

# Thinking outside the box ....

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# Vision is the outcome

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- Infantile Vision and Growth
- Health: from heart rate to breathing
- Nutrition: toxins to free radicals
- Myopia control
- Use abuse theory of vision
- Environment
- Norms ...fact or fiction
- How do we affect outcome ?



## Infantile Growth ...changes perspective

Growth of a child and all that impacts visional growth

From pure motor blob to visually competent individual

M-MV-VM-V

From pure motor to motorically guided visual responses

to visually guided motor movements to purely visual

the black box grows ... along with it all its experiences.



## What metals do to us ?

Experiment...

Metals change our center like many other things as well as hat we eat and what we wear.

Do we realize we are affecting everything with metalloids versus plastic?

Are we actually helping by just writing a spectacle compensating lens? Should we actually be in control of what patients wear?

Some companies you can order glasses online and a pupillary measurement is asked , are they using it correctly ? measuring it correctly ?





Aside .....

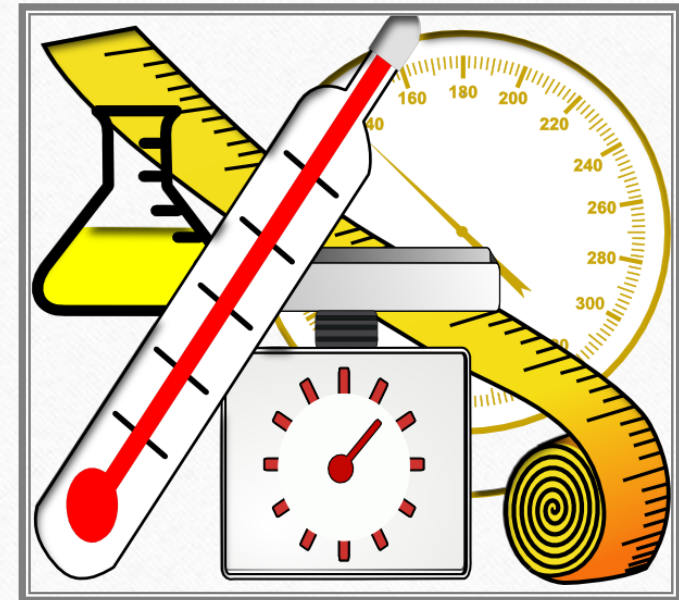
Techniques of measurement .... Occlude eyes and unilaterally measure PD then subtract 3 for intended prismatic change for near.

Visuoscopia is also done unilaterally and so should....

Retinoscopy in many cases in the presence of an eye deviation.

Most automated machinery are invalid due to eye deviations and psyche especially in the case of closed head trauma.

Visual neglect may be present as well as a visual constriction of the field almost as a PTSD effect.



## Visual Neglect

Usually a post traumatic response of the brain as it alters the mind's eye.

The visual field of both eyes is seen but the view is warped to one side.

Many patients may be seen as putting makeup on one side of their face or combing one side of their hair but when asked they do actually “see” the entire field.

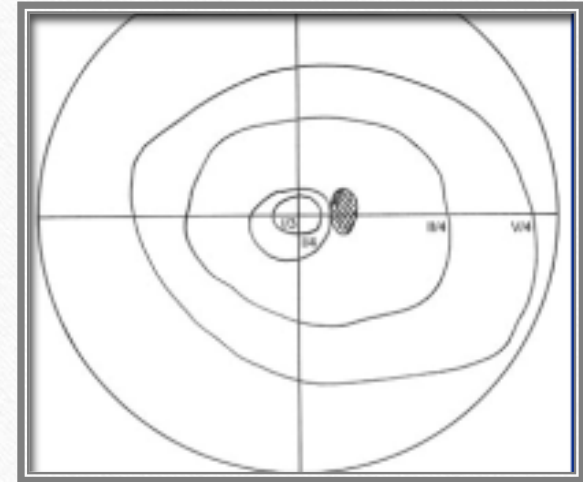




## Visual Field loss

A constricted visual field occurs with any kind of brain insult... from organic infarct to decompensation of an eye deviation.

