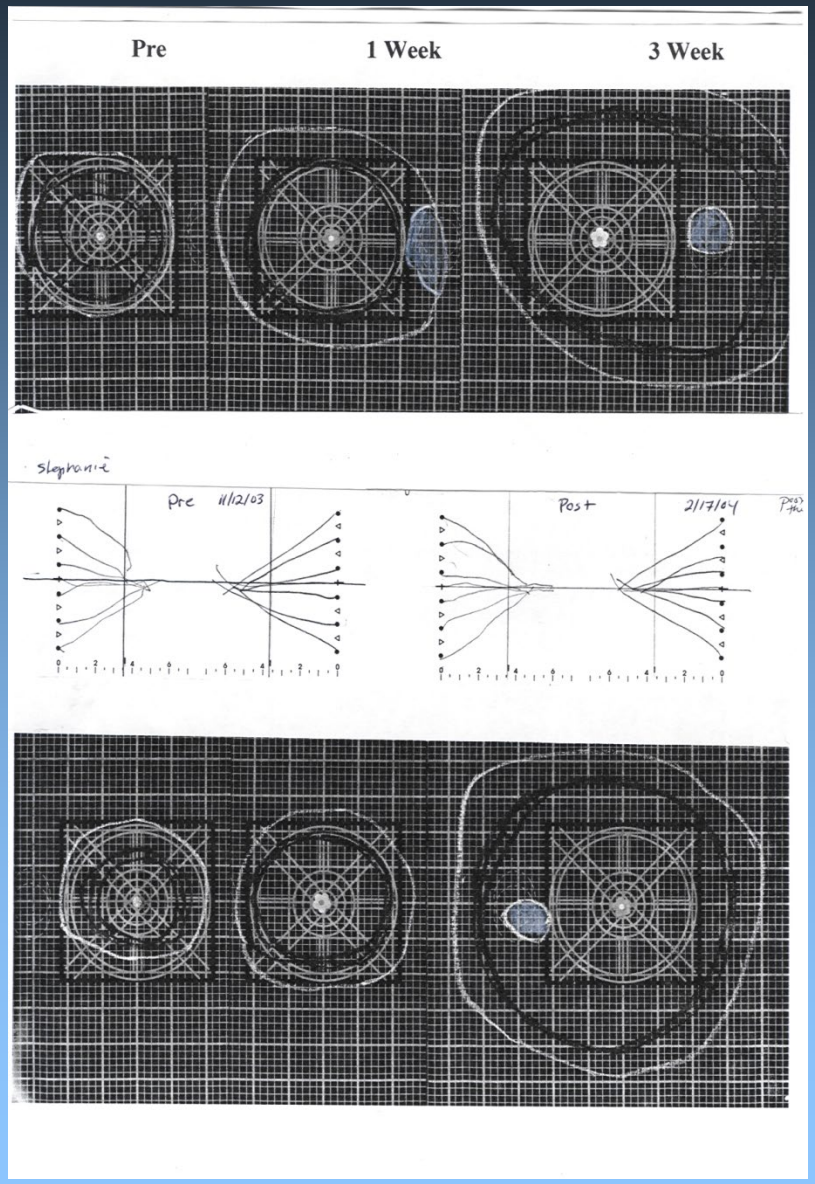


# Case 1 Stephanie



# Vision as a Process of Projection
## Spatial Compression

- Consider Tangent screen at .5m 1m and 2m. Note that the further out one measures the smaller the field.
- Consider the Projection results.
- Consider Streff's statement that we are pulling distance in as we compress space.

