

## Experience EXPO With Us!



- **Innovation Stage - Exhibit Hall – The Bridge (Booth P14051)**  
Our Innovation Stage sessions feature free, promotional content for all attendees.
- **OptiCon General Session: A Conversation with Scott Shapiro, Presented by United Opticians Associations (UOA) - Thursday, Sept 19 - The Bridge (Booth P14051)**  
Join us for a conversation with Scott Shapiro, CEO at Europa Eyewear/STATE Optical Co./AO Eyewear and the Chairman of TVC Board.
- **Patient Choice Awards - Friday, Sept 20 - Exhibit Hall – The Bridge (Booth P14051)**

### Exhibit Hall Hours

Thursday, Sept. 19 9:30am – 6:00pm  
Friday, Sept. 20 9:30am – 6:00pm  
Saturday, Sept. 21 9:30am – 3:00pm



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## Speaker Financial Disclosure Statement

Charlie Saccarelli is an owner and the president of Chadwick Optical. He potentially makes money when you buy stuff from Chadwick Optical. All relevant relationships have been mitigated.



Charlie's Car  
2009 Nissan Versa

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## ONE MORE THING

- You can take pictures of the slides if you want, but I'd rather you just pretend to pay attention to what I'm saying. It makes me feel so good.
- Email me at [cbs@chadwickoptical.com](mailto:cbs@chadwickoptical.com), and I'm happy to share the entire presentation with you. Or text/What's App/whatever me at 267-374-5601

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The Main Tools of Low Vision

Charlie Saccarelli, ABOM

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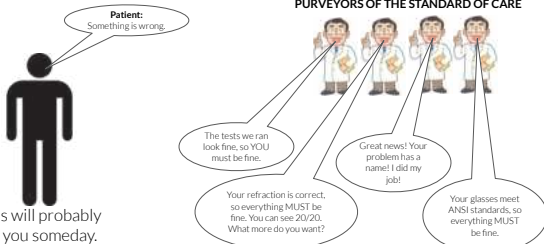


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### MY PERSONAL CAMPAIGN AGAINST GASLIGHTING



**Patient:**  
Something is wrong.

**PURVEYORS OF THE STANDARD OF CARE**

The tests we ran look fine, so YOU must be fine.

Great news! Your problem has a name! I did my job!

Your refraction is correct, so everything MUST be fine. You can see 20/20. What more do you want?

Your glasses meet ANSI standards, so everything MUST be fine.

This will probably be you someday.

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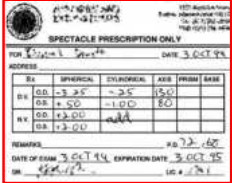
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### Let's Exceed the Standard of Care

- Vision goes far beyond the refraction/diagnosis
- "Understanding is love's other name" - Thich Nhat Hanh
- Just keep trying to understand.
  - What is it like to have this condition?
  - What is it like to see through their eyes?
- Know the people in your area who specialize in that stuff so if you can't help them, you can introduce them to someone who can.




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“As to methods, there may be a million and then some, but principles are few.

The man who grasps principles can successfully select his own methods. The man who tries methods, ignoring principles, is sure to have trouble.”

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### AGENDA

- Sight
  - What's low vision like?
- Heart
  - Stages of grief
  - The low vision mindset
  - The path from diagnosis to treatment
- Tools
  - Start simple
  - Lighting
  - Glare Control
  - Magnification
  - Technology

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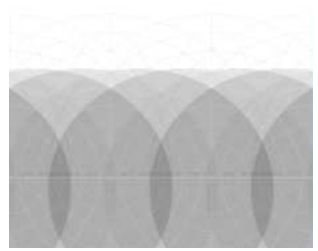
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### Your Vision

- ~190 degrees of visual field
- ~120 degrees of binocular field
- Each eye has:
  - ~90 temporal
  - ~60 nasal



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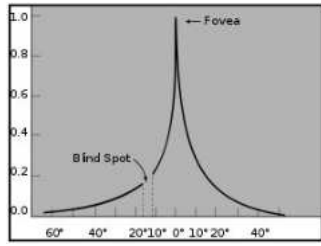
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### Traditional Plot of Visual Acuity Relative to Fovea

Decimal	Snellen
1.0	20/20
0.8	20/25
0.6	20/32
0.4	20/50
0.2	20/100
0.1	20/200




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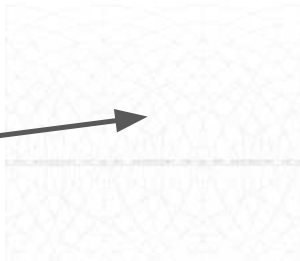
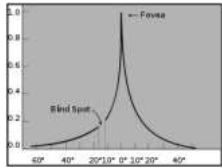


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### Plot of Acuity within Visual Field




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### Acuity within Visual Field

Area of Best Possible Vision




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Acuity within  
Visual Field

Better than  
low vision.



