

**CRIMINALITY AND ITS ASSOCIATION WITH VISUAL  
DISORDERS;  
HISTORY AND FUTURE OPPORTUNITIES OF OPTOMETRIC  
OUTREACH IN CORRECTIONS AND THE JUSTICE SYSTEM  
(USA).**

Doug Major OD FAAO FCOVD ABO CCHP

# GOALS OF THIS PAPER

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1. Meta Overview of Vision Programs/Studies/Research in Corrections and Justice Programs (USA)
2. My Corrections Hobby! Personal Experiences Behind Bars
3. A Current Correctional Case Study, Challenges and Opportunities

## A. M Skeffington

“ A child who is bright and clever at everything else yet is unable to excel in school because he is visually defective...becomes more apt at crime...Optometry could contribute to the solution of the problem of the juvenile delinquent.”

*Chattanooga Times*, September 9, 1932

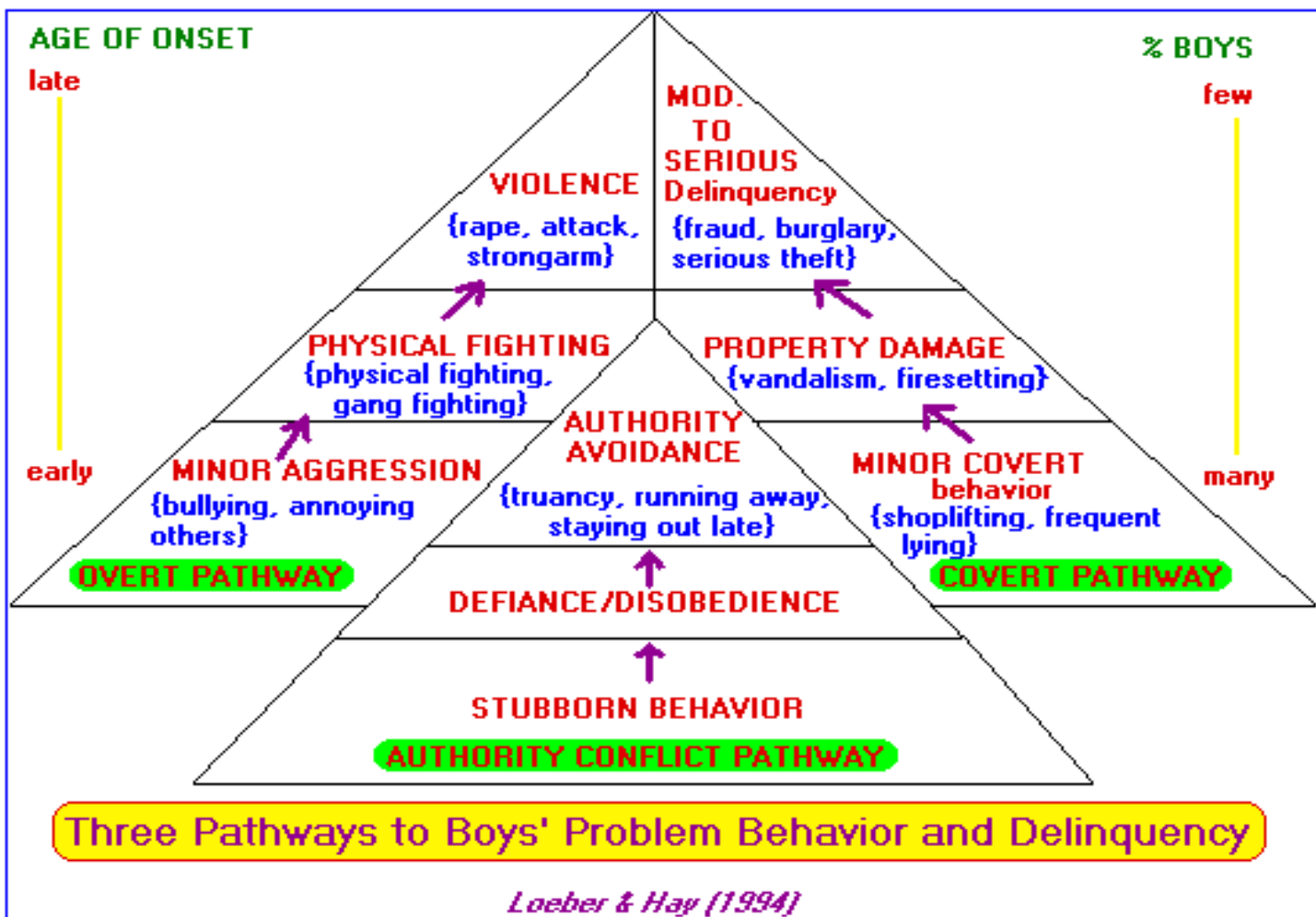


*A. M. Skeffington, O.D.*

C Koch, Juvenile delinquency and refractive errors, American Journal of Optometry Association 1933 page 264

C Brooks, Juvenile delinquency as an optometric problem, American Journal of Optometry Association 1947 page 307-11. The visual defect in a population of 58 children at the Napa State Hospital, CA

G Park, reading difficulty from the ophthalmic print of view, American Journal of Ophthalmology 1948 pages 28-34, "There is evidence that disturbance in binocular vision is a major cause of reading disability"



December 1947, President Truman's public appeal for the elimination of juvenile delinquency by "uprooting the causes."

Hamilton County, Tennessee 1949  
 Of 350 children who came before the Juvenile Court, 320 were low achieving students.

VISION AND THE JUVENILE DELINQUENT\*

DAVID DZIK, O.D.

Juvenile delinquency is one of the most serious problems facing our nation today, and is increasing at a rapid pace . . . a pace even more rapid than the population explosion. Much research has taken place to study the many facets of the juvenile delinquent. Why does a youngster resort to crime? *Does vision play an important role in the character of the delinquent?*

Many studies on juvenile delinquency mention "poor reader," but only in passing; yet our studies in *Chattanooga and Hamilton* counties, in Tennessee, show that it is the most common denominator among the juvenile delinquents.

In the study of 1949, of the last 350 children who came before the *Juvenile Court* of Hamilton County, 320 or 91% were retarded in grade school level . . . 91% were low achieving students. (see chart No. 1).

In the first few grades a child learns to read; then, he has to read to learn. And so it follows: if he can't read, he can't learn. So, note the sharp increase in juvenile delinquency in the fifth grade when reading is so essential. Also, note the greatest number of juvenile delinquents were seventh grade students. Could it be that these students who have difficulty in academic achievement in the classroom cannot cope with the more mature junior high school environment? The added stresses and strains of adolescence — (a period of tumultuous psychological social adjustment) combine to develop frustration, anger and hostility to the society which demands more from them than they have the tools and the skills to give.

CHART NUMBER ONE

350 Delinquent Cases Handled by Juvenile Court—Hamilton County, Tennessee—1949

Un- Age graded	Grade												Total	
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th		
6														1
7		1												3
8		1	2											7
9	1	1	2	1	2									11
10	1		2	5	3									15
11	1			5	3	2	3	1						27
12		1		3	5	13	4	1						47
13			1	3	5	8	11	8	10	1				66
14				2	5	14	13	16	10	3	3			99
15	1				11	13	13	26	13	13	7			76
16	2		1		4	6	7	19	13	14	6	3	1	350
Total	6	4	8	19	38	56	51	71	46	31	16	3	1	

Total number of cases.....350

Number Retarded in School.....320 or 91 percent

\* Reprinted from The Journal of the American Optometric Association.



## Plainfield Indiana 1972

A vision testing and training program was piloted at the State Boys School, fewer than 10% passed the visual test battery.

158 juveniles received vision therapy for 10 weeks, those youth gained nearly two grade levels of reading scores and initially, only 11 of the 158 returned to the school (7%) versus the overall return rate of 31%.



The Indiana Album: Indiana School for the Deaf Album

Charles Manson escapes,  
“Helter Skelter.”



## 75 Dollars Reward

The following boys are wanted at The Indiana Boys' School, Plainfield, Indiana, for escaping therefrom, Saturday, Oct. 28th, 1967.

### James Hurtt No. 7909

James Hurtt No. 7909, white, born June 2, 1950, at Evansville, Ind. Age 17. He is about five feet seven inches tall, weighs about 120 pounds. He has blue eyes, light brown hair, tall complexion straight nose. He has a distinctive gait, and presents a rather attractive appearance. He has a mustache on his upper lip which must be left alone, and is over six feet tall. Identification cards in his pockets, and would take to the Road.

His brother, Kelly Hurtt, makes time on No. 801, McDonald Street, Ellettsville, Indiana. His father, Frank Hurtt, lives on No. 127, 1/2 Block Street, Indianapolis.



### Charles Pickell No. 7495

Charles Pickell No. 7495, white, born June 2, 1950, at Evansville, Ind. Age 17. He is about five feet seven inches tall, weighs about 120 pounds. He has blue eyes, light brown hair, tall complexion straight nose. He has a distinctive gait, and presents a rather attractive appearance. He has a mustache on his upper lip which must be left alone, and is over six feet tall. Identification cards in his pockets, and would take to the Road.



### Woodford Rairdon No. 7441

Woodford Rairdon No. 7441, white, was born July 2nd 1950, at Plainfield, Indiana. He is about five feet seven inches tall, weighs about 120 pounds. He has blue eyes, light brown hair, tall complexion straight nose. He has a distinctive gait, and presents a rather attractive appearance. He has a mustache on his upper lip which must be left alone, and is over six feet tall. Identification cards in his pockets, and would take to the Road.



## Denver Colorado 1972

Dr. Roger Dowis conducted complete visual testing for youth at the Lookout Mountain School. Those with visual deficits were provided with visual therapy when deemed necessary. Of the 48 youth who received the treatment only 2 were re-arrested, a significant drop in this population (18% to 4 %)





## Tidewater Virginia

Dr. Joel Zaba evaluated status offenders who reported to the Juvenile Court for the effectiveness of utilizing academic therapies including vision training for perceptual motor enhancement in addition to reading tutoring. The recidivism rate for the treatment group dropped to 4.3% compared with the control group's 44% rate.