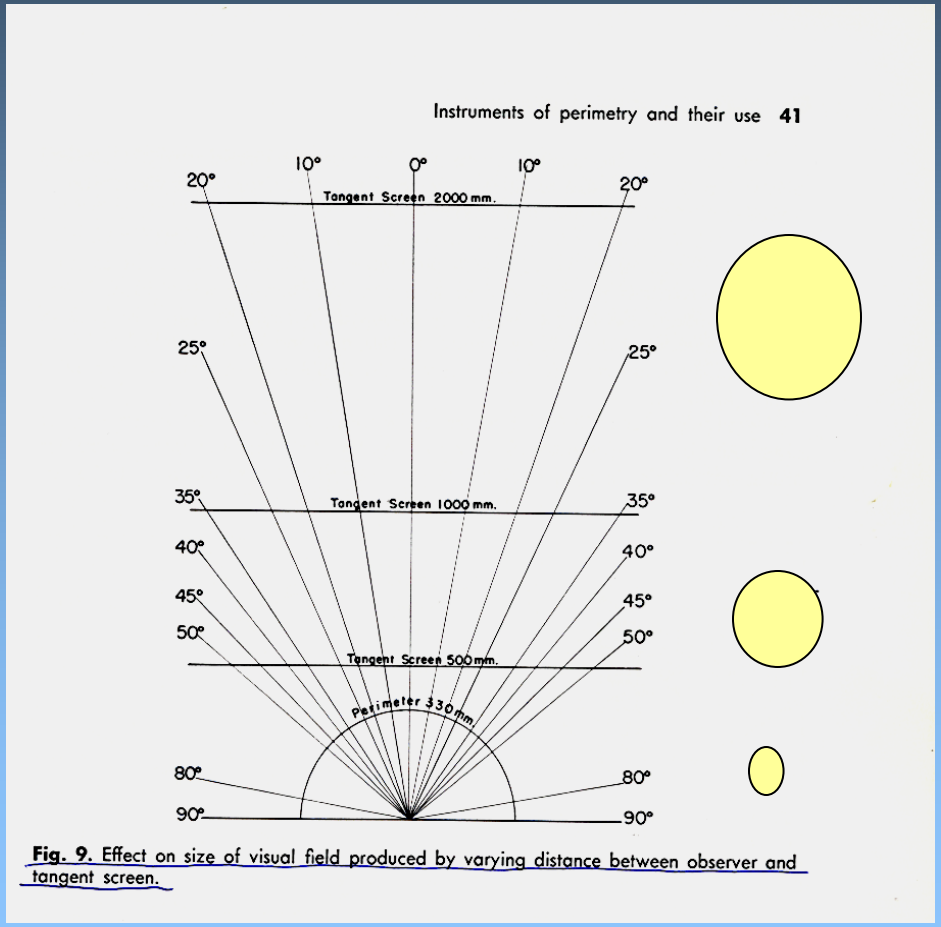



**Fig. 9.** Effect on size of visual field produced by varying distance between observer and tangent screen.

# Kinetic Field Contraction

Tunneling or Compression
Could it related to the accuracy of
The Projected Image

# The Kinetic Visual Field Related to Projection

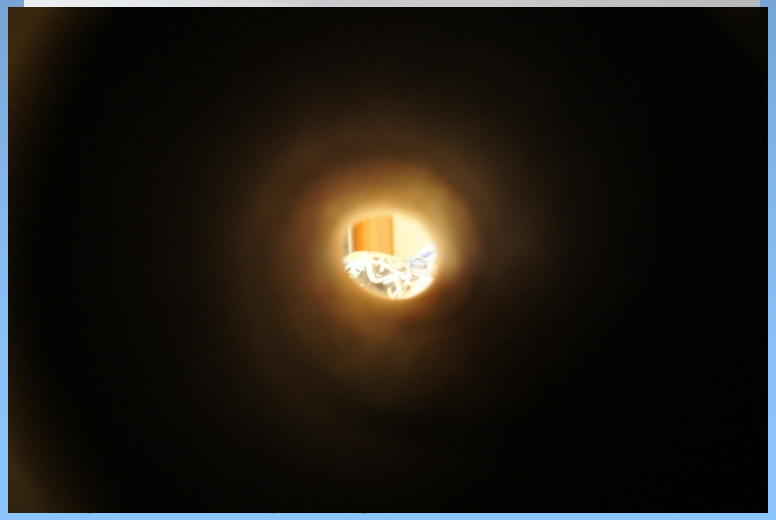
How can the patient see and function if their field is 5 degrees and inside the blind spot?

