WILLIAM HENNING, N.D.,Opt.D.

THE
PRACTICE OF
MODERN OPTOMETRY
1939

Henning Approach

- The proper *color filter* is selected according to age, gender, symptoms and optometric 21 points findings analysis.
- This filter is applied *simultaneously with therapeutic lenses and prisms* for the purpose of training to normalize the pattern of reciprocal innervation between accommodation and vergence of the near visual reflex.
- Filters are edged to fit along with lenses and prisms into a trial frame with opaque sides to block extraneous light; the target is a backlit target at 16 inches.

To insure the maximum satisfaction in vision for the future

- In Henning's model, refractive errors are due to functional imbalance and, within limits, are reversible.
- For him, myopia & hyperopia can be reduced by an actual change in structure of the eye & not by forcing an excess activity of the ciliary muscles.
- Although prescribing a lens to compensate an error of refraction can relieve discomfort, merely to relieve symptoms is not enough.
- Effort should be made to reduce the ametropia via developing tolerance and natural compensation for ocular anomalies rather than depending entirely upon artificial compensation in the form of lenses and prisms.

Prescribing lenses and prisms for constant wear is an inadequate treatment

1. These should not be Rx'd until after psychophysiological disturbances are rebalanced as much as possible through Chromorthoptics.
2. When prescribing, don't overprescribe - the final full-time Rx should be only enough to produce adequate vision for the patient's needs.

Lens and prism Rx for constant wear should not be the primary goal but should be secondary to efforts at reconditioning.

OPTOMETRIC TESTING PRINCIPLE

- We are more interested in determining how the individual's ocular mechanism functions habitually than for finding the "accurate" refraction.
- Tests are made in order to obtain information about the patient's ocular difficulty. The findings are interpreted on the premise that any deviations from the expected are the result of general disorders, past or present.
- Any one finding (including #7) has very little meaning by itself but is of value only in relation to other findings.

"the eye is a part of the body", and the visual act consists of at least five major phases: the optical, the physical, the neurological, the chemical. and the psychological. Every one of these must be considered in every optometric examination and correction.

Ocular findings are primarily an expression of basic psychophysiological (emotional and systemic) disturbances.

The combination of color and orthoptic therapy sets in motion a train of psychophysiological changes which result in a redistribution of energy.

This harmonizes the ocular pattern but it does not stop there. These changes are transmitted to all parts of the body, and unless the condition has progressed beyond certain limits, the body will correct itself.

1. The fact that various physical conditions are associated with definite ocular syndromes does not mean that the physical condition is being treated.
2. We attribute the general improvements that often follow the reconditioning of a pair of eyes to the elimination of obstacles which interfere with the rebuilding powers of the body.
3. However, we recognize the limits of the body to readjust itself. Therefore, determine as near as possible whether or not there are any physical disorders with which the body is unable to cope without the aid of a physician.

The various ocular findings are considered as ocular manifestations of general disorder.

All symptoms and abnormal findings must always be evaluated in accordance with the age, sex, and other factors pertaining to the individual.

The question should always be – why, in this particular patient:"Why are the findings as they are?" "Why the esophoria in a given case?" Why a low recovery?"

INTERPRETATION OF OCULAR SYMPTOMS

- The indications in the analytical (21-point) examination usually give us sufficient data for intelligent questioning of the patient.
- If we know the common symptoms (findings) associated with various physical disorders, we are in position to draw fairly accurate conclusions about why the findings are as they are for this particular individual.

- It becomes increasingly clear that it is next to impossible to affect any function or part of the body without reflexively making changes in others.
- When I refer to the physiological phase, I mean those conditions or symptoms present which have been produced by some physical agent. whereas, when I mention the emotional phase, I mean physical symptoms and conditions which have, as their primary cause. an emotional disturbance of some kind.

"We employ physical means to affect the emotional condition and visa versa

- In actuality, it is very difficult, if not impossible, to affect one phase of the existence of an individual without causing some changes in the other. It is more a matter of which is affected first, and which the most. In other words, the physical and emotional phases of life, with their various sub-divisions, are so interrelated that it is practically impossible to make a separate study of any part, and under the most ideal conditions the body is an harmonious whole.

Henning's Basic Frequencies

- Alpha is a sensory stimulant
- Mu is a physiological stabilizer
- Delta is a motor stimulant
- Upsilon is a sensory depressant
- Omega is a motor depressant

The other frequencies either modify or intensify anyone of the four mentioned above.