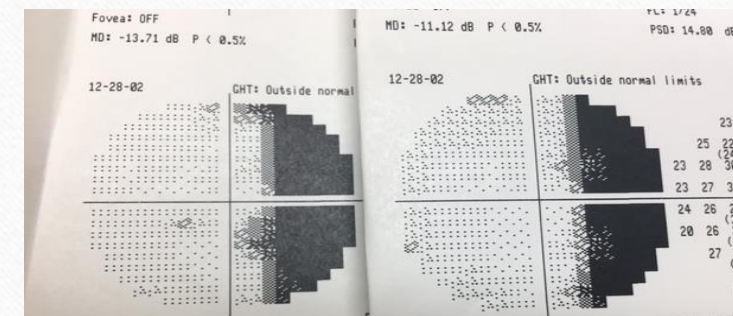
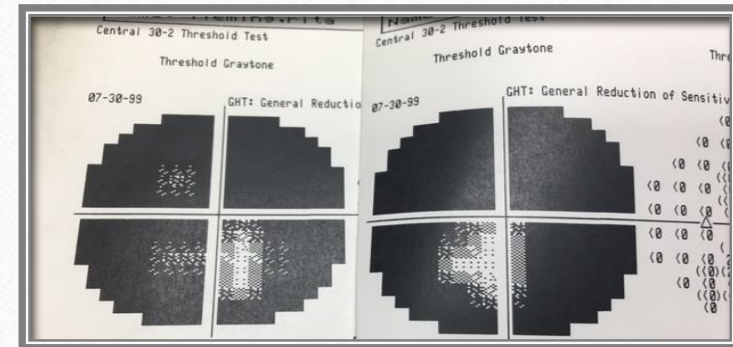
Easiest way to test this is not with regular automated fields but with a piece of graph paper.... Like a modified Amsler grid performed on a larger scale and at a 16 inch distance to calculate it back to full field....resembling an old Goldman field technique.



# Visual Field Constriction.....cured ????

Visual Field increased on automated is unheard of ... however top field was PTSD after a brain infarct and the bottom was few months later with the help of Visual Rehabilitative Therapy.

This is a patient who suffered a stroke, before and after.





## Body Posture and Body Awareness

Body posture as we all are aware can constrict the individual and change their center to pull everything in towards them versus open them up with proper posture in the homo erectus.

Usually during any visual therapy technique we overload body posture by adding balance board walking or even tip to toe walking to overload the visual system in an attempt to automate the visual response that we want. Thus rewiring the brain in a way.



## Heart Rate and Breathing....

Anxiousness causes us to constrict and pull in.

Fight to flight response is visible with bright strained response versus a dull response during retinoscopy.

Heart rate can be controlled with slow steady breathing techniques so why not learn ocular control.



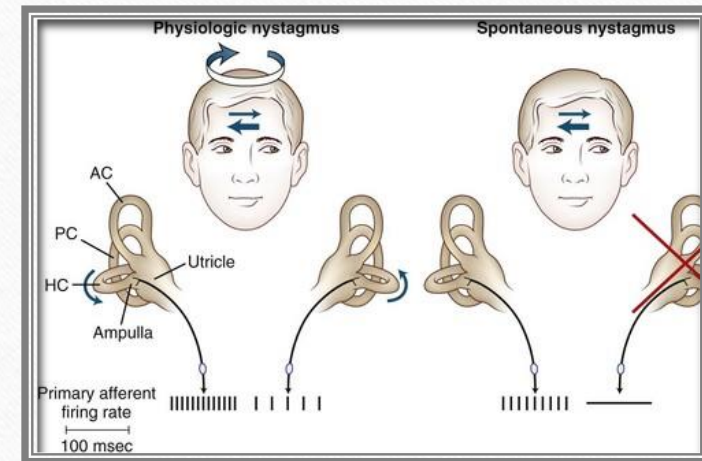


# Nystagmus and Motor overactions.....

For ex....Biofeedback helps with nystagmoid movements.  
Patients learn to control their “involuntary” eye movements.

Duane’s syndrome can also benefit from biofeedback.

Some use head posture to help them.