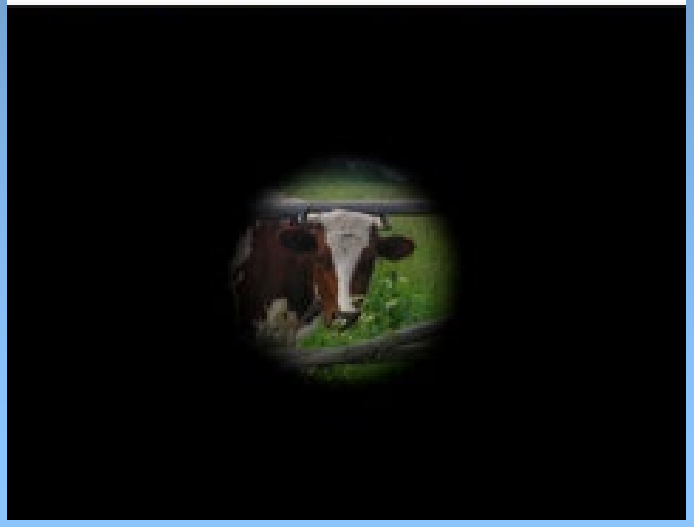
Why is the Confrontation and Static Field open?

Could it be related to the accuracy of Projection as well?

Learning from our patients.

# Tunneled Field





Stormy's gone, of course. He died before the last Yankee clipper furled her silver sails. But stories about "that good old man" are told still wherever old sailors gather. Just where Old Stormalong was born isn't important. He first appeared on a wharf in Boston Harbor. The captain of the *Lady of the Sea*, the largest clipper ship in the China trade, was signing on men. Stormy gave his full name, Alfred Bullrod Stormalong. Without looking up from his ledger, the captain wrote down the initials, "A.B."

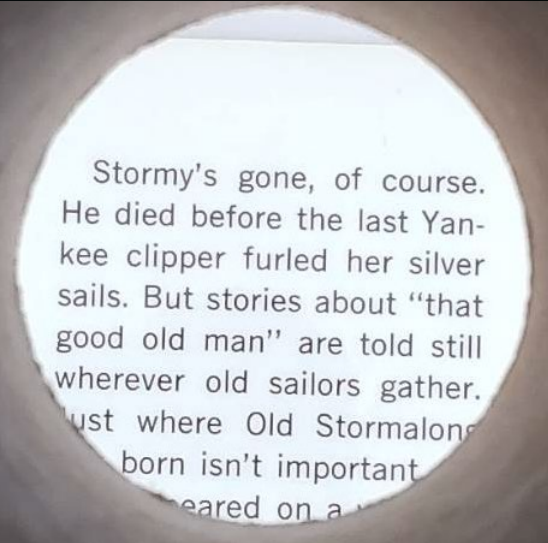
A. B. Stormalong stood five fathoms tall, which is the same as thirty feet. The captain glanced up at his new man. He whistled with surprise. "Phew!" he said. "There's an able-bodied seaman for you, boys."

Someone noticed that the giant's initials stood for just that. From that day to this sailors have tacked A. B. after their names. This shows that



Compression

Tunneling



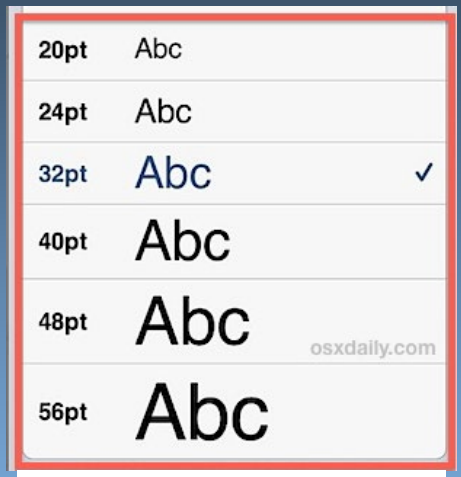
Stormy's gone, of course. He died before the last Yankee clipper furled her silver sails. But stories about "that good old man" are told still wherever old sailors gather. ust where Old Stormalon born isn't important eared on a