Basis of Analytical Routine

1. Indigo ω, a motor depressant, is called for whenever there are signs of tension.
2. Blue-green μυ is indicated in cases of astenopia, pain or photophobia.
3. Red-indigo αω is indicated for lowered response in the involuntary systems (accommodation & pupil), associated with an emotional upset.
4. Yellow-Green μδ is a physiological detoxifier associated with correcting nutritional/digestive disturbances and retention of waste products.

Retention of Waste Products

Metabolic and digestive imbalance results in retention of waste products in the cells and tissues. These require a stimulus such as Yellow-Green μδ (or modifications on the red side) which tends to induce an increased flow of secretions, increased motor activity, and improved oxidation which have a cleansing or detoxifing effect on the cells and tissues through the circulation.

Findings that denote retention of waste products in the tissues.

1. Distance ductions both low
2. Near ductions both low
3. Vertical phoria
4. Cyclophoria
5. When all the following are low:
   - Static retinoscope finding,
   - Distance base-in duction,
   - Induced phoria at near,
   - Base-in duction at near.
6. When the accommodative amplitude is low in relation to the age of the patient.

21-POINTS TEST EXPECTEDS*

#1. Ophthalmoscope	neg
#2. Ophthalmometer	neg
#3. Distance habitual phoria**	ortho
#4. Near habitual phoria	6 exo
#5. Static retinoscope	+0.25 – +1.00
#6. Dynamic retinoscope	+1.00 – +1.75
#7. Subjective refraction	+0.25 – +1.00
#8. Distance phoria***	ortho
#9. Distance BO to blur	7 or more
#10. Distance BO break & recov	20/10
#11. Distance BI break & recov	9/5
#12. Distance vertical phoria.	neg
#13. Induced near phoria	6 exo
#14. Fused cross cylinder	+1.0-+1.75
#15. Near phoria through #14	6-8 exo
#16. Near BO blur-out, br & rec	14/21/15
#17. Near BI blur-out, br & rec	14/22/18
#18. Near vertical phoria	neg
#19. Accommodate amp push-up	Donders
#20. Near minus lens blur-out	-2.00 – -2.50
#21. Near plus lens blur-out	+2.00 –+2.50

Notes about tests

* Expected for ages 15-35 years; in younger children the blur-outs should be higher; after age 30 lower.

** The 200-foot letter for all tests except the blur-out tests in which the smallest read letters are used.

***This and the rest (not #14, of course) done with #7 in place until age 45 add +1.00 to #7, age 50 add +1.50, age 55 add +2.00, age 60 add +2.25, age 65 add + 2.50.

The question should always be "Why are the findings as they are?", "Why the esophoria in a given case?", Why a low recovery?".

HENNING'S
8-STEP ANALYSIS OF 21-POINTS
FOR DETERMINING THE FILTER Rx

STEP #1:
YELLOW/GREEN- μδ for Low Ductions.

If normal ductions, step #1 is NEGATIVE.

Low Ductions:

Call step #1 μδ X 1 – If only #10 & #11 or #16 & #17 low

Call step #1 μδ X 2. – If all are low

	Expecteds
#10. Distance BO to break & recovery.	20/10
#11. Distance BI to break and recovery.	9/5
#16. Near BO to blur-out, break & recovery.	14/21/15
#17. Near BI to blur-out, break & recovery.	14/22/18

STEP #2
BI, BO prism for phoria training.

1. Observe all phorias
2. If grand average is eso treat with BI.
3. If exo use BO in the treatment.
4. If borderline, or can't tell, step #2 is NEGATIVE

Training premise:
Reduce eso by forcing divergence (BI prism).

STEP #3:
RED-INDIGO αω for Low Accommodation

1. Compare #20 and #21 Findings
2. Use αω if #20 low relative to #21.
3. If minus more than plus, step #3 is NEGATIVE.

#20. Minus to blur-out at 16" -2.00 to –2.50
#21. Plus to blur-out at 16" +2.00 to +2.50

Must take age into consideration.

STEP #4:
REVERSED phoria/ductions at distance.

Call step #4 NEGATIVE if phoria and ductions agree.

Call step #4 POSITIVE if phoria and ductions are reversed.