Dr. Zaba's work with Bachara was published in the Learning Disability Journal as is the most cited study in this summary with 74 citations.



tidewater  
youth  
services commission



San Bernardino California 1980

Drs. Stan Kaseno, Kristy Remick with interns from SCCO starting in 1980 and lasting over a decade, created one of the largest and longest-lasting outreach with over 6000 youths seen. Being on the McNeal Larid PBS broadcast give the program national recognition in a time of increasing criminality nationwide and the eventual passage of the 3-strikes law in California



**PBS**   
**NEWS  
HOUR**

PRESENTATION TITLE

# Crime rate exploded in 1970s and 80s

## Prison Populations expands

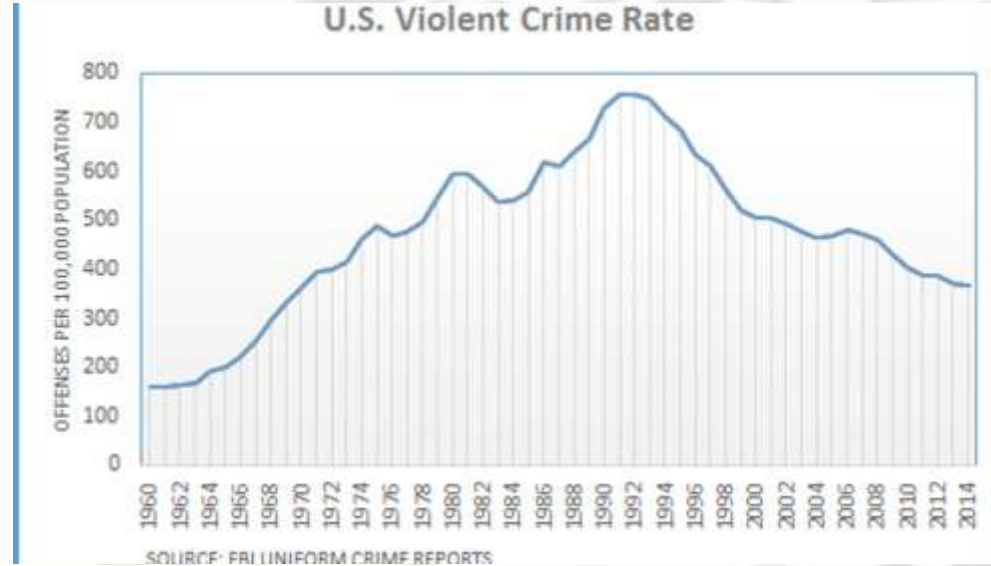
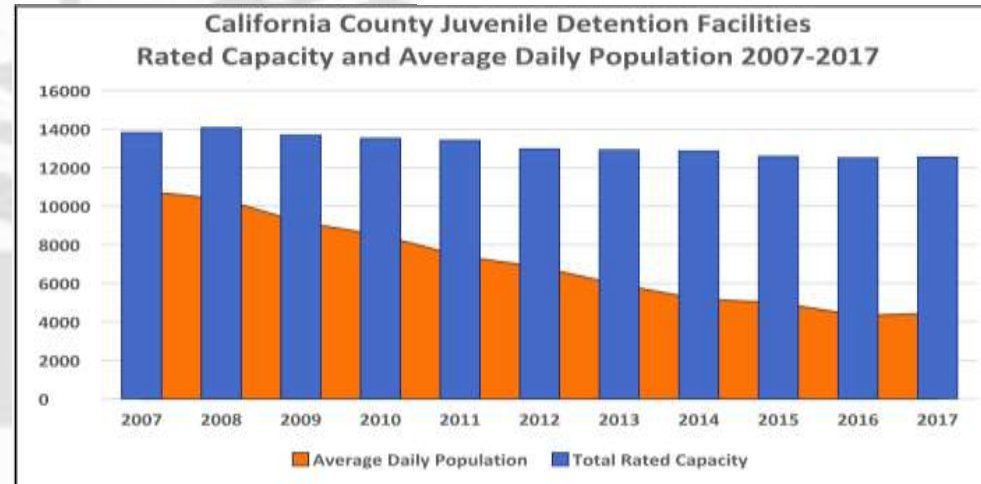
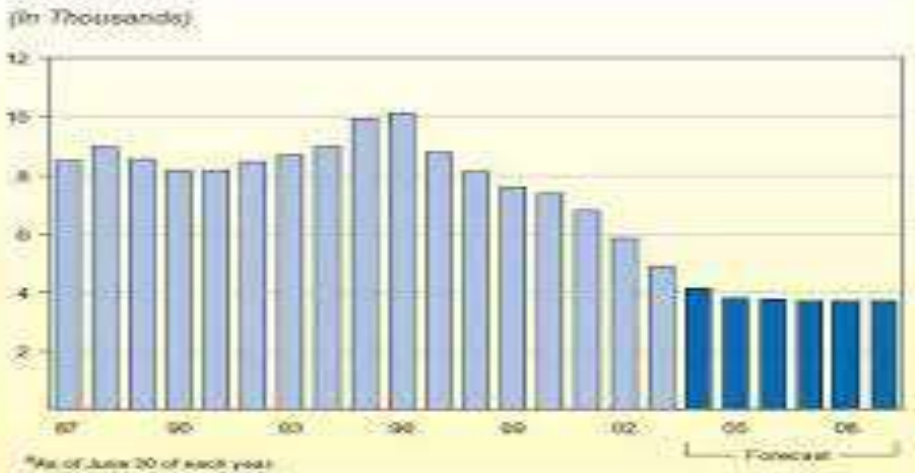


Figure 6  
Ward Population\*



# SAN BERNARDINO CALIFORNIA 1980-92

A sample of 506 youth after 24 one half hour vision therapy sessions increased reading level scores from 5<sup>th</sup> grade to 8.5-grade level, IQ scores on the Shipley Intelligence test increased 5 points from an average of 90 to 95, and recidivism drop from about 60% to 4%.



# The Stanislaus County Juvenile Hall September 1990

Drs. Eldon Rosenow, Dan Ulseth, and later Kristy Remick

Of the first 174 minors examined only 16 fully passed the vision skills and perceptual testing the included binocular, accommodation, and tracking disorders. Over 90% of the students passed the 20/20 distance eye chart but still, over 484 pairs of glasses were provided to correct mostly farsightedness and focus issues. A graduate student in 1992 completed a thesis showing significant improvement on self-esteem tests post vision therapy treatment.



20XX



PRESENT



## DEAN WID BLEYTHING ANALYZES THE DATA

Looking at a sample of 477 from the Stanislaus County Juvenile Hall he found failure rates of

70% accommodative flexibility

60%+ ocular mobility

46% convergence insufficiency.

His comment: **“Juvenile Delinquents are most likely a subgroup in both the visually-related learning-disabled population and the traumatic brain injury population.”**



# HERO'S IN OUR PROFESSION TRYING TO “UPROOT THE CAUSES”

Dr. Eldon Rosenow founded a charter school emphasizing early visual and perceptual treatments, he is still active in the school he started the Great Valley Academy. Early vision intervention is the key!



The SRS system utilizes current neuroscience, child development and strategies used by successful readers.

Our program breaks reading down into its neural development skills:

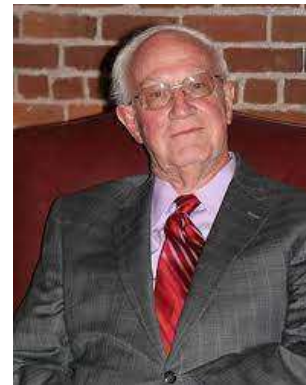
- Eye Tracking
- Visual Imagery
- Position in Space
- Figure Ground
- Visual Discrimination
- Visual Memory
- Form Constancy
- Visual Closure
- Gross Motor
- Fine Motor



Bend Oregon, Drs. Sandra Landis, Kit Carmiencke, Wid Bleything and others screened 123 youth enrolled at the Youth Challenge (an academic rescue/boot-camp program) for visual disorders. 55 failed and were given a comprehensive examination. From those results 24 were placed in a treatment group and given 2-hour long session for 12 weeks provided by vision therapist from local ODs offices. This study used the COVD-Quality of Life scores as indicators of the intervention treatments success. The QOL instruments were designed to measure life-meaningful outcomes which the treatment succeeded at a  $P < 0.001$  in this study

Dr Carmiencke added another outreach in 1990 and has screened over 200 youth at the Deschutes Juvenile Department, with his VT staff he completed a specialized visual performance evaluation for 51 youth. Visual success results for 25 youth from Juvenile department who have completed the visual training reveal:

- 3.3 YEAR IMPROVEMENT IN VISUAL TRACKING
- 54% IMPROVEMENT IN FUSION SKILLS
- 62% IMPROVEMENT IN FOCUSING SKILLS



**OREGON**  
YOUTH CHALLENGE PROGRAM

Clentanela Valley Juvenile Diversion Project was started in 1975, when Police Officers in the Inglewood Police to provide academic and behavior counselling. By 1992 over 3,500 at risk youth were screened, some by a program set up by Dr. JT Tassinari who used student at the Optometric Center of Los Angles to do the testing.





San Luis Obispo, California when Grizzly Academy was started in 1997, Drs. Doug Major and Dan Hile began entry screenings and refractive treatment with the hope of expanding to full vision treatment. We have evaluated almost 5000 youths since then and found upwards of 28-35% needing glasses coverage mostly farsightedness alone and with astigmatism. Providing the tools of learning is essential for the success of these academic rescue programs.



## AAPOS Position Statement, 1983

Vision has no connection with delinquency

Further controlled research is needed...



### Position Statement:

#### AMERICAN ACADEMY OF PEDIATRICS

Committee on Children With Disabilities, American Academy of Pediatrics (AAP) and American Academy of Ophthalmology (AAO), American Association for Pediatric Ophthalmology and Strabismus (AAPOS)

Baltimore Maryland in 1988 Dr. Paul Harris started a research study at the Charles H. Hickey, Jr. School for Boys in Baltimore County, Maryland

The Grants goals were to identify visual disorders then provide treatment. 132 youth were given the most extensive test battery to date.

50 had convergence insufficiency

59 had reduced stereopsis

30 had a refractive error that needed treatment mostly farsightedness (An African American population)

On the King-Devick test, 95 youth scored below their age norm with 52 scoring 2 standard deviations below their expected. Please note that this test is a standard for possible brain injury.