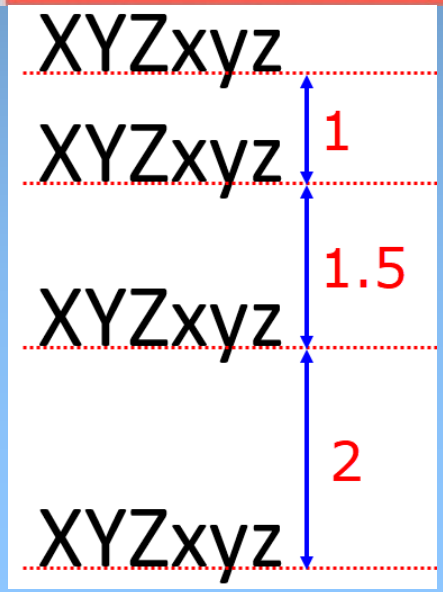

Got Talent 604


Got Talent 604
ON
0:00
0:45
0:12

# Vision as a Process of Projection
## Spatial Compression

- Consider what we do to help our patients with learning problems/post trauma
- Increase font
- Increase spacing
- Less information per page
- Binasal Occlusion
- Tints and Low plus



# Vision as a Process of Projection
## Spatial Compression

- Skeffington – The Emergent
- Streff – They are compressing Projection of space
- Shapiro – Projection is the "whole cookie". Projection is not an aspect of vision. It is Vision.
- We can change this !!!

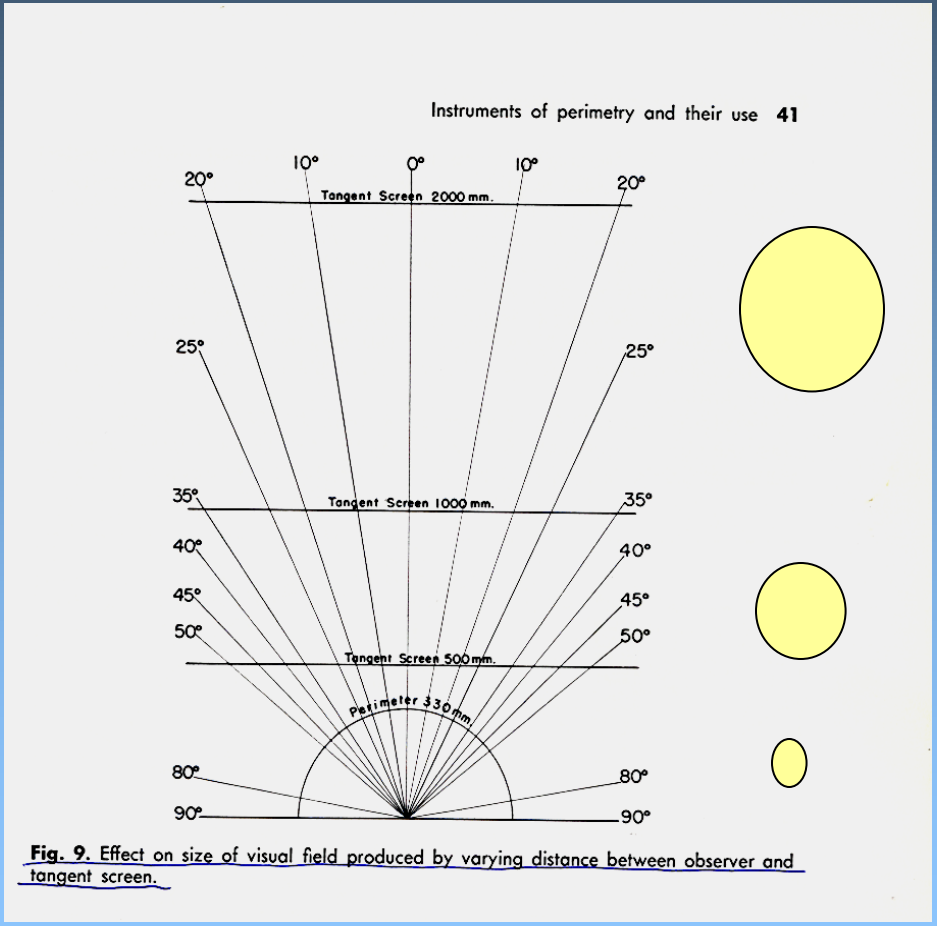



**Fig. 9.** Effect on size of visual field produced by varying distance between observer and tangent screen.

# Why Functional Field Important
## Treatment Creates Spatial Expansion

Relates to

- Acuity
- NPC
- Eye Movements
- Pupil and Accommodation
- School work
- Writing
- BI, BD, Low +
- Patient Behavior
- Sports
- TBI