1. For esophoria – train with BO despite the esophoria if BO ductions are low and BI are high or normal.
2. For exophoria – train with BI despite the exophoria if BI ductions are low and BO ductions are high or normal.
3. Train until the ductions are in agreement with the phoria.

E.G., if #8 was 2 Eso. but #10 were 8/4 and #11 were 10/6, the #10 finding would be relatively lower than #11, which is contrary (reversed) to what we would expect.

STEP #5:
αω or μδ for Low Duction Recoveries
Reproductive-Emotional vs. Nutritional-Toxic

αω for BO recoveries #10 & #16 definitely low
RX2 if both low – RX1 if either low
R = reproductive-emotional past or present pelvic problems: sex organ, genitourinary tract, thyroid and emotional difficulties. (Sympathetic)

μδ for BI definitely low #11 & #17 recoveries
NX2 if both low – NX1 if either low
N = nutritional-toxic: past or present metabolic, nutritional disturbance, gastric, renal, hepatic congestion, etc.(parasympathetic)

If recoveries normal call step #5 NEGATIVE

STEP #6:
Additional μδ Indicators

Findings that suggest retention of waste products in the tissues (metabolic disorders):

1. When ***all four*** of these are low:
   #5 - static retinoscope; **#11** far BI duction;
   #13 induced near phoria; **#17** near BI duction
2. *Vertical imbalance* at far **#12**, near **#18,** or both.
3. When there is *cyclophoria*.
4. When low **#19** (push up accom.) relative to age.

When several are low, call step #6 μδ X N.
If no indications call step #6 NEGATIVE.

STEP #7:
Omega ω for signs of tension

1. Low BO to blur at far; #9 (<7)
2. Near BI and BO to BLUR-OUT both low
   (total combined #16 & #17 blur-out for:
   kids <24, young adults <20 , less for older)
3. **#20 & #21** low –
   the sum of plus + minus lenses to blur-out at near is low (<4.50 D for kids, <4.00D for young adults);
4. BI ductions **#11 & #17** and near plus blur-out **#21** are relatively **lower than** BO ductions **#10, #16** and near minus blur-out **#20** for non-exo patients.
5. Call step #7 NEGATIVE when there is pain or the above findings are okay.

The Ocular findings that denote Tension or Irritation

1. When any of the blur-out tests are low
   1) BO & BI duction blur-outs and
   2) Minus and plus lens blur-outs
2. When both far and near base-in ductions and relatively lower than the base-out ductions and the plus lens blur out minus lens blur out (for non-exos)
3. This is age dependent with higher norms for children and lower as in adolescent, adult and older.

EMOTIONAL UPSET

LOOK FOR SIGNS OF EMOTIONAL UPSET

- nervousness irritability
- rapid pulse irregular breathing
- tenseness (e.g., around the eyes or mouth)

CORROBORATED BY SUBJECTIVE SYMPTOMS

- inability to sleep, frequent crying spells
- Fearful dreams, e.g., falling from a height.

Alpha-Omega, the emotional stabilizer, is usually the most effective frequency.

Step #8
μυ for Pain and inflammation

Mu-upsilon μυ and related filters for pain and inflammation (asthenopia, discomfort, photophobia) associated with findings of step #7.

Call step #8 NEGATIVE when there is no discomfort

Henning's Approach to Treatment

Treat only with color (without lenses or prisms) if findings vary radically during the exam or when high exo distant/high eso near. Or *visa-versa*.

PALLIATE FIRST

- If patient has symptoms make them comfortable by treating with BLUE side before RED.
- **If patient comes that day to treatment with symptoms** – pain, burning, strain, discomfort, anxiety, agitation, photophobia**. Palliate for only until symptoms subside and then continue with regular treatment.**

PALLIATIVE FREQUENCIES

BLUE-INDIGO-VIOLET induce dilation; relaxation; decreased secretions; increased absorption; pleasure, relief, etc.

CORRECTIVE FREQUENCIES

RED-ORANGE-YELLOW – induce stimulation; constriction; intensification; increased spasm; increased secretions; increased metabolism; decreased absorption; and increase pain and discomfort.

How long to treat?

An average training period of about three minutes is adequate for most young patients; an average of about five minutes for the middle aged, and six to eight minutes average for elderly individuals.

Treatment with a particular color is finished when the patient exhibits a behavioral or physiological response.