Unfortunately, the treatment phase was not completed at Charles Hinkley School.



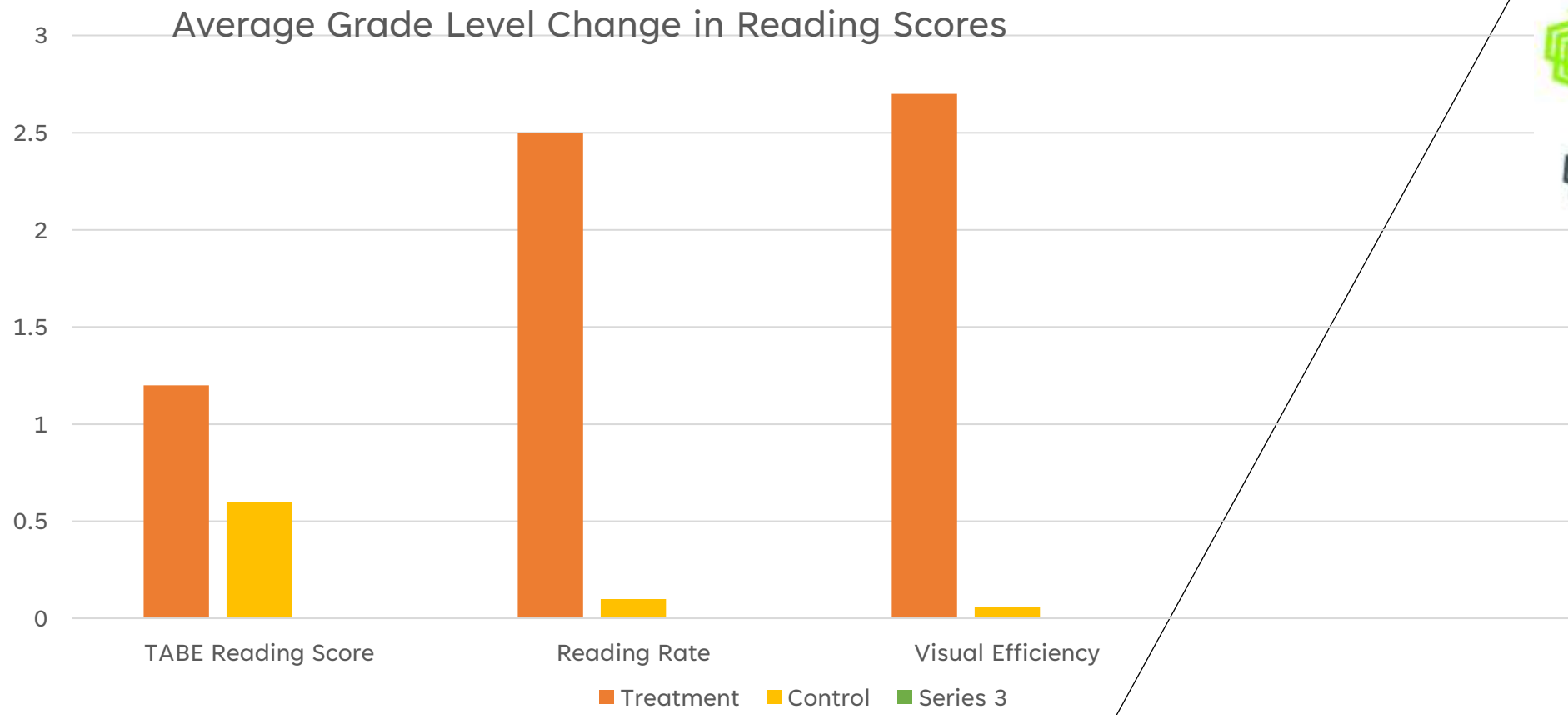
# EL PASO DA ROBLES VISION THERAPY PROGRAM 1988-1991

Paso Robles, California, Drs. Doug Major and Karen Kudija and Therapist Nancy Major and others participated in this outreach funded by the OCJD to provide visual care for wards of the state as well as do a single blind controlled study of the effectiveness of developmental vision care in this population. From 9/1988 to 11/1991 over 2000 ward received a vision screening and were assigned to control or treatment groups by the Research department of the CYA. They were match using visual skill measures and the TABE reading scores. 560 ward were chosen to participate in the study and 276 have completed vision treatments.

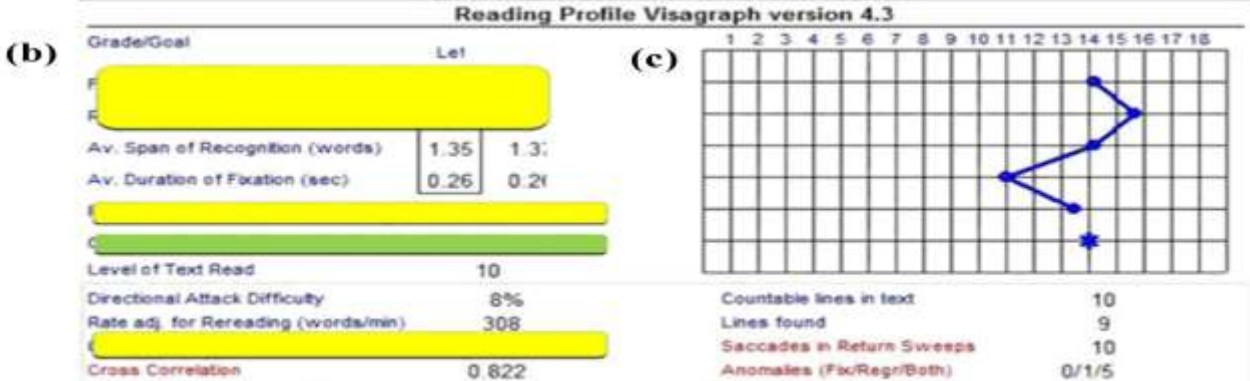
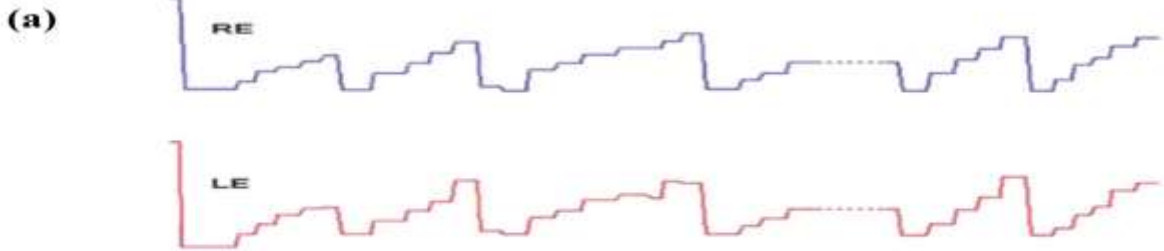


TITLE

188 of the treatment group wards increased their reading literacy by 2.0 grade level following two months of vision care/treatment. This is of functional significance because it moves these young men (Average 6.5 grade level) into the average reading grade. American is considered to have a readability level equivalent to 8<sup>th</sup> grader. This level is actively used as a benchmark for written guidelines in the medical industry and most printed material. Reading rates went from a slow 160 words a minute to over 300.