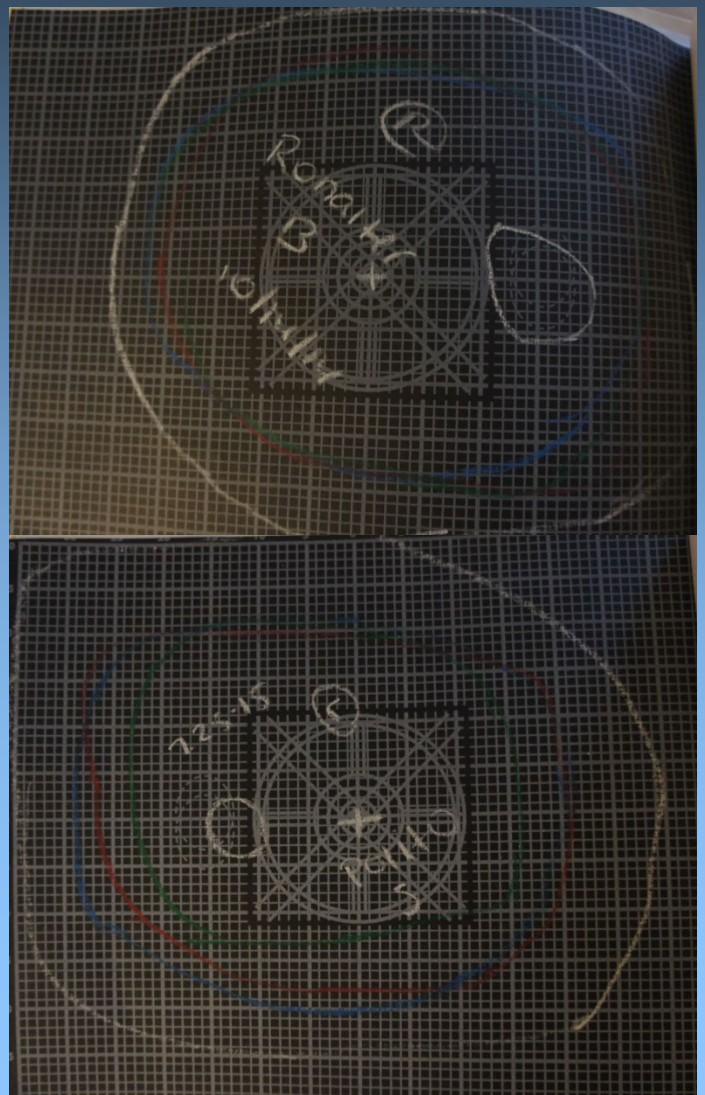
**Streff**

Are stuck at distance

Distance has become near

# The Kinetic Visual Field Conclusions

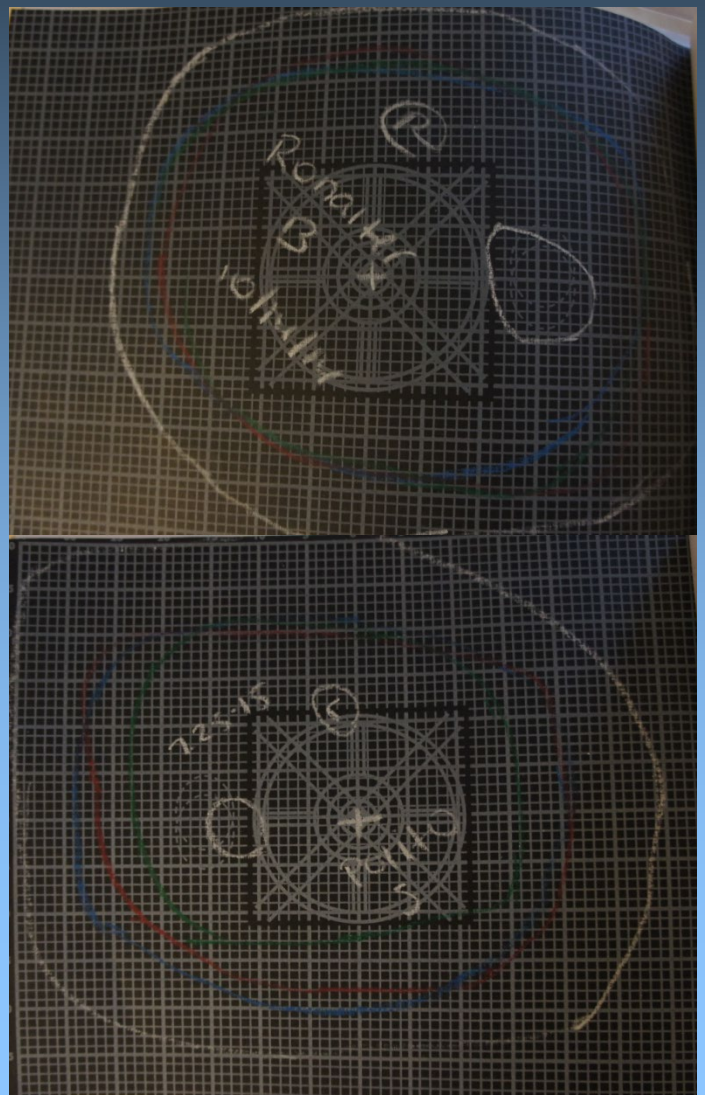
- A direct relation is found between Projection Accuracy and Field size.
- An indirect relation is found between Projection Accuracy and Blind spot size.
- Edema is not generally the cause of the blind spot enlargement.
- The small field is usually not a tunneled field if the blind spot is enlarged.
- However, tunneling is likely when blind spot is normal.



# Kinetic Field and the Process of Projection
## Conclusions

- The blind spot size is likely the most important indicator of spatial compression.