To become proficient in this work, practice this method of observation. The beginner will have some difficulty because sometimes these changes are very slight, and should he be unable to observe any of them,

- A reliable response of a purely visual nature is that of after image. Have the patient either close his eyes or look away from the instrument at some white object, and ask him whether he sees any color. If so, inquire what color. If you are using one of the frequencies on the blue-indigo-violet end, and the patient sees one of the shades on the yellow-orange-red end, it denotes that the body is setting up a defense against the stimulus, and it is a sign for termination of treatment. On the other hand, if a frequency on the yellow-orange-red end of the spectrum is used and the patient sees one of the shades on the opposite end, it is enough for that time.

Note #1.

1. Whenever all the ductions are low, the individual is chronically ill whether the patient knows it or not.
2. If the findings indicate GREEN-YELLOW but there is discomfort at the time of treatment use GREEN-BLUE or related frequencies until the symptoms subside. Under such circumstances do not apply a corrective frequency at the same visit.
3. GREEN-YELLOW: for complications denoting metabolic disorders (cleansing for retention of waste) "the following demonstrable activities are set in motion: 1) an increased flow of secretions; 2) increased motor activity (convergence); and 3) improved oxidation. These have a cleansing effect.
4. The need for GREEN-YELLOW increases with age beyond 25 years. Retention of waste may be due to one of several causative factors, such as overeating, insufficient rest, or other forms of abuse.
5. In children with GREEN YELLOW indication ask about diet, and unless that can be cared for, if it is faulty, the prognosis is doubtful.
6. Related frequencies to GREEN YELLOW
   - RED-YELLOW is a respiratory stimulator. Use if the patient's breathing is very shallow.
   - RED-BLUE stimulates vaso-constriction – not much used with kids but for teens until 50 years can help low blood-pressure and deficient abdominal circulation.

Note #2

1. The prism power used in treatment is the duction recovery point of the opposite near duction recovery of the phoria (e.g., eso uses base-in prism to train).
2. The duction is re-measured befor the next treatment and the new recovery finding is used for that treatment. This is measured at the distance of the treatment.
3. If the recovery point is less than zero, the starting training prism is the actual amount of the recovery. – e.g. if a high eso has a BI recovery of 4/8/-4 (4 BO) the starting prism would be 4 BO.

Note #3.

Emotional disturbance may be financial worries, a disappointment in love, bereavement, mismating, nagging, etc. sufficient to cause the retention of waste because any emotional disturbance interferes with circulation and the metabolic processes in general.

Alpha-omega αω, the emotional stabilizer Increases weak responses in the involuntary system (as in reduced accommodation and pupil responses) associated with emotional upset.) Alpha-omega αω is called for when the minus lens to blur at near is low relative to plus.

Note #4

Alpha-omega related frequencies:

1. Alpha-delta αδ and alpha-upsilon αυ are intensifiers;
2. ω and υω are modifiers.
3. To differentiate which to use when, consider age, sex, environment, behavior, appearance, and genes:

Under 10 years and underweight suspect retarded glandular development αυ due to malnutrition, over-attention, shock, etc.

- Start with αω and watch for improvement. If response is minimal, try αδ for a few sittings.
- If still sluggish, combine minus with αω. (-0.50 and add -0.25 steps until -2.00.)
- If still slow add two to four diopters of base-in prism. If no response it is likely a medical problem.

For ages from 10 to 25 years emotions play a greater role, and RED-BLUE is more effective than RED-YELLOW should RED-INDIGO be inadequate.

Note #5

When both RED-INDIGO and GREEN-YELLOW are called for in a case with an emotional background, it is well to use RED-INDIGO first and finish with a minute or two of GREEN-YELLOW.

From 25 to age 45 years GREEN-YELLOW and RED-INDIGO are of equal importance unless GREEN-YELLOW is called twice.

Above 45 years GREEN-YELLOW becomes increasingly important and the need for RED-INDIGO and it's related frequencies diminishes.

Note #6

Low base-in recoveries indicate alimentary canal problems (metabolism, nutrition, digestion, growth, rebuilding). Low base-out recoveries relate to sexual/pelvic disorders.

Under age 10, low base-out recoveries indicate a retarded glandular development calling for RED-INDIGO and related frequencies. Low base-in recoveries indicates nutritional disturbance with GREEN-YELLOW and related frequencies called for.