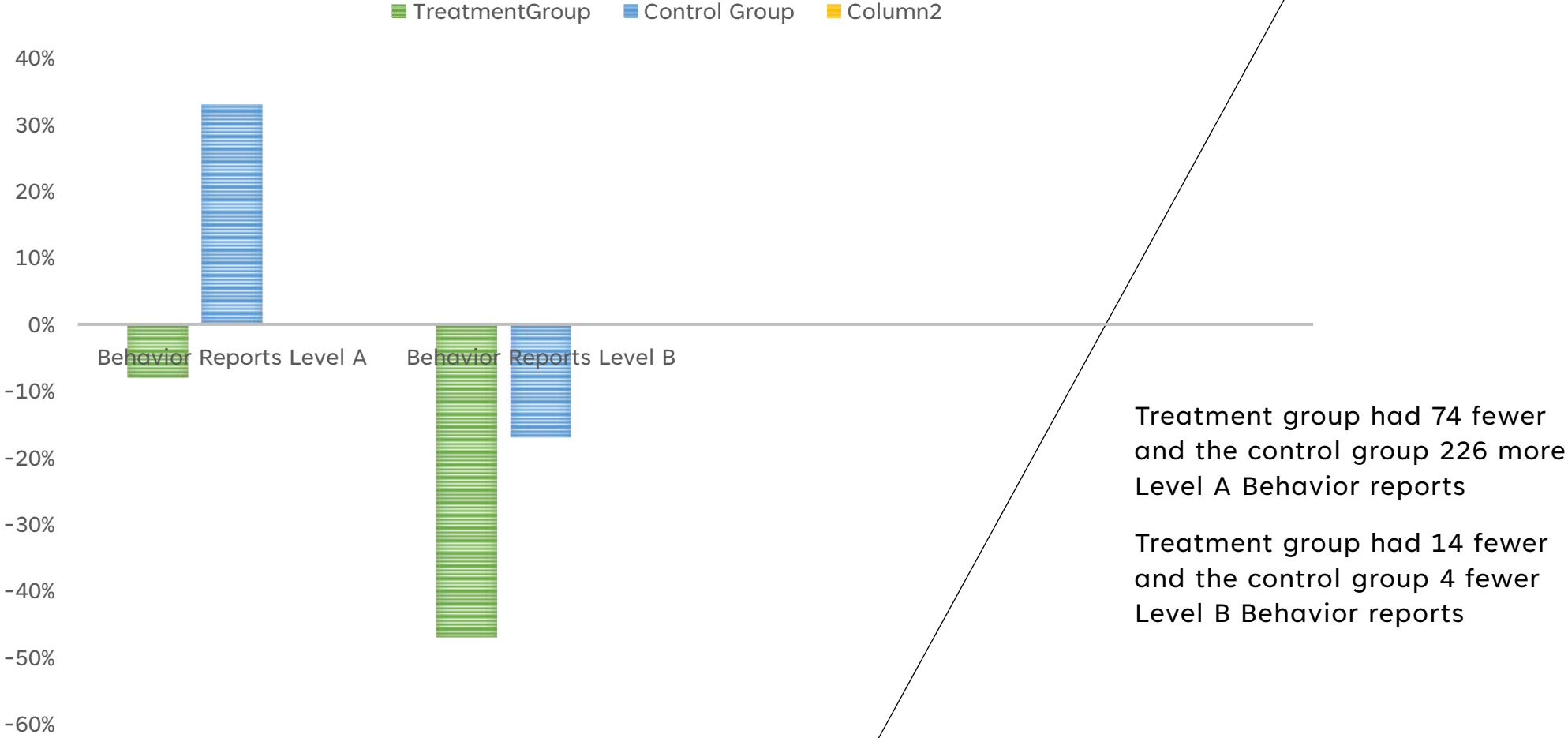


# VISISGRAPH AN OBJECTIVE WAY TO ACCESS THE EYE MOVEMENTS DURING READING

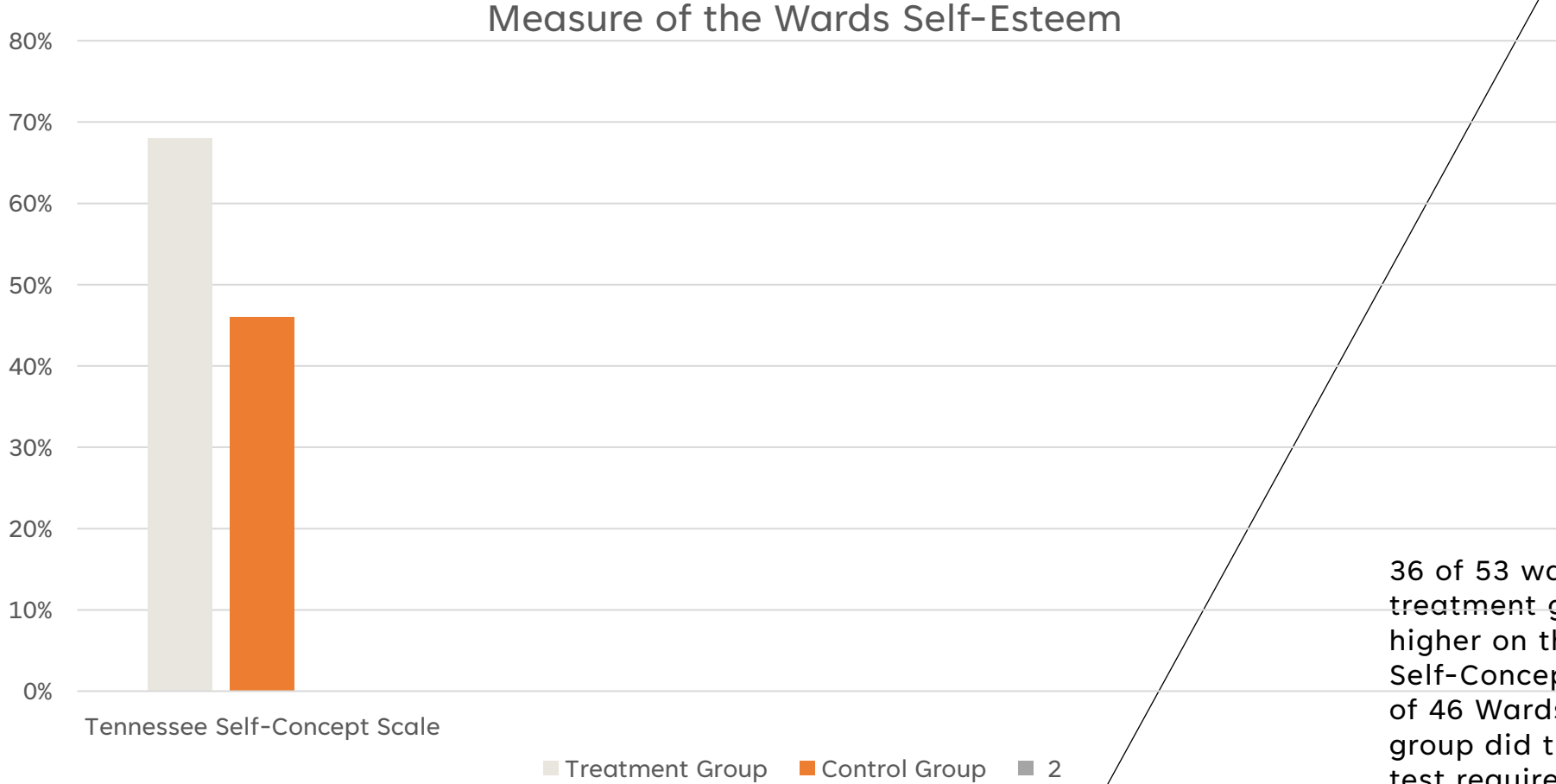


# BETTER ONSITE BEHAVIOR MAKES ALL ACTIVITIES MORE SAFE AND EFFECTIVE.

## BEHAVIOR REPORTS, 2 MONTHS PRE AND POST TREATMENT TIME



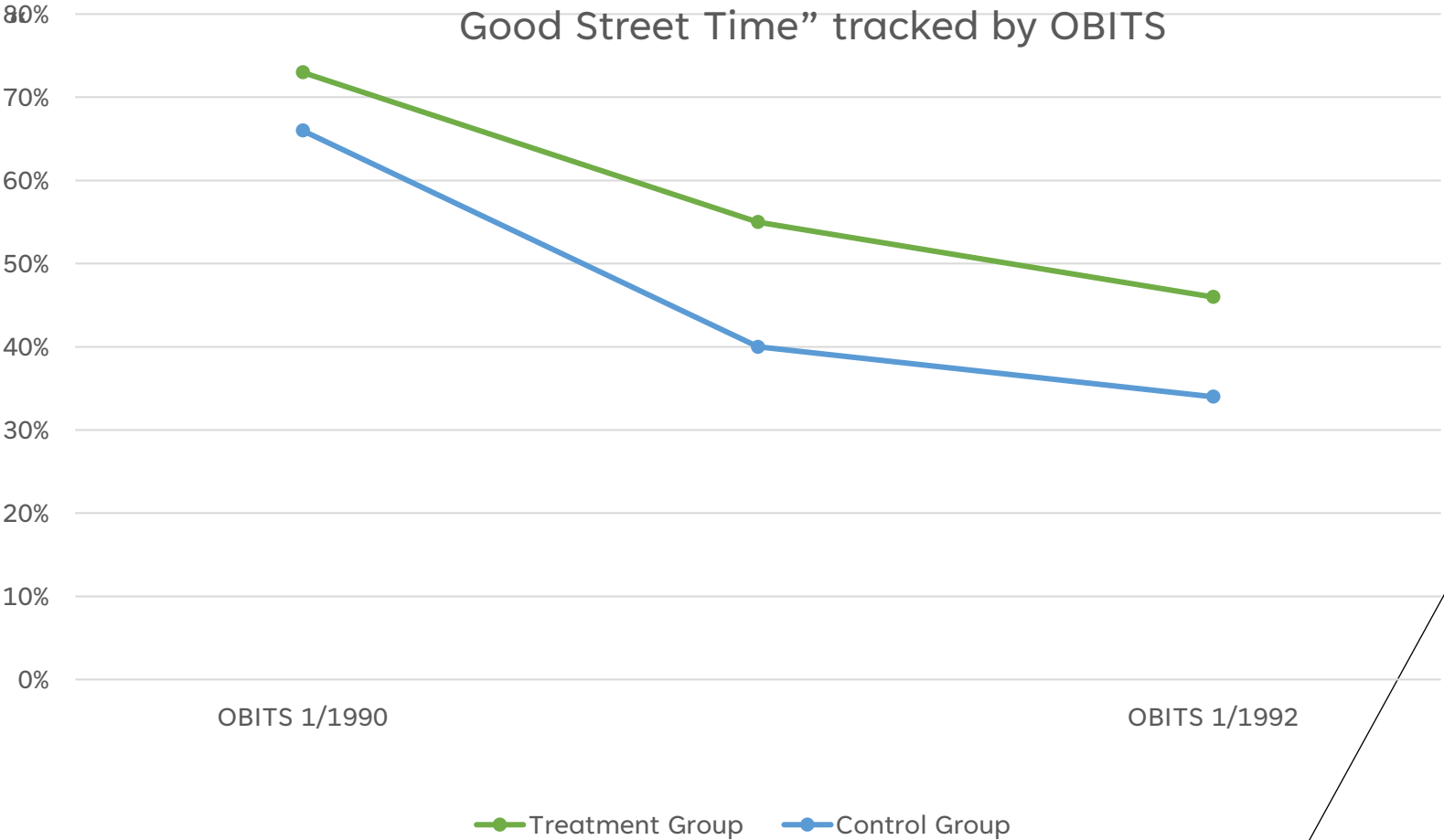
# SIX WARD AIDS ASSISTED IN THE VISION TRAINING GIVING 2766 HOURS OF SERVICE HELPING THEIR PEERS



36 of 53 wards of the treatment group scored higher on the Tennessee Self-Concept Scale while 21 of 46 Wards in the control group did the same. This test required an 8<sup>th</sup> grade level of reading.