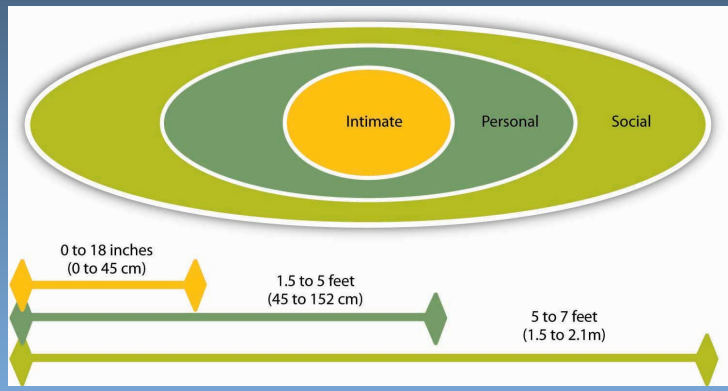
- In Syntonic treatment normalizing the blind spot and expanding the field is key to restore optimum visual functioning.



# Kinetic Field and the Process of Projection

## Conclusions

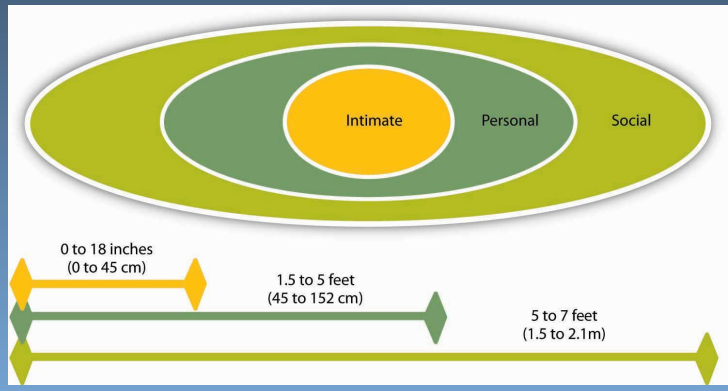
- Spatial Projection relates to all aspects and elements of visual perception.
- Projection includes all objects and space within the patient's usable field of vision.
- It also relates to the accuracy of all movements, the sense of self, the sense of the world emanating from knowing, acting and feeling.