Under age 10 when all other findings are satisfactory but all recovers are we conclude that all physical reserves are low and the patient is emotionally disturbed.

Ages 10-25 with low BO recoveries may result from emotional upset, venereal disease, obstruction or inflammatory process. The most common emotional disturbance in optometry, especially in teens and young adults with ocular discomfort but little refractive error, is due to sexual repression or neurosis.

Note #6 cont.

Younger women may have scanty menstrual flow leading to retention of waste localized in the pelvis resulting in a mild inflammatory condition. Menstrual disorders or sexual repression may cause acute inflammatory processes in the tubes, ovaries, and vagina.

In some cases venereal infections may be the cause. In women past middle age, low base-out recoveries is indicative of inflammatory processes of the pelvis, chronic or acute, manifesting in the form of an ovaritis, endometritis, malignant or benign tumor, or purely a climacteric chain of syndromes commonly found during the menopause.

In middle aged men, suspect disturbances in prostrate, bladder, or perhaps adrenal. Either refer to physician or try a few treatments of RED-INDIGO frequencies and re-test the recovery points. If improvement, the cause is emotional. If no change, try GREEN-YELLOW. If still no improvement, refer.

Note #7

The emotions are closely related to reproductive organs because signs of emotional upset (irritability, hypertension, rapid heart, hyperthyroidism) usually accompany pelvic disorders.

Reproductive and alimentary systems interact and emotional problems may lead to loss of appetite, spastic constipation, and digestive disorders. You can tell the difference if the digestive problems are relieved by modifying the emotional upset.

General physical disorders become more complex and the individual less responsive with age.

If the low base-out recovery findings do not immediately come up after a few sessions, the case is not amenable to orthoptic training alone. If the syndrome is due to a focus of infection, the patient may be temporarily relieved but the findings usually remain about the same.

Note #8

- INDIGO is indicated when #7 findings are associated with nervousness or irritability (but not pain). Inquire about general symptoms of nervousness, sleeplessness, and other signs of tension due to emotional disturbance.
- The tension which is manifest in the ocular pattern very likely exists throughout the body, interfering with circulation which results in retention of waste products. INDIGO also increases circulation.
- The application of INDIGO, together with base-in prisms during the training period, induces expansion. This removes the interference to circulation, which will quickly carry away the accumulated debris.
- INDIGO: for signs of tension as in eso and low base-in findings. Treatment with INDIGO is used with base-in prism equal to the base-in recovery. INDIGO is a motor depressant and induces expansion to lead the eso to expand out into space.
- In younger age groups (under 45 years) INDIGO is very effective. In older patients with high blood pressure try YELLOW-INDIGO to lower the pressure, then continue with INDIGO until findings improve. Follow with GREEN treatments once a week for a few weeks to stabilize.
- Related frequencies are BLUE-INDIGO which intensifies its action, and YELLOW-INDIGO is a modifier.

Note #9 Pain

1. GREEN-BLUE Mu-upsilon: for pain as in asthenopia and photophobia.
2. BLUE and BLUE-INDIGO are intensifiers, GREEN is a modifier.
3. For severe pain, begin with BLUE-INDIGO until the symptoms change. Usually a minute or two is sufficient for the patient to report a slight amount of relief. Then BLUE until even more relief (usually only a minute or two); then GREEN-BLUE for three or four more minutes.
4. If the patient returns with reduced symptoms start with BLUE for a minute or two, then GREEN-BLUE.
5. Whenever GREEN-BLUE or related frequencies are called for, GREEN-YELLOW is substituted if no discomfort is present at the time of treatment.
6. When a patient is treated entirely according to subjective symptoms, relief from discomfort is the guide to response.
7. In cases of discomfort is it is important to give a treatment every day, or even twice a day, until the symptoms have subsided. After that, two or three times a week is usually quite satisfactory.
8. Responses in older patients are relatively slow, which requires more extreme stimuli. But if the subjective symptoms are such that intense stimulation aggravates the symptoms due to localized tissue irritation, begin very cautiously and modify the more important manifestations for the purpose of obtaining immediate localized relief.