# Nutrition...

By products and free radicals collect in the cortex of the lens.

- \* many byproducts can be flushed out with mega doses of Vitamin C

Diabetes creates increased cortical lens opacities as well as a weakness of vascular health which can organically cause damage.

- \* consider smaller meals to decrease magnitude of sugar spike in these individuals after a meal.
- \* have the educational pamphlets or management of patients to decrease white foods intake.

Many new diets including Vegan diets are on the rise to increase health and health awareness with newer generations.





# Myopia Control

What are we doing when we add plus and minus lenses ?

We are readapting the mind to see items in their view in a different way. We see it with our minds eye, which incorporates all aspects of vision including lower levels such as figure ground effects all the way up to visual spatial world and even incorporating the view by experience to one's self or psyche.

*\*\*\*Should we actually cutting it back in an attempt to control accommodation and keep it going or should we be giving out full compensating lens prescriptions?*



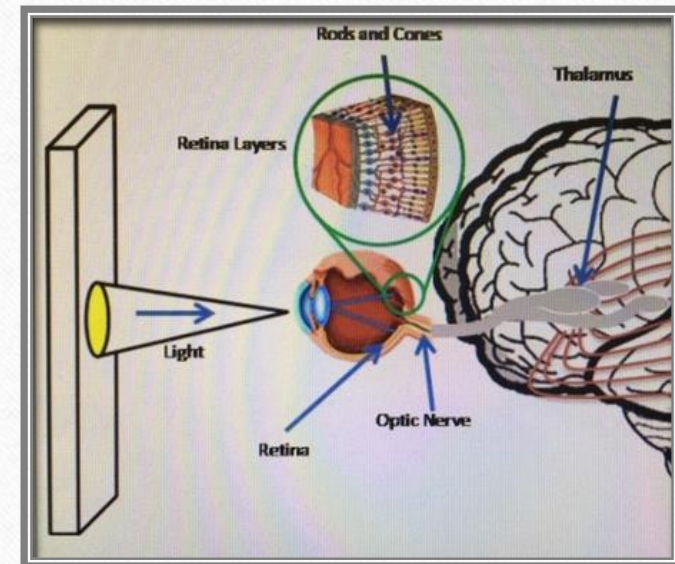
## Astigmatic compensating lenses

Javal's rule with astigmatism is only  $\pm 0.50$  extra anywhere else in the eyeball if not on the cornea.

Experimentation with automated retinoscopy on infants revealed higher amounts of cylinder found and we used that as norms to not give those compensations out so as not to embed this lens.....key word EMBED.....Duckman and Fitzgerald.

So why do we actually try to give this lens with lots of strabismics ?

Remember Visuoscopy.....you are actually performing retinoscopy on a curved retina and may find a cylindrical component that is not necessary ....consider spherical equivalent compensating lenses.



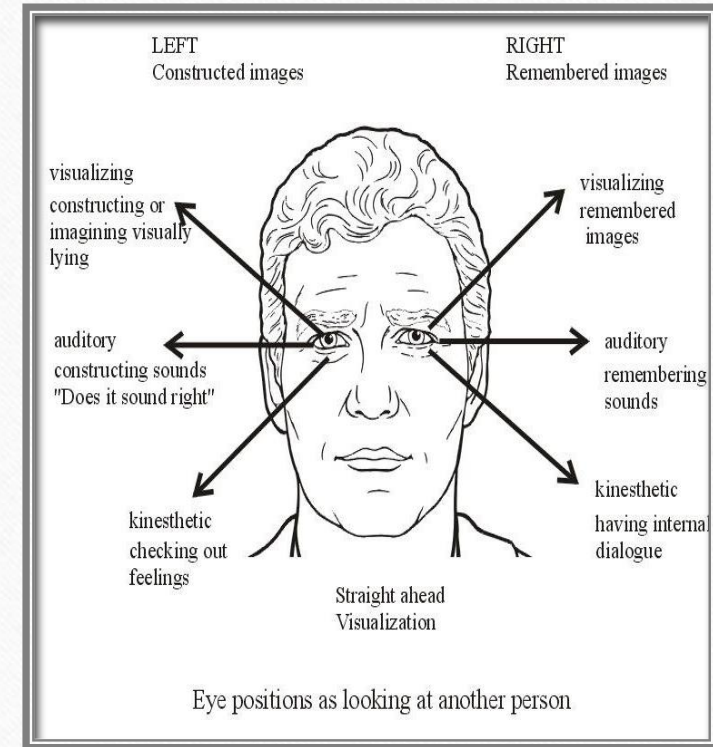


# Our eyes can be used as ... Human lie detector ???

Eye movements based on our thoughts ?

