

“Visual Orthotics”: Sculpting the Field with Non-Compensatory Cyl

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Prescribing Non-Compensatory Cyl

- We are working with patients who have been referred by physical therapists for **visual limitations affecting body organization**.
- Binocular perceptions of depth and volume of space impact:
 - Posture,
 - Movement,
 - Balance and
 - Gait.

Prescribing Non-Compensatory Cyl

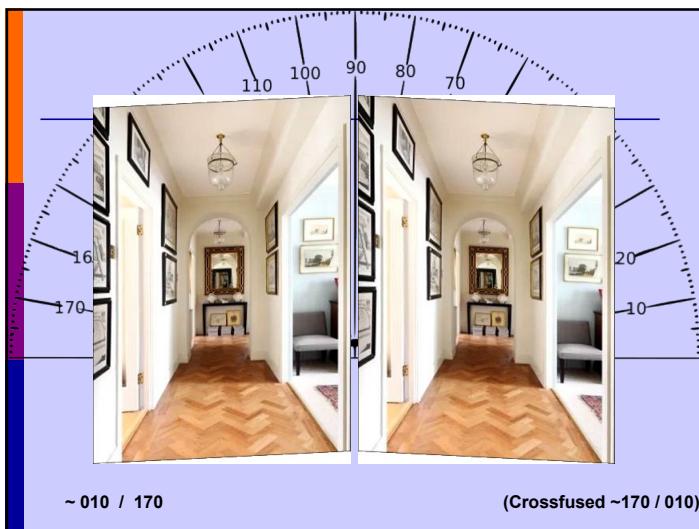
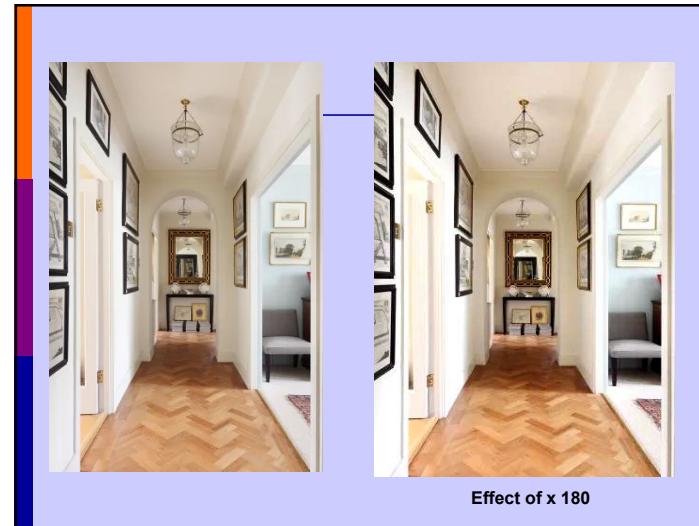
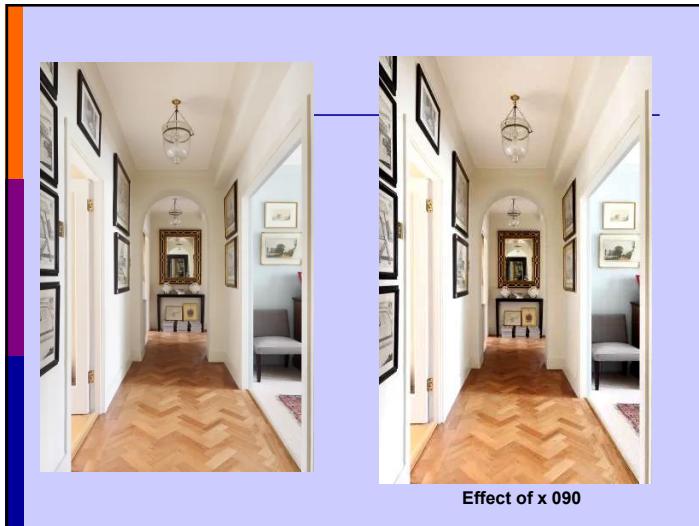
- Lenses can serve as “**visual orthotics**,” changing how one organizes the body around the visual perception.
- A key aspect of this application is to provide an enhanced awareness for each percept as part of a **complementary pair**.
- The complementary binocular inputs enhance engagement through both eye-channels.
- We are finding that this leads to enhanced stereopsis as well as improved reciprocal engagement across the body midline when moving in space.

