

# Sequential Syntonic Phototherapy for Concussion

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# Sequence Protocol

- Rehabilitation: palliation
- Regeneration : rebuilding from the cellular level to systems integration
- Restoration : establishing an optimal condition or state.

# History

- 42 yr. old female referred by concussion CTR.
- CVC: diplopia, dizziness, poor balance, vertigo, sleep disturbed, reading problems, chronic headaches, photophobia, dry eyes, Rx Amitriptyline and Effexor, Pyknic Biotype

Previous Tx with OTR, PT, Orthopedics, +1.00  
near Rx with 1 BD prism OU with no  
improvement.

# Diagnosis

Convergence insufficiency , dry eyes, visual field defects, reduced VO Star, cranial strains, alpha-omega pupils #4, and RAPDX .18 defect

Visual midline shifts. Reduced EOM in Hess Testing revealed under action of the inferior and superior obliques in the left field and under action of the superior and inferior rectus in the right field. Shifts indicate cranial strain

Keystone skills exo pattern, no near fusion

- Analytical: Refraction was  $-.25$  OU, corrected to 20/20 each eye
- Distance phoria was 3 exophoria and vertical ISO
- Base out duction ( break/recovery) was 24/7 and BI 16/0
- Near phoria with a  $+1.00$  Rx was 15 diopters of exophoria with base out 10/-1 and base in 22/12, vertical OD was Supra 5/0, infra 4/0
- PRA  $-1.00$
- NRA  $+.75$

# Kinetic Fields

- Kinetic visual fields were done with a campimeter ( Figure 1. ) using a 1 degree white target revealed 7 degree field each eye, (Figure 2. ) A normal kinetic field is 60 degrees lateral field for this instrument. The blind spot was not measurable . This is loss of sensitivity in the ambient field , not a scotoma or absolute loss. Loss of sensitivity in the periphery reflects significant imbalances in the autonomic nervous system.

# Rehabilitation

At initial exam Pi-Omega was given for home therapy and weekly therapy begun to palliate the pain and headaches

Office therapy included Syntonic Rx of Pi-Omega/ Mu- Upsilon. Motor therapy included fusion with the SVI, Dynamic vision therapy with balance and movement, trans- binocular interactor.

Focal Syntonic on the EOM's: Focal or localized treatment with Syntonic light torches was prescribed: 2 minutes of red on insertion points of left superior and inferior rectus, red in inferior rectus right eye, blue superior rectus of OD. (red to stimulate the neurological motor function and blue to inhibit motor function.

Referral made to physical therapist to address cranial strains

# Regeneration

- After 6 weekly therapy sessions the patient reported some improvement in reading , no diplopia, better balance, but still suffered chronic fatigue and severe photophobia , but no headaches. The patient continued daily Syntonic phototherapy. Acuity was OD 20/30 and OS 20/25 ,NPC 12"/16", distance phoria 5 exo, near 9 exo Base out was 30/7 at far, 20/6 near. PRA-50, NRA +.75 . Pupils were still grade 4 alpha omega ,but the RAPDx pupil defect was reduced to .03 . This is well within normal limits. . Campimetry Fields were now out to 25 degrees each eye and blind spots were within normal limits. Hess fields revealed continued under action of right superior and medial rectus and under action of left inferior rectus in the left eye. Keystone skills were still showing exophoria and diplopia at near
- The pi-omega was replaced in the office and at home with the filter Delta-Omega. This filter combination is comprised with motor stimulant and motor depressant which acts to promote motor balance and allow for some stimulation by easing circulation . This improves blood flow to reduce the fatigue . The change was initiated because the headaches were gone and the kinetic fields greatly improved
- Near stress reducing Rx: +.50 prescribed.