# RECIDIVISM POST TREATMENT/INCARCERATION

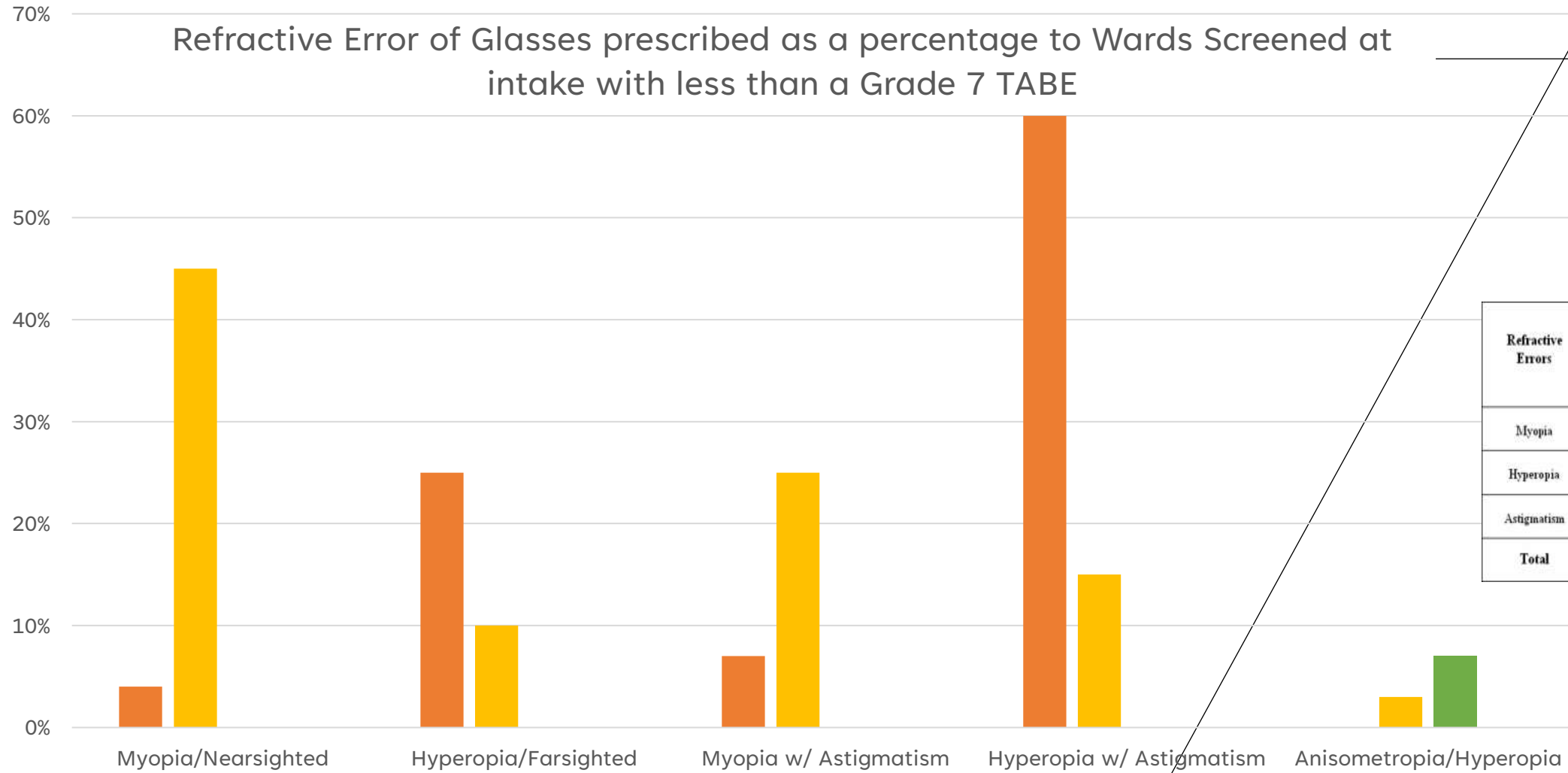


1/1990 Treatment group had 51 on parole and 73% had “good street time” the control group had 36 paroled with 66% GST.

1/1992 Treatment group had 108 wards on parole with 50 had 100% “good street time” and the control group had 95 wards on parole with 33 in that group with 100% “good street time”

# A HIGH PREVALENCE OF FARSIGHTEDNESS WITH ASTIGMATISM THAT WAS PRESENT BEFORE ENTERING KINDERGARTEN

Refractive Error of Glasses prescribed as a percentage to Wards Screened at intake with less than a Grade 7 TABE



Refractive Errors	Age Groups (years)			Total n=1265 [%]	z <sup>2</sup> Value (df=4)	P Value
	(6-10) n=282 [%]	(10-13) n=536 [%]	(13-15) n=447 [%]			
Myopia	9 [3.2]	48 [8.9]	96 [21.5]	153 [12.7]	66.05	<0.00*
Hyperopia	5 [1.8]	8 [1.5]	6 [1.3]	19 [1.5]	0.115	>0.50
Astigmatism	4 [1.4]	26 [4.9]	39 [8.7]	69 [5.5]	18.51	<0.00*
<b>Total</b>	18 [6.4]	82 [15.3]	141 [31.5]	241 [19.1]		

SA "Some people might think they can't read because they're dumb...This program helps you use your eyes better...After I came through here everything was a lot easier for me..."

SS "I know it helped me...a lot of ward like me really don't care...I didn't know I had a problem as a slow reader back then and everything I saw was the way it was"

Telegram Tribune December 26, 1990



Robert Dyer/Telegram-Tribune

Solomon Adegbenro wears a pair of yoke glasses while attempting to read letters and numbers written on a swinging softball.

## Vision key to boys' school improvement



# A MAIN POINT THAT DEVELOPED ME PROFESSIONALLY FROM THIS EXPERIENCE, EARLY INTERVENTION WAS KEY!

SLOLIONSEYES onsite diagnostic exams began when the Orinda Study verifying the Modified Clinical Technique Began in the early 1960's. Now after over 60 years, and close to a MILLION exams later we have seen a lot of kids and a lot of changes! In 2000 we started the First5 Preschool vision program to identify and treat visual disorders earlier, we have seen 88,000 preschooler.

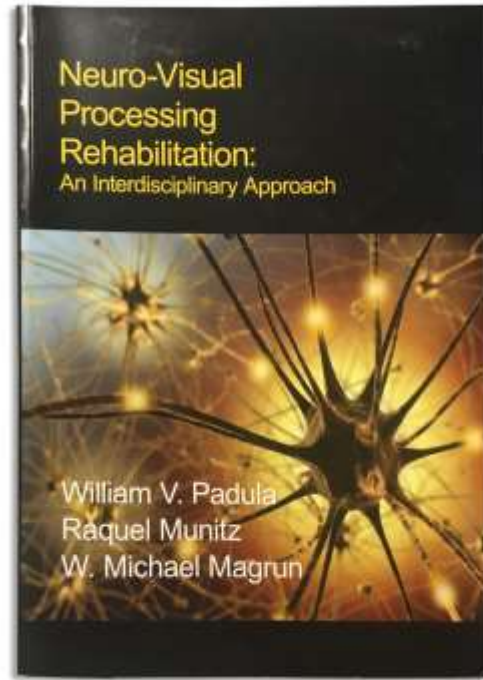


## Welcome to SLOLionEyes.org!



Optometrists George McDonald, left, and Jack Panza began screening schoolchildren 40 years ago.





The King-Devick Test now has hundreds of peer review supportive research in scores of journals in the areas of concussion, reading solutions and neurologic functions.