Value of BINOCULARITY in body organization

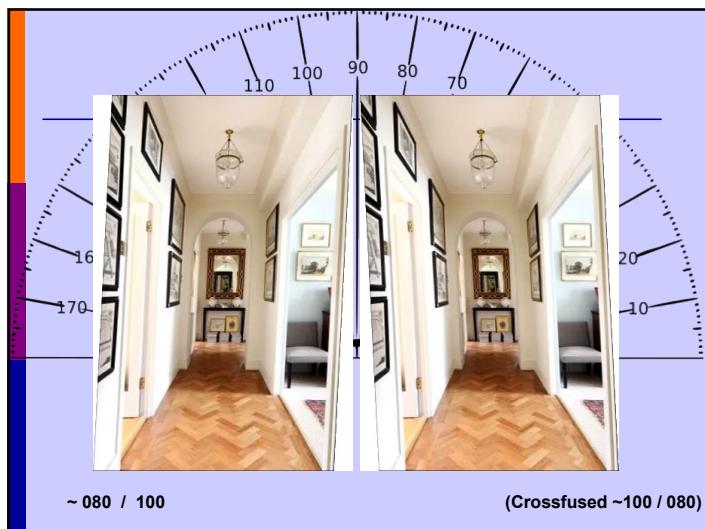
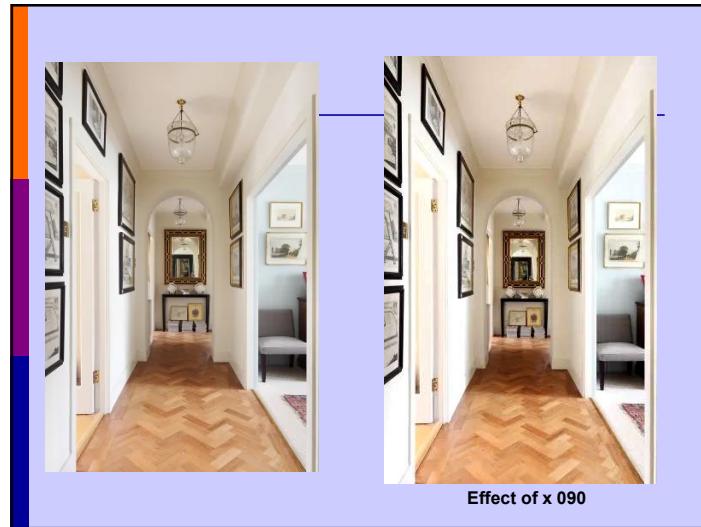
RAMPS: Uphill and Downhill:

- Each eye experiences a monocular skew:
- Only when the two eyes are PARTNERED does the world-view make sense.
- Amplifies 3-D/4-D perceptions
- Especially valuable with cases of binocular dysfunction:
 - Passive form of vision therapy.
- Creates new / enhanced value from the deficient eye-channel.
 - Two images are not redundant.
 - They are **COMPLEMENTARY**.
- Each perception is “looking for” its partner.

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Value of BINOCULARITY in body organization

RAMPS: Uphill and Downhill:

- ❑ Binocularity marries the left and right visual fields, providing TWO sets of input for each.
- ❑ Results in:
 - Immediate enhancement in abdominal oblique activity
 - Reciprocity at hips
 - Head righting in field
 - Changes in weight of the step: Less need for percussion against the ground in order to find the floor!