# Progress

- Weekly therapy continued and another progress exam was completed after
- 6 weeks. The patient reports dizziness at nighttime, some diplopia, which can be eliminated with effort. Her photophobia was much less, but some motion sickness is experienced when balance is unsteady. Pupil reflex were now alpha omega #3
- Visual findings include : distance 4 exo, iso. BO 25/8 and BI 16/5,, near 7 exo, BO 22/8 BI 24/12 Pra -.50 NRA +150, Kinetic form fields were contracted, blind spots were enlarged, FDT field was normal for OD but 3 defects in OS. Hess Fields showed under action of SR and IO in OD, and over action of SR and IO in OS. ( figure 7 ). Von star revealed exo for each eye with OS the most disorganized.



# Impression

- Impression was: increased fusion, field defects worse ,vestibular imbalances still unresolved.
- Patient left for 2 month trip to Alaska. She was given home VT procedures and Syntonic home therapy to be continued.
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- She returned after 2 months and resumed therapy. Little home therapy was done while she was traveling. Visual fields were retaken at the onset and revealed fields were slightly improved but still constricted. Symptoms of dizziness and motion sensitivity persisted
- Therapy was resumed

# Progress

- Following twice a week therapy and 9 sessions another process exam was performed. The following test results revealed: normal findings on the Keystone skills far and near, VO Star was a bit exo but organizes the best yet, the Hess Fields showed complete ranges of fusion and all directions of gaze both far and near ( figure 8 ), campimeter kinetic fields we normal for form and blind spots OU. Phoria's were 2 exo far, 6 exo near, with distance BO 30/6 and near 24/12. acuity 20/25 each eye . Pupil examination with the RAPDx remained within normal range , alpha omega pupil reflexes were 2+ each eye. The patient reported she now was able to sleep 8-10 hour a night , balance was greatly improved, and there no headaches. She reported mild light sensitivity and fatigue reading. Her +.50 near Rx was still helpful. She requested another 6-8 weekly sessions. Her Syntonic Rx was now changed to Alpha-Upsilon (Red/Blue) and Mu-Delta (yellow/green). These filters are to build energy reserves and promote physiological balance.

# Restoration

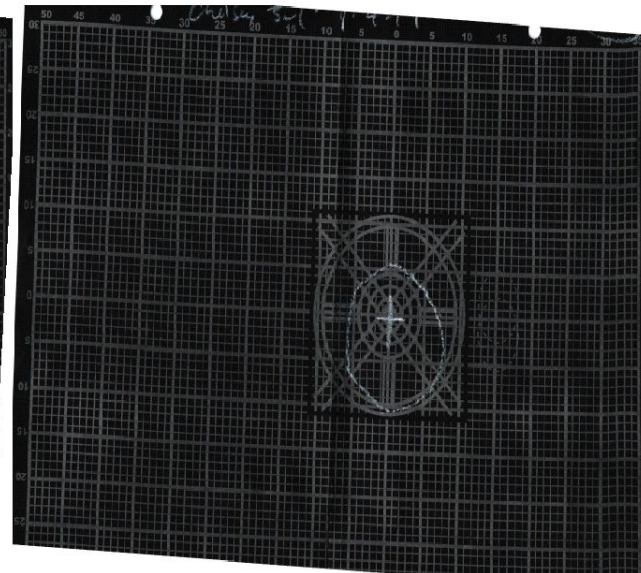
- At follow-up after 8 sessions revealed normal visual fields( figure 6) , acuity now 20/20 each eye , distance 3 exo with BO 26/12. BI 16/6, near 6 exo with BO 24/7, BI 18/12,PRA -.50, NRA +2.25.+1.75. . She had no complaints and was advised to continue home VT with fusion cards, Mu-Delta OU and continue her +50 near Rx, . A follow up at 3 months later revealed all ocular findings continue to be normal and she has remained asymptomatic. All therapy was discontinued at this point.
- When first seen the patient was still in sympathetic overload as evidenced by the alpha-omega pupil very small fields, reduced recoveries in her binocular ductions, and overall fatigue.
- As symptoms improved the filters were transitioned to Delta-Omega to restore energy. Then to alpha-Upsilon and Mu Delta to complete the restoration