Note #10

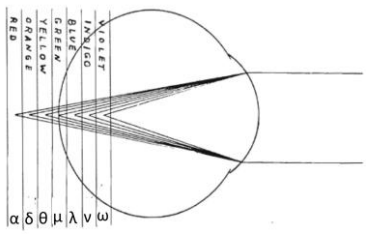
When the patient does not fully respond

- The general improvements that very often follow the reconditioning of a pair of eyes by this method is attributed to the fact that the human body is self-adjusting. All that man can do is to remove obstacles which interfere with the compensatory and rebuilding powers of that body.
- However, we recognize the limits of the body to readjust itself, when the patient does not respond, i.e., if the symptoms of discomfort do not subside or in case of lowered visual acuity does not improve. In most cases, if there is relief from symptoms or no improvement in vision, there is also a change in the findings toward the expecteds. But that is not imperative... it is only desirable .... and usually does happen.
- If the changes in the patient's subjective symptoms are satisfactory and the findings do not change, then we use localized ocular training as commonly employed in the past, except that we do this as a last resort, whereas formerly, such localized methods were employed in the beginning.

Henning's photopsychophysiological model

1. Optimizing symptoms of psychophysiological imbalance due to:
   - N = Nutritional and waste retention symptoms.
   - R = Reproductive, pelvic and tension symptoms.
2. N. The red end works to stimulate nutritional **(N)** and waste retention functioning.
3. R. The blue end works to relax tension and improve Reproductive **(R)** function and emotional tension.
4. These effects are brought about by relieving imbalances in visual reflexes diagnosed via 21-Point Analysis and not directly on the physiology.

Due to chromatic aberration,
To focus red light, the eye must increase dioptric power
It acts like a minus lens
To focus blue light the eye must relax dioptric power
(similar to what a plus lens does)



Accommodation = sensory/involuntary
Vergence = motor/voluntary

Use BLUE side to relax:
MYOPIA is over-focus – use υ (sensory depressant)
ESO is over-convergence – use ω (motor depressant)

Use RED side to strengthen:
HYPEROPIA is under-focus – use α (sensory stimulant)
EXO is under-convergence – use δ (motor stimulant)

– Chromorthoptics –
Using prism, lens & color combinations to normalize ocular reflexes

1. Whenever minus lenses are indicated to stimulate dioptric focus, alpha (a sensory stimulant) is also called for.
2. When prism base out is used to strengthen an exo's under-convergence, delta (a motor stimulant) works best.
3. Should plus lenses be indicated to inhibit over-focus (myopia), upsilon (a sensory relaxant) is most suitable.
4. In cases needing to relax over-convergence using prisms base in, omega (a motor relaxant) is used.

Without both lenses and prisms and specific light frequencies the treatment is incomplete.

1. Lenses and prisms change the pathway of light and filters change the composition of light.
2. The main difference is that the effect of the former is more localized and the responses of the latter are more general (physiological).

REDUCING AMETROPIA AND HETEROPHORIA

1. These procedures assume completion of initial training to reduce symptoms and ocular signs of related psycho physiological problems. Some reduction of the ametropia and phoria may have resulted from the first training processes.
2. To decrease myopia, UPSILON, the sensory depressant and plus lenses are given.
3. For hyperopia, the sensory stimulant, ALPHA, and minus lenses are given.
4. To decrease eso, the motor depressant, INDIGO and base-in are given.
5. For exo reduction, the motor stimulant, DELTA, and base-out are given
6. It is important to give occasional REST PERIODS of one or two weeks during these procedures because postural changes are transmitted to all parts of the body and, therefore, cannot be done hurriedly. Furthermore, the process is partly that of establishing new habits, which must also be done slowly, if permanence is to be expected.
7. The possibility of reducing ametropia decreases with age.

PHORIA TRAINING

(Henning's idea is this:

The patient will adapt by returning to the habitual phoria posture through the prescribed prism. If an orthophoric patient wears two base-in, the immediate phoria is two eso. But being accustomed orthophoria, the patient, after wearing two base-in full-time, would eventually adopt an ortho posture through the prism. [Remove the prism and the patient would measure two exo]. This happens each time two more base-in are added. Base-in training with INDIGO aids this readjustment.

ESOPHORIA

1) Start in-office training using INDIGO combined with base-in prism (equal to the near base in recovery).

2) Prescribe two base-in prism for constant wear. Being accustomed to the habitual phoria, the posture will readily change to revert to back to the original convergence through the prisms. After the phoria reverts back to the original phoria, add two more base-in.

3) Add more base-in until the total is two more than the initial esophoria at far.