CONTRAST: Yoked BU⁺ vs x 170 / 010

CONTRAST: Yoked BD⁺ vs x 010 / 170

Example, DS; 68yoF

- ❑ H/o X(T)
- ❑ Referred by PRI provider: Would not take on until she addressed vision.
- ❑ Habitually, sc.
- ❑ NV: Occ'l +1.75 or +2.25 OTC use
- ❑ Ret: Subj (=Bal):
 - OD -0.25 -0.25 x **105** OD -0.50 -0.50 x **030***
 - OS +0.25 -0.25 x **038** OS +0.75 -0.25 x **045**

* **OD subj:** switched from bi-ocular to monoc testing.

* Variable, inconsistent cyl OD, Fan chart, JCC.

* This is the partner waiting for the other eye to take the lead.

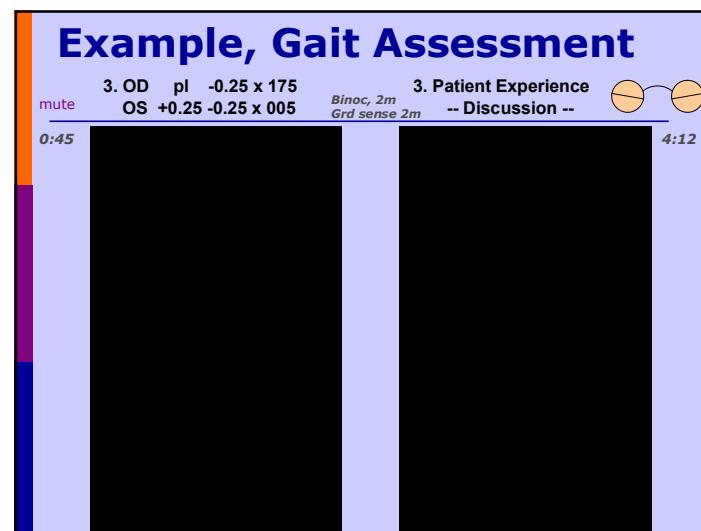
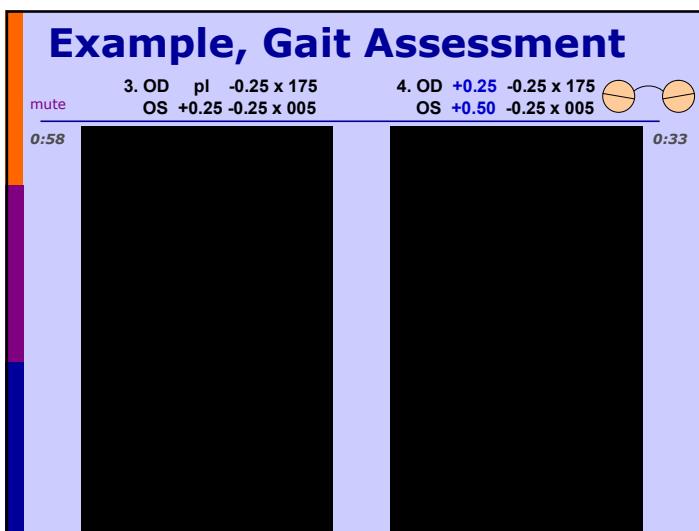
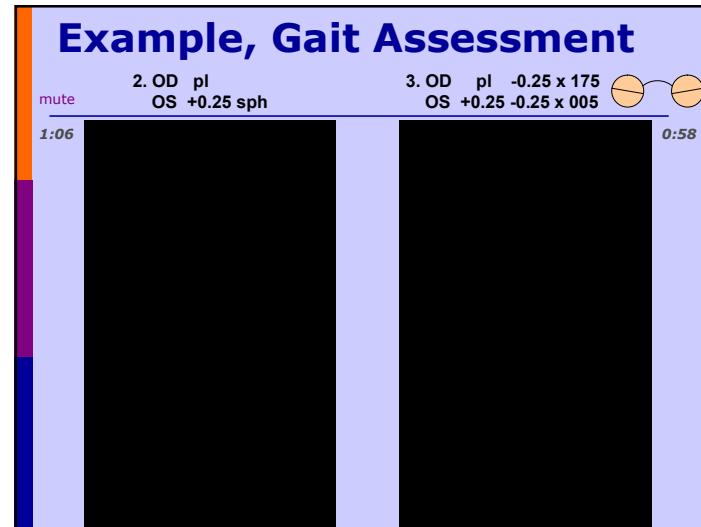
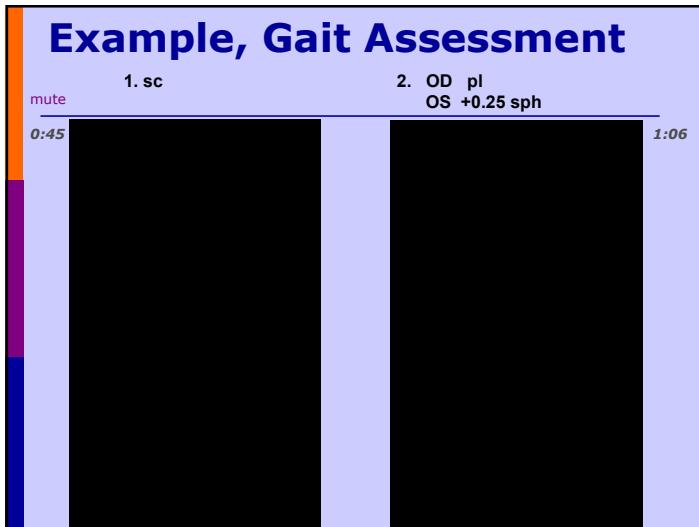
Example, Gait Assessment