Is there something else there ???

Going back to models of vision ...always included the gestalt or psyche of the individual.



## Technology and its effect on vision

Use abuse theory added by the fact that we all do a happy dance every time something new comes out ....be it smaller screen, screen that has people walking and not being able to put it down, to computer vision syndrome terms now being used.

Back to metals and metalloids...many of us charge our gadgets by our bedside... harmful ?





## Environment and Growth versus Genes

Albino twin experiments .... Eye turn same opposite eyes, astigmatic compensation was identical in identical twins.

Eye deviations are common genetic factor in six of eight children from same mother different fathers.

Environment of decreased visual distances may have increased myopic findings.

Environmental studies on infantile growth and development ...Gesell



## Norms or theories that need to be revisited ?

Air force pilots retinoscopy findings were all slightly hyperopic and astigmatic...yet a perfect Howard Dolman stereopsis test....should we rethink the norms?

Others.....

Children ... cut astigmatism

Myopes...cut minus

Most...build plus acceptance

Eye deviations .... Treat or ignore ?

Anomalous correspondence is a trick to avoid treating

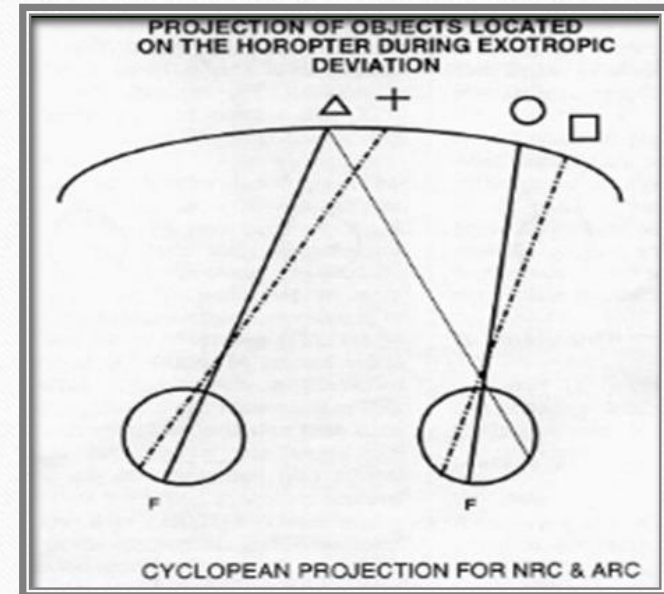




# Anomalous RETINAL Correspondence

Another incorrect term....approved norm

This is not a retinal phenomenon but a higher level or cortical one.