4) Now reverse the process. In two prism diopter steps, remove base-in from the prescription. Training is continued using INDIGO and base-in in order to hold the new postural position. Remove two base-in, making the phoria two less eso. If this reduction holds, two more base-in are removed, reducing the phoria measurement again until exo is measured through no prisms.

ESOPHORIA

5) Continue training with base-in and INDIGO to hold the new ortho or slight exo posture.

For high ESOPHORIA at near when all other findings are satisfactory and no symptoms: Prescribe an hour or two of reading every day through prisms base-in.

How much prism? If the recovery for base in near duction is high 12 or more, give 70% of the recovery; if recovery is 8, prescribe the whole value of the recovery; if the break is high (16) but the recovery is low, prescribe half the break; if both break and recovery are low, give what the patient will accept and increase it as rapidly as the patient will tolerate until six prism diopters has been reached.

Advise the patient to take one minute rest periods every 10 to 15 minutes, recline with eyes closed (palming) to relax the whole body and mind. In most cases a week to ten days is sufficient to break down the old habit.

Often training prisms are supplied through fit-overs used for reading.

EXOPHORIA

1. This is done as in esophoria but prescribing base-out prisms full time and training using base-out.
2. Train with RED-YELLOW, YELLOW, and GREEN-YELLOW.
3. Often low plus spheres must be incorporated to prevent a possible accommodative reflex, especially in children and young adults.

HYPEROPIA

Hyperopia is an indication of a lowered tonus in the involuntary muscle system (cilliary). Occasionally it is possible succeed with someone near forty but for patients past age 30, it is often necessary to prescribe for most of the ametropia. RED-YELLOW, RED-BLUE, RED-INDIGO, YELLOW, AND GREEN-YELLOW frequencies are all indicated for reducing orthophoria hyperopia unless retarded glandular development or reproductive (emotional) disturbance is indicated.

1) Reduce plus and astigmatism (if any) by 0.50. for constant wear. Care must be taken to guard against accommodative/ convergence, so add a small base-in to the Rx.

2) Train with the above frequencies combined with minus (or less plus) lenses and base-in. The minus-to-blur at near is the guide. When the minus-to-blur exceeds the plus, reduce another 0.50 of plus, and continue training to again increase minus-to-blur at near.

3) Repeat the process until the hyperopia is eliminated. When vision is 20/20 without lenses, give -0.5 for constant wear.

4) Continue training remembering to give two weeks of rest between lens changes. Eso's and exo's require a slight difference in training procedures. Hyperopic esophores require base in prisms and RED-YELLOW, RED-BLUE and RED-INDIGO. Hyperopic exophores use base-out and RED-YELLOW, YELLOW, and GREEN-YELLOW. Train with the above frequencies, using two at each sitting. Start with the more extreme followed by the more moderate frequency.

(E.g., eso's get RED-YELLOW for several minutes followed by RED-INDIGO on the first day, and RED-BLUE followed by RED-INDIGO on the second. This cycle is repeated until the accommodative finding improves. Exo's start the first visit with RED-YELLOW and then GREEN-YELLOW. Next day YELLOW is first followed by GREEN-YELLOW. This pattern is alternated.) If possible, try flashing.

Treatments might take six months or longer (with occasional ten day to two week rest periods). If the minus-to-blur goes up rapidly, the patient is apt to respond favorably; if the response is slow, the process will likely be long; and if no change takes place in the minus-to-blur, the patient is probably out of luck at this time. Henning suggests trying again several months later.

MYOPIA—OVERVIEW

- Henning bases his approach on the AC/A reflex in which divergence induces relaxation of focus. He attempts to artificially produce esophoria of six prism diopters for every diopter of myopia and then provoke myopia reduction through less plus and base-in training with the appropriate frequencies.
- 1) Reduce minus and add base-out for full-time wear
- 2) Train with sedative frequencies and base-out. The aim is to increase esophoria without increasing the myopia.
- 3) When the induced phoria reverts back to the habitual, add two more base-out to the Rx.
- 4) Repeat until the esophoria equals the myopia (see above).
- 5) Cut minus and base-out from the Rx.
- 6) Train with sedative frequencies, plus lenses, and base-in to reduce myopia.
- 7) As acuity improves, cut minus and base-out.
- 8) Repeat the entire process until the myopia is gone.

MYOPIA cont.