# Initial Fields

Left eye

01/09/17

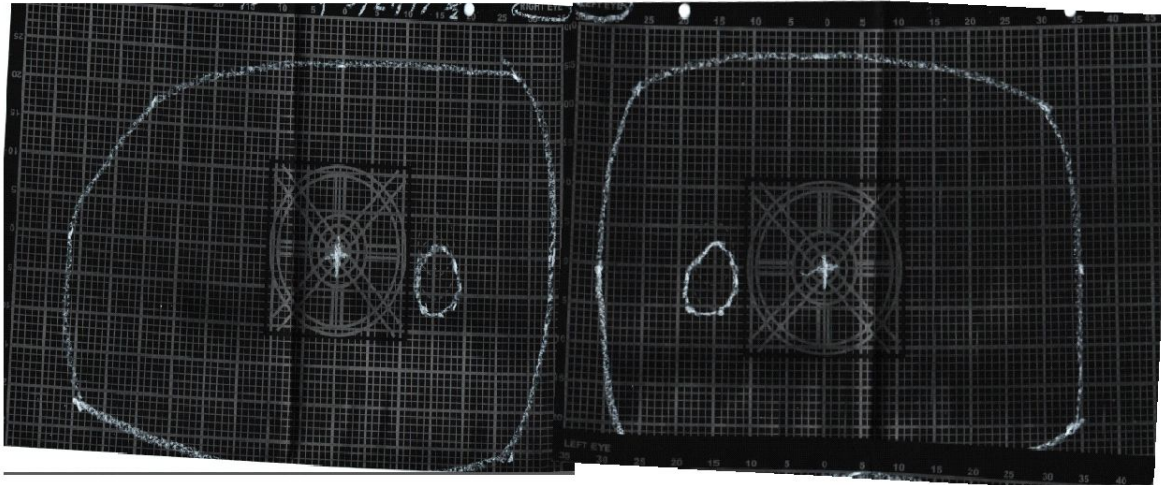
Right eye



# Post Tx Field

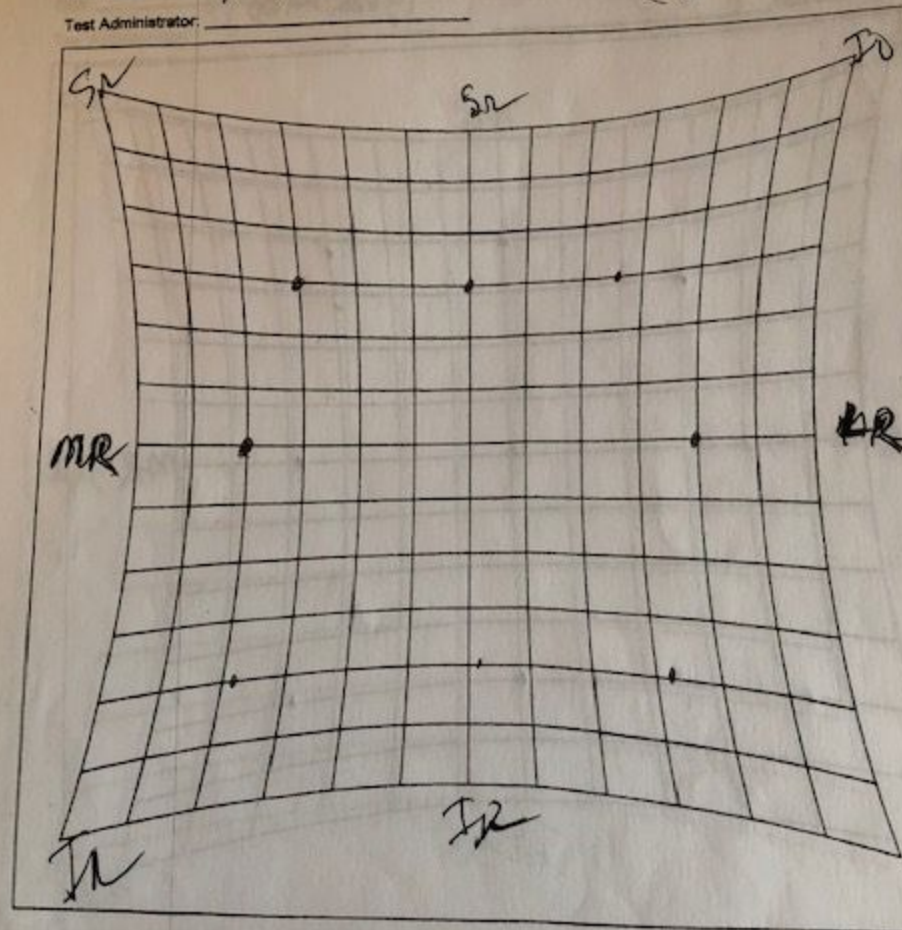
Right eye

Left eye