1. sc

2. OD pl
OS +0.25 sph

*Gait only ~ 4:15
Commentary ~6-8m*

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Gait observation → Intervention Example, DS; 68yoF

- 1: sc:
 - Torso bias to R.
 - Arms pronate.
 - LF fwd/ RF out
- 2. TF, pl OD/ +0.25 OS
 - Hips tight, neck tight, but gait quieter
- 3. TF, pl -0.25 x 175 +0.25 -0.25 x 005
 - Right eye **invited** to participate, **"Your hand m'dear"**
 - Footfalls lighter!
- 4. TF, +0.25 -0.25 x 175 +0.50 -0.25 x 005
 - Back extension!
- → Added +0.25 OS
- → Added -0.25DC, "downhill ramp":
 - pl -0.25 x 175 +0.25 -0.25 x 005
- This is good! Confirm it is optimal:
 - Checked impact of add'l +0.25 sph OU
- → Retain TF #3
 - Test impact on VA, stereo, etc.

Explore "Ramps," via YP vs Cyl (Lens sets 1-4)

Downhill Ramp, like BU YP

- (1): -0.25 DC x [095 / 085]
enhance effect: [105/ 075]
- (2): -0.25 DC x [175 / 005]
enhance effect: [170/ 010]

Uphill Ramp, like BD YP

- (3): -0.25 DC x [085 / 095]
enhance effect: [075/ 105]
- (4): -0.25 DC x [005 / 175]
enhance effect: [010/ 170]

Summary

- Visual field shifts can be generated with symmetric offsets around the major axes ("ramp up" and "ramp down").
- The skews this creates to the visual input of each eye can amplify the value of the eyes partnering (i.e., invite binocular fusion and enhance stereo).
- These "ramp" lens interventions help patients neutralize the pelvis and anterior/posterior imbalances of weight over the feet.
- It is my hope that this presentation will inspire you to experiment, PLAY, and give you some basic guidelines for helping your patients orient and organize themselves to their environment.

Questions for Discussion

- How does *past experience with movement* impact the potential for a person to *respond to subtle lens changes*?
- What can we optometrists do to help communicate with physical therapists/ movement specialists in our communities *the potential for visual input to support physical therapy*?

Discussion

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