# Kinetic Field and the Process of Projection

## Conclusions

- Tunneling may be an acute form of compression. Streff syndrome, complete collapse.



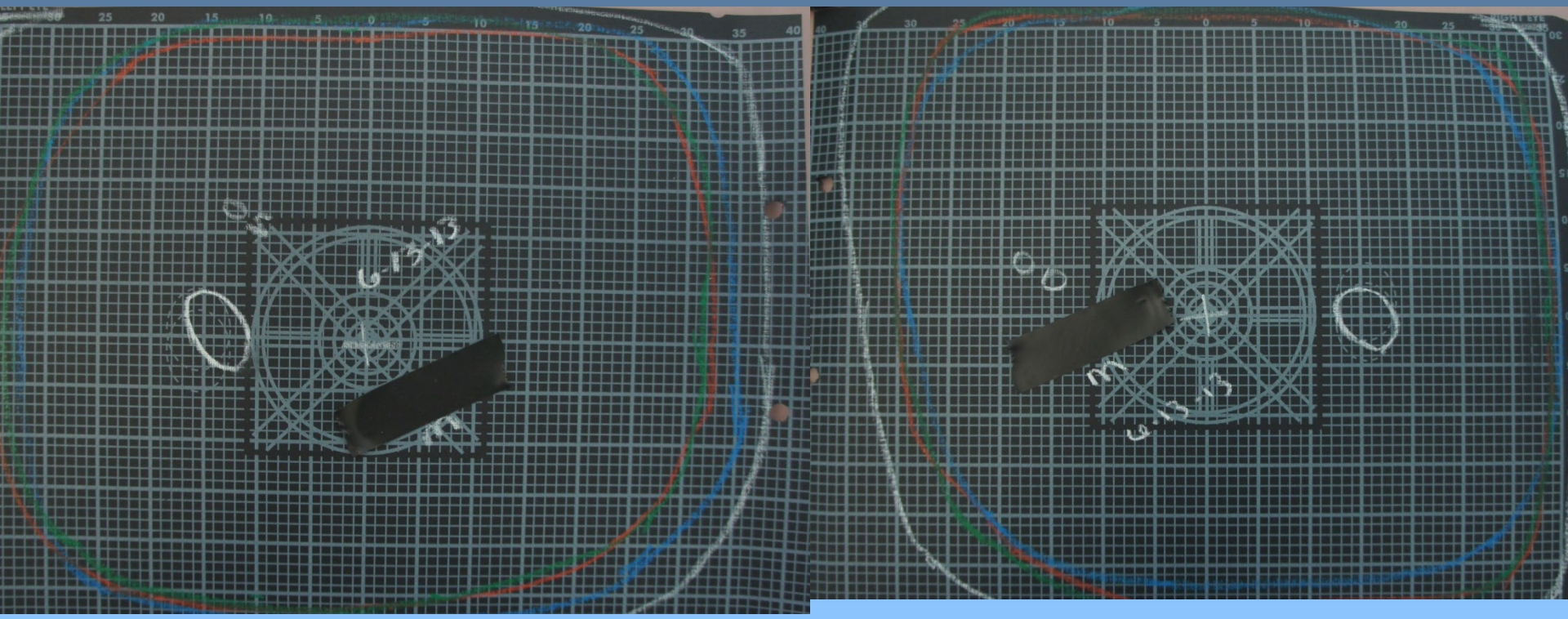

- The vitality of the ANS, the genetic make up and developmental experience are key components in accurate projection and therefore the ability of the human being to interact fully with space and the environment around them.

# General Considerations

- If peripheral fields are not within normal limits, VT results are greatly reduced

- If fields are normal in size but blind spot is enlarged, results will not hold unless the blind spot is normal size.

# The Kinetic Visual Field
## The Normal Visual Field



# The Kinetic Visual Field
## The Abnormal Visual Field