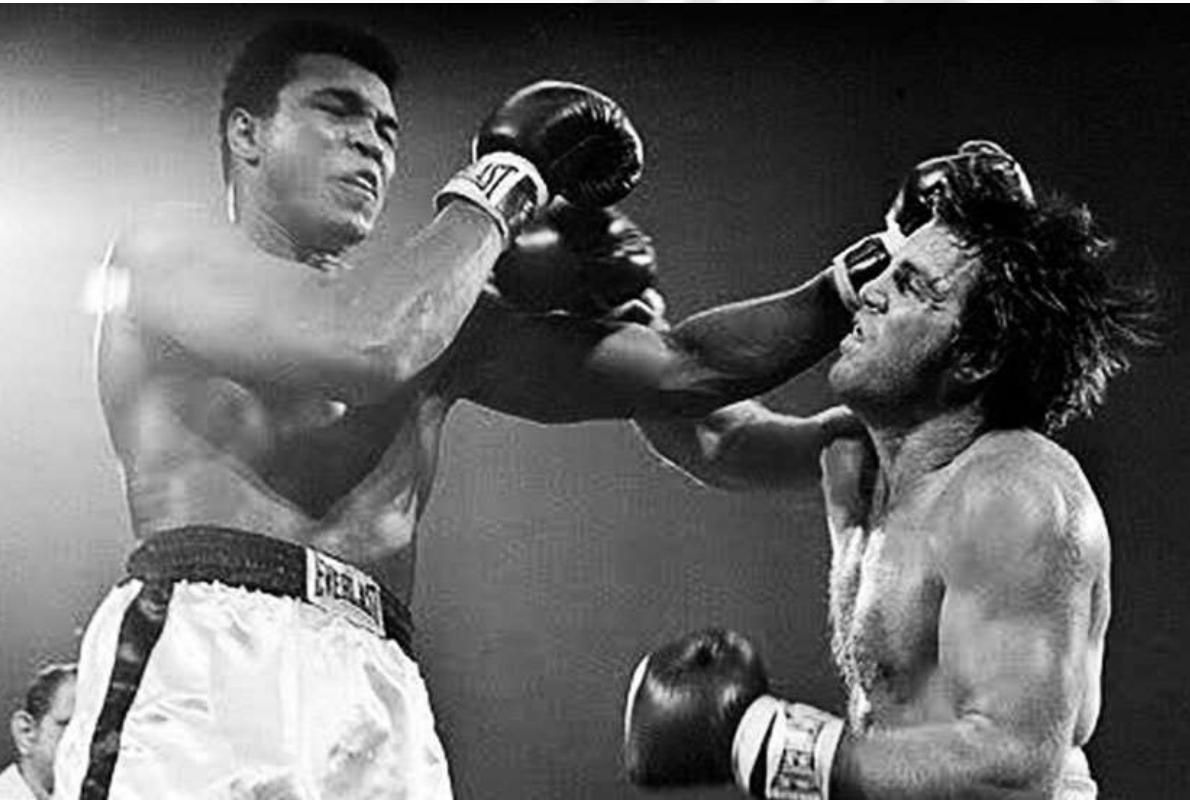
PRESENTATION TITLE



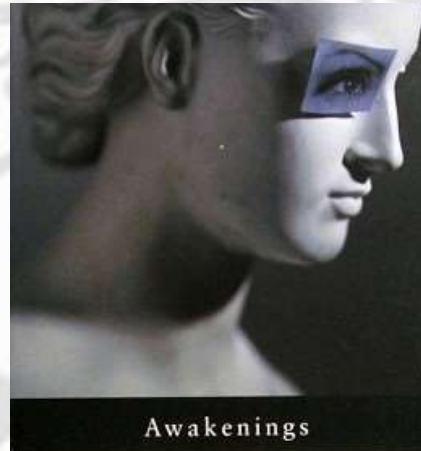
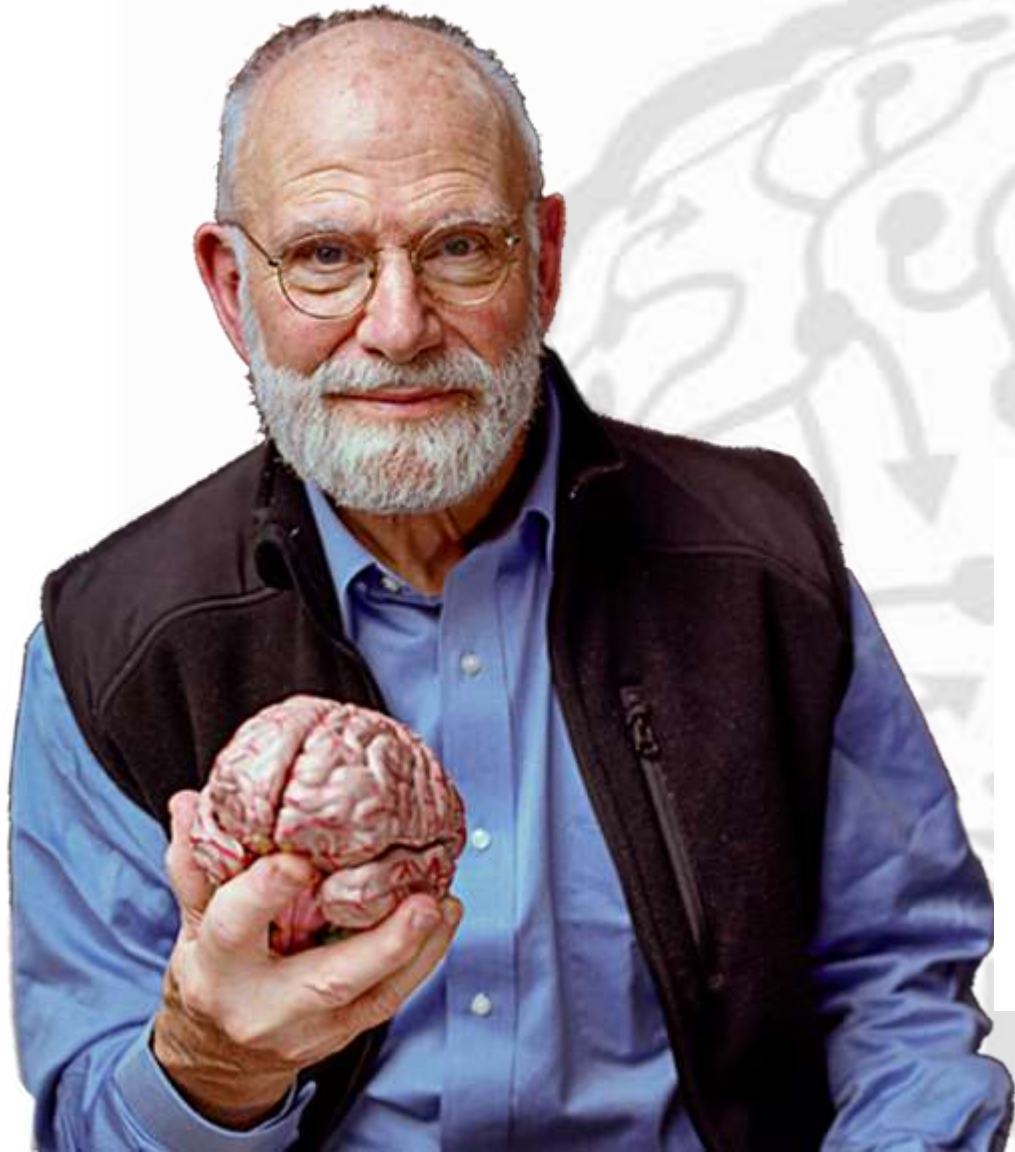
In association with  
**Mayo Clinic**



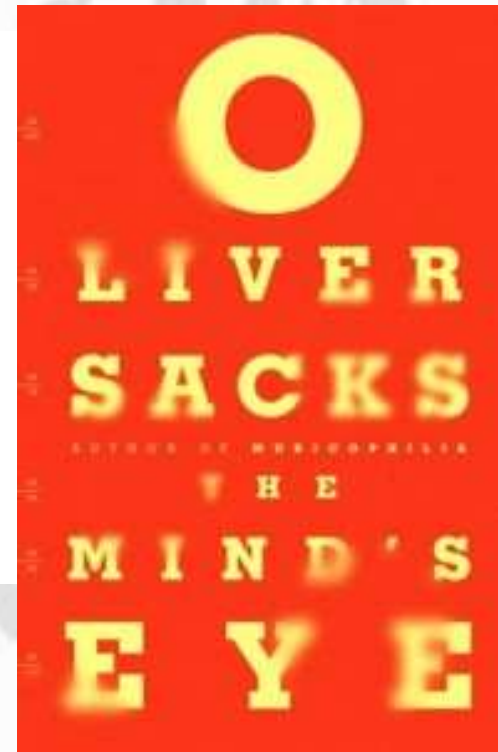
# Jerry Quarry's **Chronic traumatic encephalopathy (CTE)**

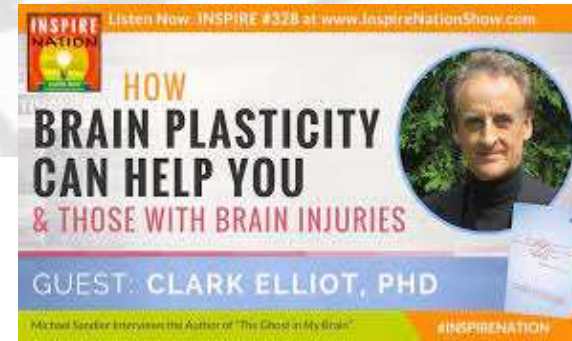
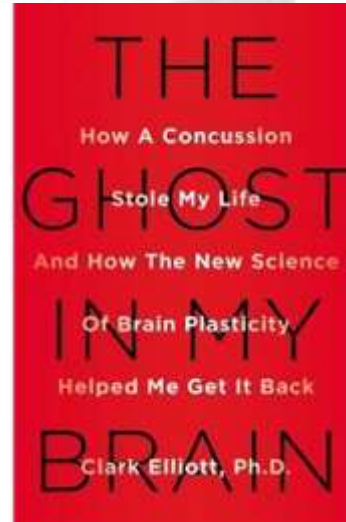


# The Power of the Case Studies in Neurology!



OLIVER SACKS







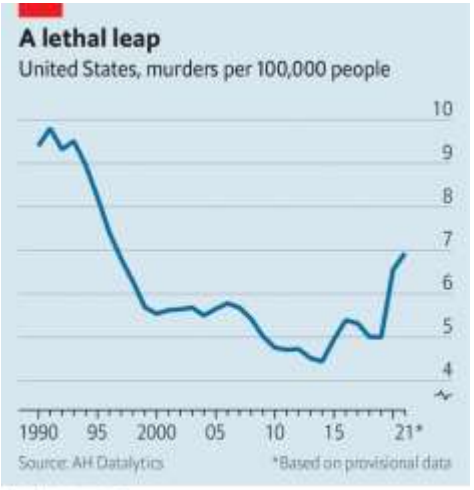
[United States Jan 15th 2022 edition](#)

**Refunding the police**  
As violent crime leaps, liberal cities rethink cutting police budgets. The tricky politics of criminal-justice reform at a time of rising fears

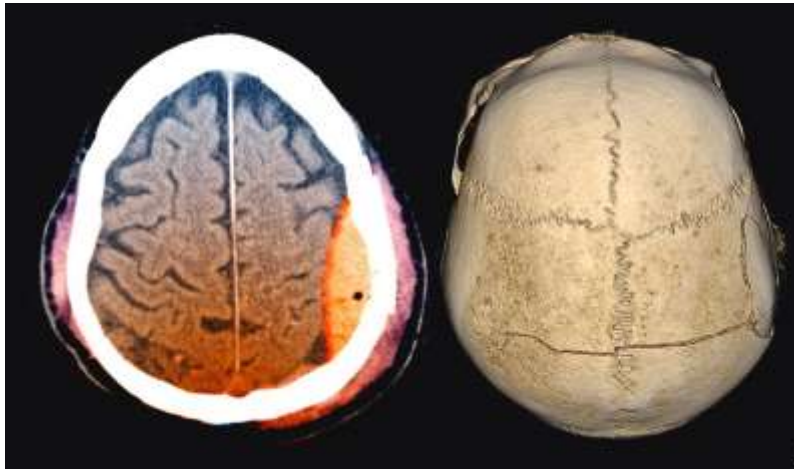
[Mar 27th 2021 edition](#)

**Knocked out and locked up**  
A huge share of prisoners have brain injuries. They need more help. It would be best to prevent such injuries in the first place

**Banged up**  
Brain injuries are startlingly common among those who have committed crimes. Preventing them could lower crime rates