## Horror Fusionalis

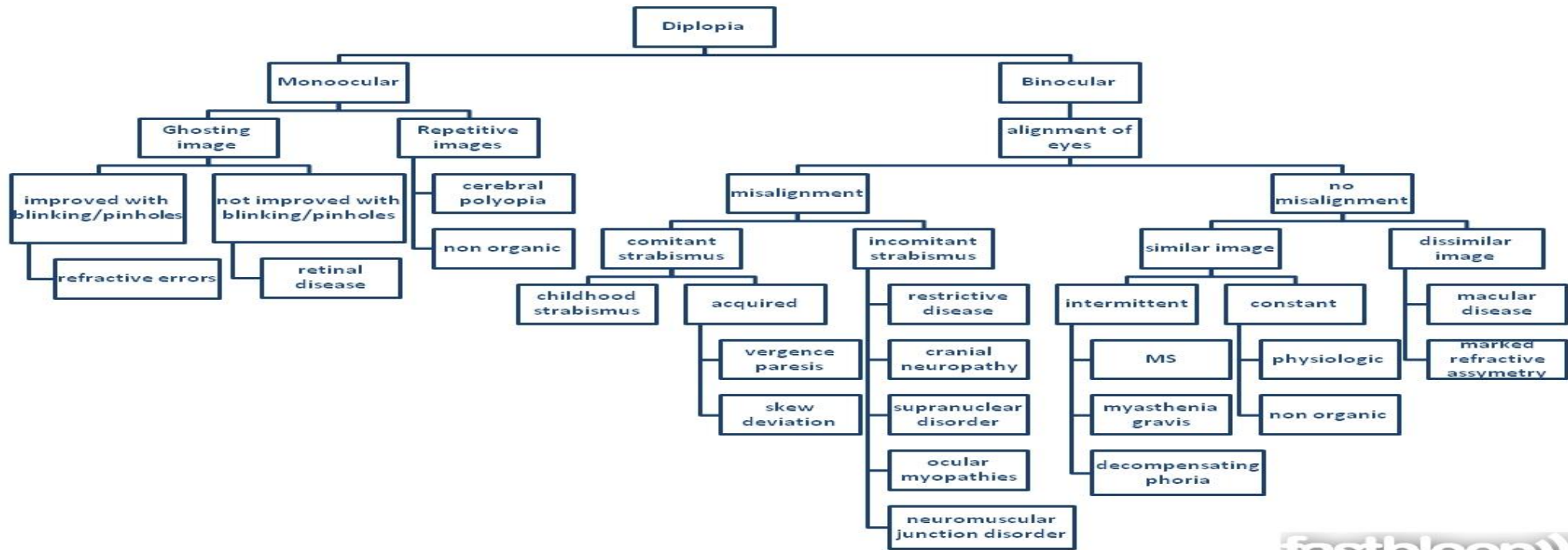
Prism Adaptation test done prior to surgery to get alignment even if not true ocular alignment, but eyes physically look like they are in the primary position of gaze.

Synoptophore used to see if patient capable of fusing.





# Diplopia...is it ever good ?



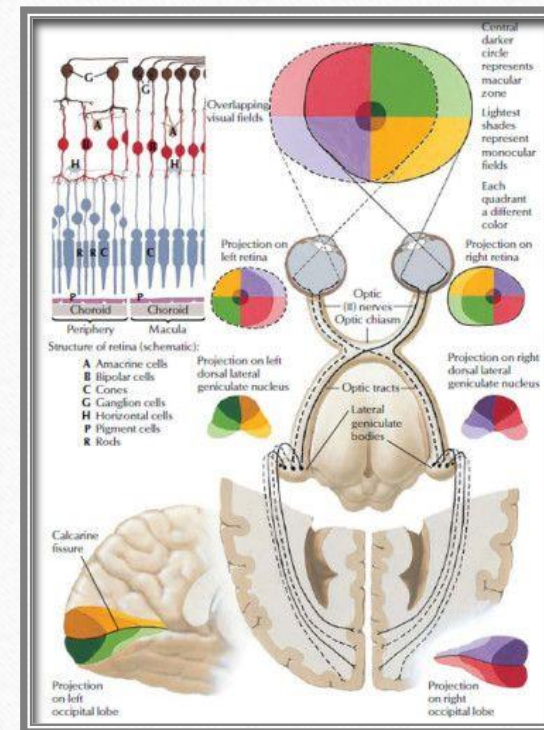
# Vision....

*A sensory process that guides an individual through their lifespan.*

**Hardware:** eye ball, muscles, brain(lower level processing)

**Software:** Mind (memory, experiences, higher level processing), psyche, gestalt.

**Feedback loops:** connects both to help produce outcome ( be it valid or invalid)





# The term .....Vision

## Greek

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- Eida / Eidolo
- Vlemma / Vlepo
- Kitazo / Kiatgma
- Estiazo / Estia
- Paratiro / Paratirisi
- Oro / Orasi / Oratotita
- Epikentronome / Epikentro

## English

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- See
- Focus
- View
- Visualize

What we need to do.....