Date: 2/14/17

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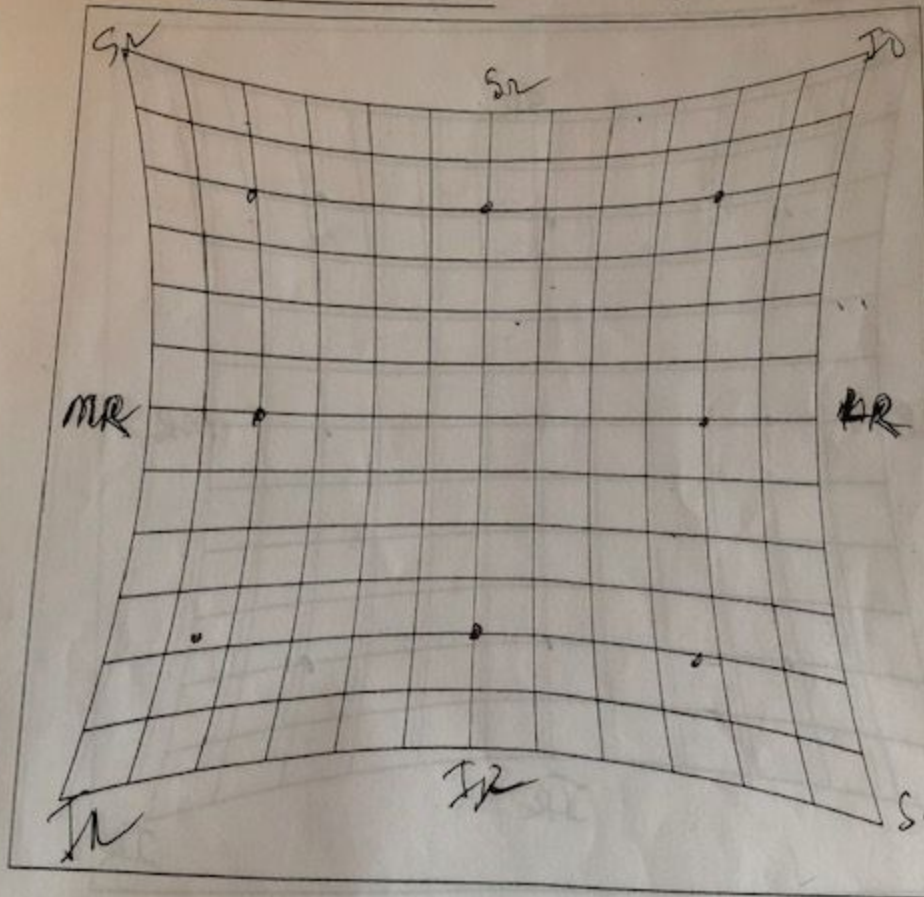


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