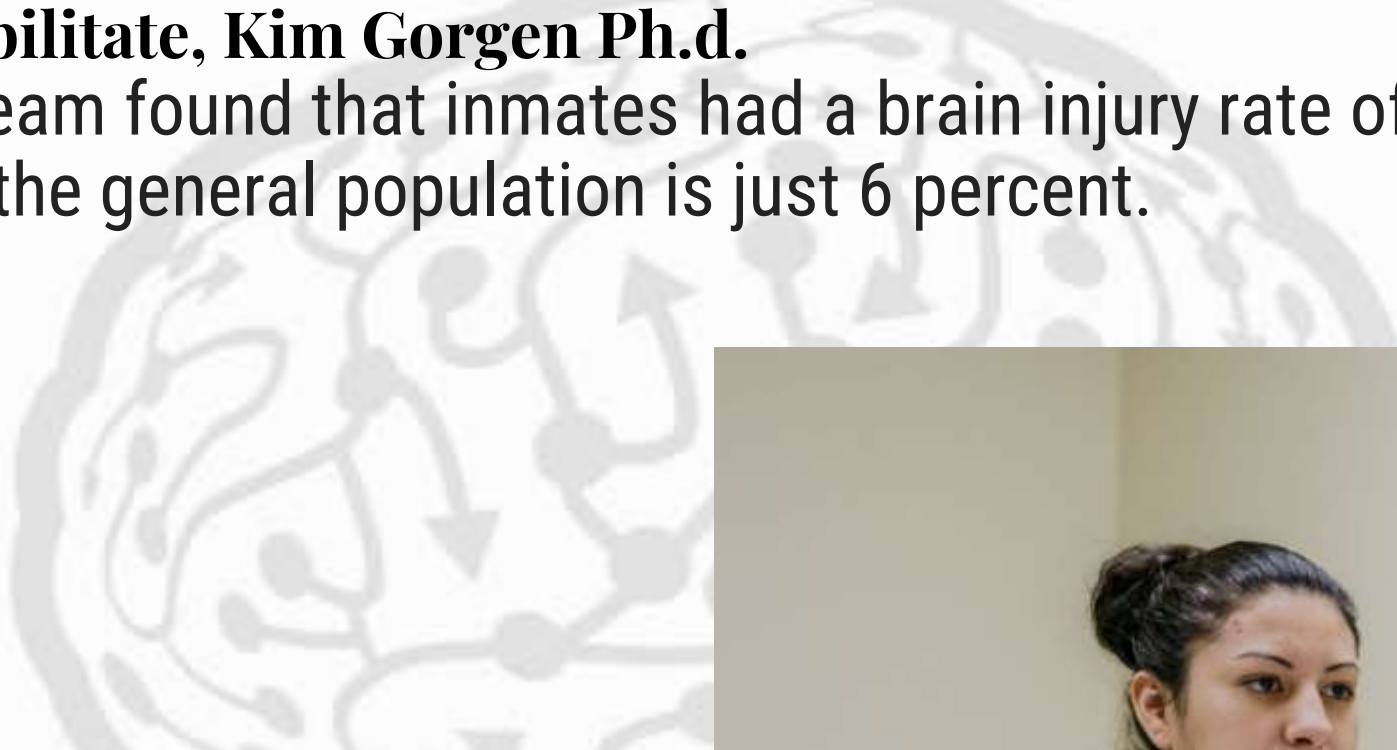


The Economist



# Teaching Prison Inmates About Their Own Brain Trauma Could Help Them Rehabilitate, Kim Gorgen Ph.d.

Gorgens's team found that inmates had a brain injury rate of 96 percent; the rate for the general population is just 6 percent.



Brain injury is included once in the text, in the taking a history section. Optometry/vision care is mentioned twice!



National Commission  
on Correctional Health Care

**NEW!** NCCHC Virtual Fall Conference 2021

Critical information  
on correctional health:  
at your convenience  
wherever you are!

November 17-18

4,347.28 8,173.65 25,014.74

The banner features a background image of a person wearing a blue surgical mask and a white lab coat, with their hands visible. A colorful line graph is overlaid on the bottom left corner.

VOLUME 17 NUMBER 1 • SEPTEMBER 2018

JOURNAL OF  
**CORRECTIONAL  
HEALTH CARE**

**In This Issue**

- Medication Considerations in the Management of Opioid Use Disorder With Buprenorphine
- Prevalence and Correlates of Self-Harmful Behavior Among Inmates: A Meta-Analysis
- Nutritional Outcomes in a Midwestern Prison: Relative How Do They Compare to Accepted Standards?
- Justice-involved Women and Clinical Care Disparities
- Saccharine NCCHC Foundational Statements

And More...

NCCHC  
NATIONAL COMMISSION  
ON CORRECTIONAL HEALTH CARE

May the Good, be a publication  
www.ncchc.com/2018

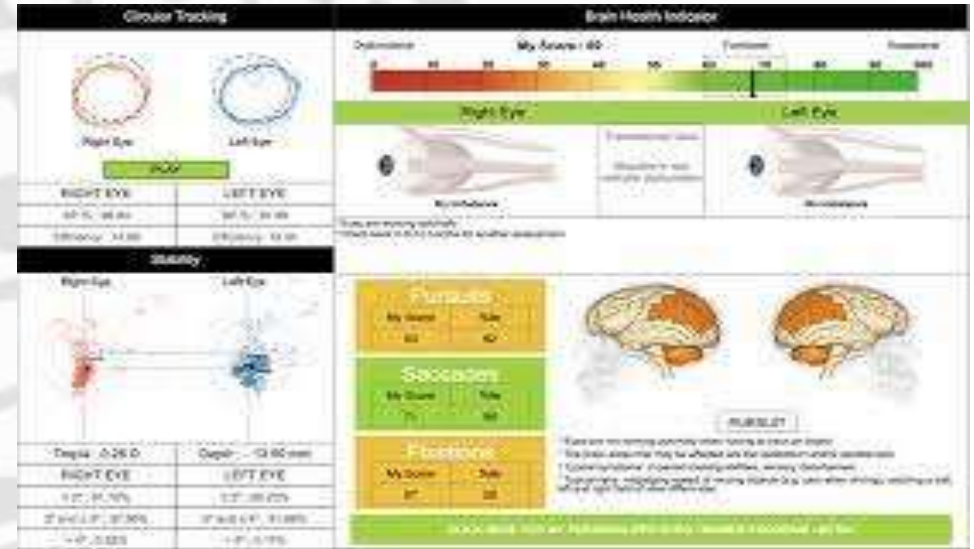
NCCHC  
National Commission  
on Correctional Health Care

**Standards for  
Health Services  
in Prisons**

2018

# Traumatic Brain Survey at Grizzly Academy uptake

San Luis Obispo, California In 2019, we added a visual symptom questionnaire to our visual intake process at the Grizzly Youth Academy. We found that out of a cadre of about 125 new cadets, 38 reported remembering having a TBI and 49 reported visual symptoms that could be associated with a brain injury.



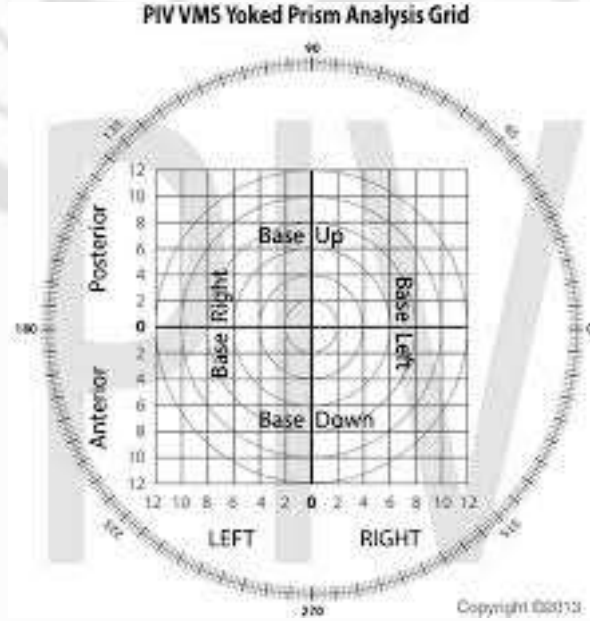
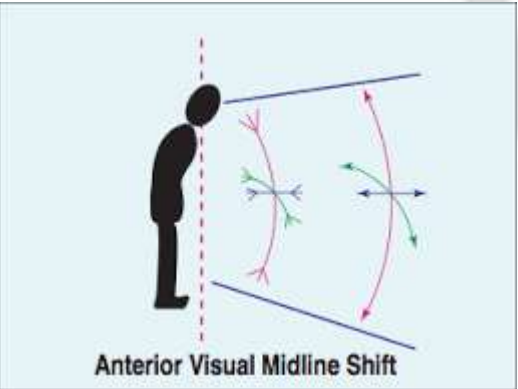
# CASE STUDY: Criminality caused by a TBI

- AA, 48 Y/O male reported to the vision clinic at the SLO Jail with photosensitivity, loss of balance, and “swimming vision”. He reported having a second concussion, a fall off a scooter 3 months after an initial TBI. After the second injury, his co-workers at the machine shop where he was employed reported dysregulated behavior and multiple repetitions of conversations and instructions. This altered behavior led to the termination of his employment, marital problems ending in divorce with a domestic violence event that resulted in his incarceration.



# Diagnosis of PTVS and BIVSS score

- AA had classic Post Traumatic Visual Symptoms and a score of on the BIVSS was 76. He had problems sleeping with the lighting in the jail. He had uncorrected visual acuity of 20/20, no ocular health issue. Associated with PTVS was painful convergence of 14/10 inches, positive Romberg's, a posterior midline shift, and inaccurate spatial localization on the blind touch test.



**BIVSS CHECKLIST** (Brain Injury Vision Symptom Survey)

Patient Name: \_\_\_\_\_ Today's date: \_\_\_\_\_

My brain injury was: \_\_\_\_\_ years ago My age is: \_\_\_\_\_ years today's date: \_\_\_\_\_

I have had a medical diagnosis of brain injury (check box if true) Cause of injury: \_\_\_\_\_

I sustained a brain injury without medical diagnosis (check box if true)

I have NOT ever sustained a brain injury (check box if true)

Please check the most appropriate box, or circle the item number that best matches your observations. All information will be held in confidence. Thank you for your help!