Lens prescription: cut the minus by half of the subjective (or by one diopter for cases of two or more diopters of myopia) and add two prism diopters base-out, for constant wear. Distance acuity should be about 20/40-20/60. The phoria should increase by two exo through the Rx. Being accustomed to the habitual phoria, the posture will readily change to revert to back to the original convergence through the prisms. To aid this readjustment, base-out treatments (using the near duction base-out recovery) combined with sedative (inhibited) frequencies BLUE-INDIGO, INDIGO, YELLOW INDIGO,

BLUE, and GREEN-BLUE are given to inhibit focus.

Use two different frequencies during one training period, beginning with a more extreme for a minute or two, then two or three minutes with a more moderate frequency. BLUE-INDIGO and BLUE for the first, INDIGO and YELLOW-INDIGO for the second, BLUE-INDIGO and YELLOW-INDIGO next, followed by INDIGO and GREEN-BLUE, and the whole procedure is repeated.

When the phoria through the distance Rx returns to its original posture, take a two week break from training, and then add two more base-out and repeat the training procedures until the esophoria becomes five times the dioptric value of the myopia or reaches ten base-out.

MYOPIA cont.

1. At this point, remove two base-out is removed from full-time prescription and train using the sedative frequencies as before but *now train with base-in (base-in near duction recovery) and* plus to induce inhibition to both convergence and focus. When the patient has reverted to the habitual phoria, a small amount of myopia will also have been eliminated (0.25 to 0.50 reduction).
2. Check acuity often and when vision through the Rx improves to 20/20 or 20/25, prescribe 0.50 less minus and two prism diopters less base-out for constant wear.
3. Continue the training, changing the training prism as the base-in duction recovery increases. Reduce two more base-out from the Rx when the phoria reverts. Check acuity to remove more minus from the Rx.
4. When all the prisms have been removed, give the patient a rest period of two or three weeks. Then if the acuity stays clear, again reduce the Rx by half (or one diopter if myopia is over -2.00), add two base-out for full time wear, and repeat the training using base-out and the sedative frequencies as before.
5. Very often it is necessary to repeat the entire procedure because only a small amount of the myopia was eliminated during the first series. Each time more of the myopia should be eliminated until the ametropia goes into slight hyperopia or the patient reaches the limit of change. If the patient returns after three to six months, the process can be repeated and more myopia can be eliminated.

AMBLYOPIA
TRIAL AND ERROR METHOD

- Apply ALPHA/OMEGA first for two or three minutes
- Then apply MU/DELTA, the physiological stabilizer in a similar manner.
- Test vision after each trial to determine which produced the greater improvement. Proceed with the one that worked best.
- The trials should include periods where the better eye is occluded and the amblyopic eye continues to look for 20 sec. with the light flashing. (The light is off twice as long it is on – i.e., 1 sec on/2sec off)
- If the effect of both is about equal, alternate ALPHA/OMEGA and MU/DELTA either during the same treatment or for one sitting and from one day to the next
- Should MU/DELTA produce a much greater improvement than ALPHA/OMEGA, the case is very likely toxic amblyopia and MU/DELTA is the proper frequency to use until the vision is satisfactory, or there is no further improvement.
- If vision has been improved in the amblyopic eye, say, from 20/300 to 20/100 with ALPHA/OMEGA and MU/DELTA but VA has plateaued, try ALPHA/DELTA for that eye only, by occluding the good eye.

AMBLYOPIA EXAMPLE

- Male 24: 6 eso Far/ortho Near Initial; VA wearing OD +2 D. 20/20; OS +4 D. 20/400. w 6 eso dist/ortho near. Hx measles age 3 + chronic digestive problems
- Different filters given for each eye using a stereoscope type device:

  a. OD – Mu and OS – Alpha/Omega to start, followed by two minutes of Mu Delta (with intervals of flashing as above). After 14 sessions over 3 weeks improved VA - OD 20/15 OS 20/40.

  b. Rx then changed to +1 D & +2 D with prism B.I. After 8 visits using O.D. Alpha/Omega and O.S. Alpha/Delta. VA was OD 20/15, OS 20/20 with low recoveries for all ductions.

  c.

- In addition: color field charting, the mapping of blind spots, transilluminations, and taking of blood pressure or any other test the examiner wishes to make as corroborative evidence, such as stereopsis, reading rate, etc.