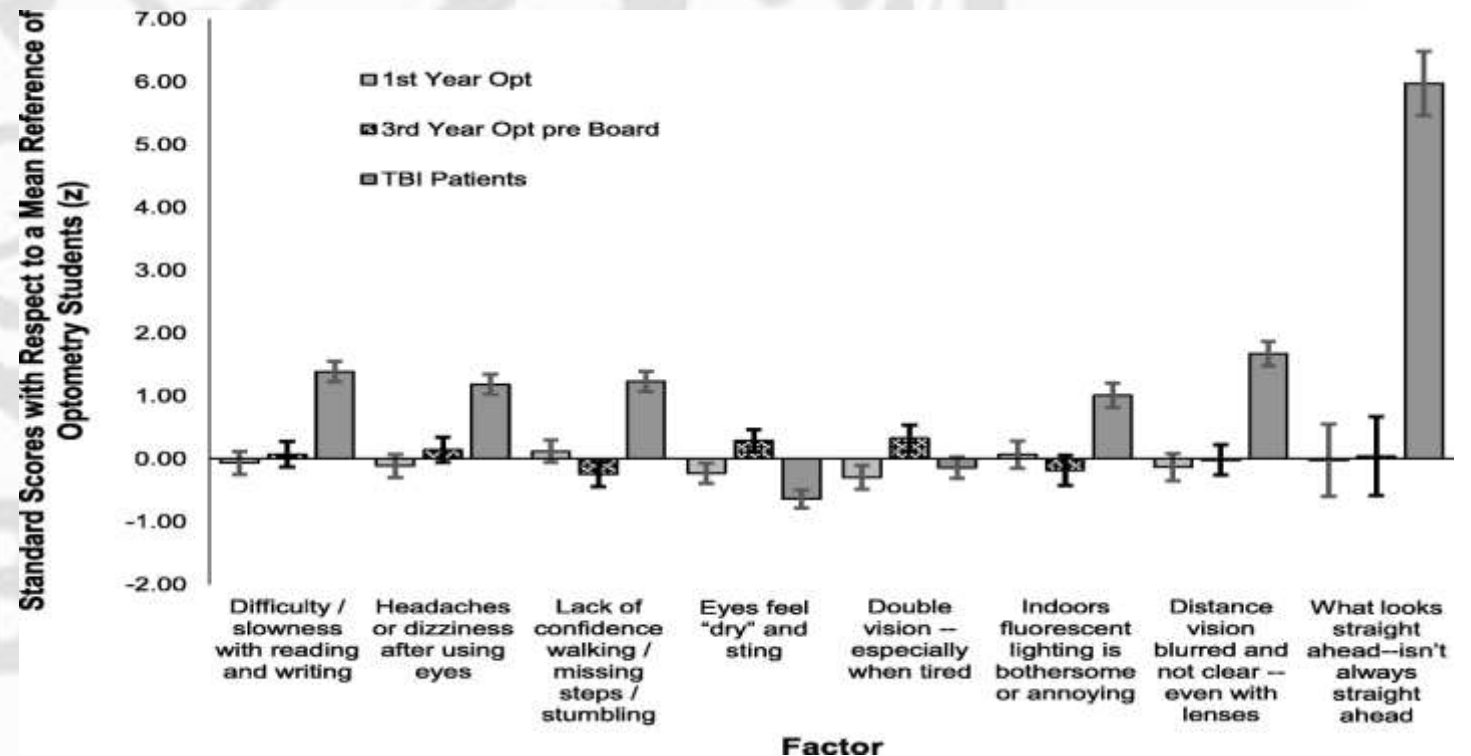
**SYMPTOM CHECKLIST** Circle a number below:

Please rate each behavior. How often does each behavior occur? (circle a number)	Never	Seldom	Occasionally	Frequently	Always
<b>EYESIGHT CLARITY</b>					
Distance vision blurred and not clear -- even with lenses	0	1	2	3	4
Near vision blurred and not clear -- even with lenses	0	1	2	3	4
Clarity of vision changes or fluctuates during the day	0	1	2	3	4
Poor night vision / can't see well to drive at night	0	1	2	3	4
<b>VISUAL COMFORT</b>					
Eye discomfort / sore eyes / eyestrain	0	1	2	3	4
Headaches or dizziness after using eyes	0	1	2	3	4
Eye fatigue / very tired after using eyes all day	0	1	2	3	4
Feel "pulling" around the eyes	0	1	2	3	4
<b>DOUBLING</b>					
Double vision -- especially when tired	0	1	2	3	4
Have to close or cover one eye to see clearly	0	1	2	3	4
Print moves in and out of focus when reading	0	1	2	3	4
<b>LIGHT SENSITIVITY</b>					
Normal indoor lighting is uncomfortable -- too much glare	0	1	2	3	4
Outdoor light too bright -- have to use sunglasses	0	1	2	3	4
Indoors fluorescent lighting is bothersome or annoying	0	1	2	3	4
<b>DRY EYES</b>					
Eyes feel "dry" and sting	0	1	2	3	4
"Stare" into space without blinking	0	1	2	3	4
Have to rub the eyes a lot	0	1	2	3	4
<b>DEPTH PERCEPTION</b>					
Clumsiness / misjudge where objects really are	0	1	2	3	4
Lack of confidence walking / missing steps / stumbling	0	1	2	3	4
Poor handwriting (spacing, size, legibility)	0	1	2	3	4
<b>PERIPHERAL VISION</b>					
Side vision distorted / objects move or change position	0	1	2	3	4
What looks straight ahead--isn't always straight ahead	0	1	2	3	4
Avoid crowds / can't tolerate "visually-busy" places	0	1	2	3	4
<b>READING</b>					
Short attention span / easily distracted when reading	0	1	2	3	4
Difficulty / slowness with reading and writing	0	1	2	3	4
Poor reading comprehension / can't remember what was read	0	1	2	3	4
Confusion of words / skip words during reading	0	1	2	3	4
Lose place / have to use finger not to lose place when reading	0	1	2	3	4

31VSS\_20 (revised) 09/14 (Joan LaBarn) Predictor score = 1/11 **total score for all 28-items: \_\_\_\_\_**

# Spatial Evaluation and Yoked Prism Treatment

- Evaluation of AA spatial mapping with gait evaluation and the Z Bell technique found that a 2 base down yoke prism improved the accuracy of localization and confidence/posture in gait reanalysis. At a post glasses treatment exam, AA reported normalization of symptoms but only in the Peripheral Vision section. We have contacted his parole agent for follow-up.



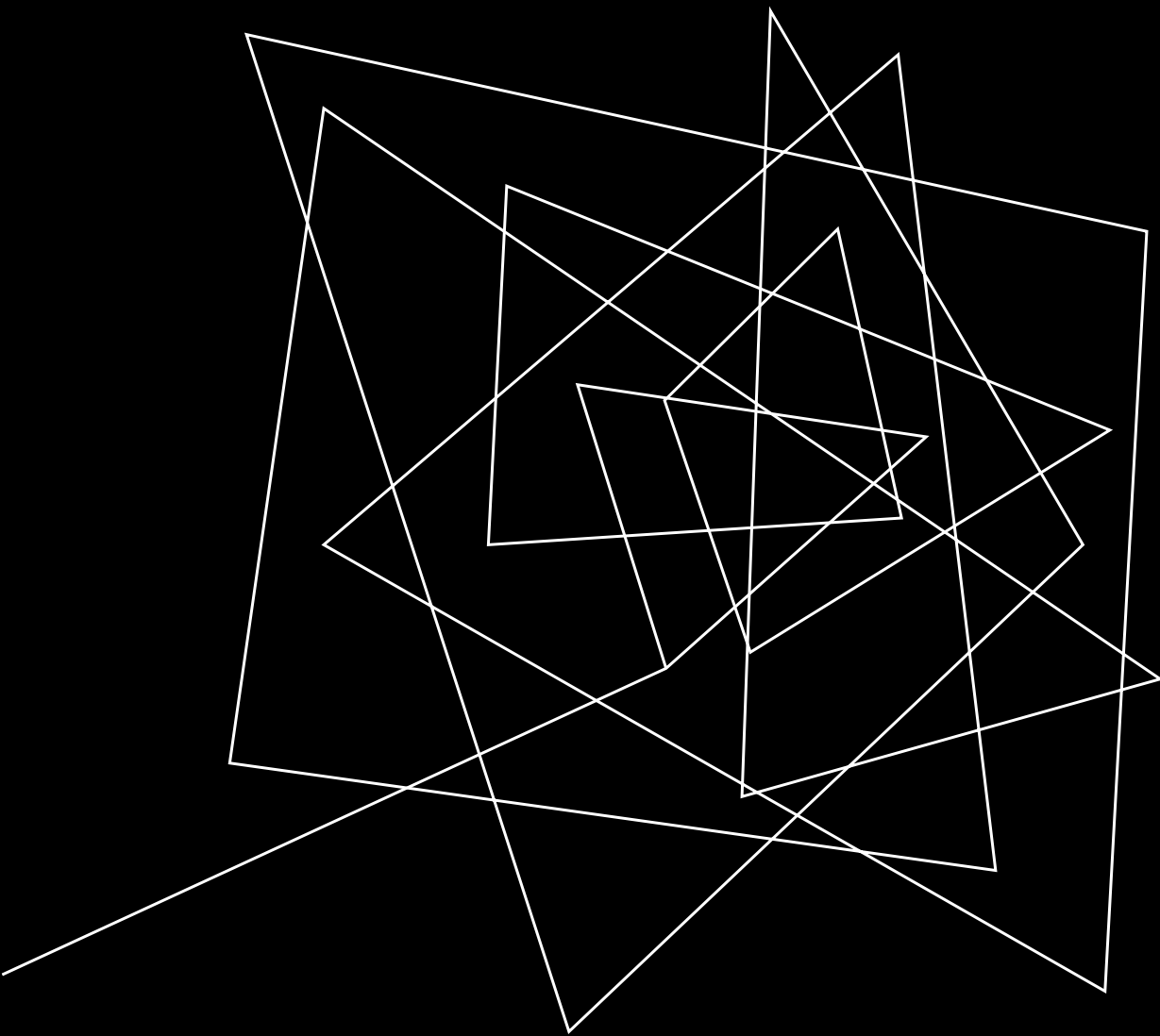


## CONCLUSION:

Criminality is a costly, complex, multi-factorial societal problem. Those incarcerated with a TBI history should receive modified sentencing and treatment that directly addresses the behavioral and mental dysregulation of their injury. Neuro-Optometrists have the tools for accurate diagnosis and effective treatment for many of these brain injury cases and can help reduce the societal costs of criminality. Earlier interventions could be most cost-effective.

Thanks for your interest! Please share any programs or people I missed. Questions?





## **CONCLUSION:**

CRIMINALITY IS A COSTLY, COMPLEX, MULTI-FACTORIAL SOCIETAL PROBLEM. THOSE INCARCERATED WITH A TBI HISTORY SHOULD RECEIVE MODIFIED SENTENCING AND TREATMENT THAT DIRECTLY ADDRESSES THE BEHAVIORAL AND MENTAL DYSREGULATION OF THEIR INJURY. NEURO-OPTOMETRISTS HAVE THE TOOLS FOR ACCURATE DIAGNOSIS AND EFFECTIVE TREATMENT FOR MANY OF THESE BRAIN INJURY CASES AND CAN HELP REDUCE THE SOCIETAL COSTS OF CRIMINALITY. EARLIER INTERVENTIONS COULD BE MOST COST-EFFECTIVE

Thanks for your interest, Questions?