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Acuity within  
Visual Field

Low Vision to  
Legally Blind



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### How We See

It's not a picture

We focus on various  
areas within a scene to  
create a picture in our  
minds using these little  
snapshots



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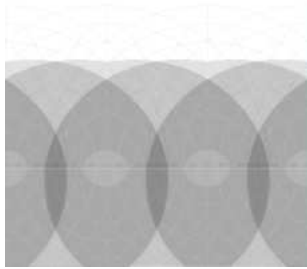
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**Orange: Where Things Are (ambient)**

**Purple: What Things Are (focal)**



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Knowing what you know now, how is this picture misleading?



NORMAL

Diabetic Retinopathy

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How about this one?



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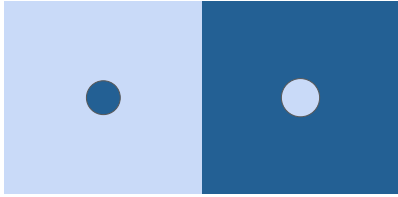
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The brain takes whatever info it has available, and does the best it can with it.



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Simulation from Vision Scientists



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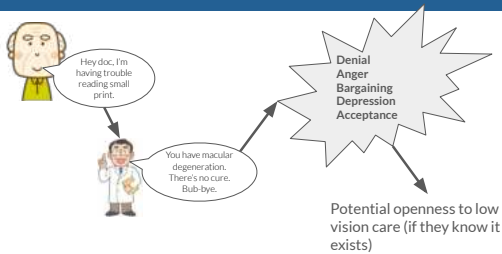
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### Common Path of a Low Vision Patient



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## Principles - Impairment vs. Disability

Impairment is only a disability when a person is unable to do something they want to do.

We're helping overcome the disability.  
We're not helping overcome the impairment.

### Questions that don't make sense

What's the best tint for macular degeneration?  
What's the best lamp for retinitis pigmentosa?  
What's the best software for albinism?

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## Disabilities Show Up in **Activities of Daily Living (ADLs)**

- Inability to read books
- Inability to distinguish currency
- Playing cards
- Reading pill bottles, newspaper,
- Reading the menu at a restaurant
- Seeing computer screen
- Seeing detail of faces
- Seeing street signs
- Finding the right button on a microwave
- Turning the oven/stove to the appropriate setting

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## Principles - Types of Help

- Make it brighter
- Make it bigger (without field reduction)
- Use another sense
- Make it less bright
- Make it bigger (with field reduction)

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## Methods - Tools to Help

### Beware the *Law of the Instrument*

If the only tool you have is a hammer, it is tempting to treat everything as if it were a nail.

Custom eyeglasses (our frequent instrument) are often a relatively expensive solution

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## Methods to Make it Brighter

- What wattage are the lightbulbs in their house?
- What contrast is their television screen/monitor?
- Direct vs Ambient Light
  - Task lighting vs. overhead lighting
- What temperature are their lights?
  - Do they see better with different light temperatures? 2700K vs 6000K?



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## Methods to Make it Bigger (without reducing field)

- eReader/Phone/Tablet - increase font size
- Large print books
- Large print playing cards
- Large print music
- Bigger Monitor/TV, lower resolution
- Digital Magnifiers/CCTV's



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### Methods to Use Another Sense

- Hey Siri!
- Hey Alexa!
- Bump Dots
- Talking Watches
- Talking Glucose Monitors, etc.
- Audible
- OCR Tools



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### Methods to Make it Less Bright

- Filters (Amber, Grey, Plum, etc)
- Hats
- Visors
- Window Tinting
- Heavier Curtains



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### Methods to Make it Bigger (reduced field)

- Handheld Magnifiers
- Stand Magnifiers
- Telescopes
- High-Powered Reading Glasses
- Digital Magnification
- High add bifocals (did you know they're available up to like a +20.00?)



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### More Magnification = Less Field of View



Naked Eye



2x magnification



4x magnification



6x magnification



8x magnification



10x magnification

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### How Much Bigger Do We Want to Make It?

For Distance - Snellen is good

Patient sees 20/200  
Wants to see 20/40  
 $200/40 = 5$



We need to magnify something to 5X its size

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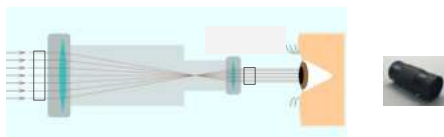
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### Why Snellen for Distance?

Acuity is measured at 20 ft (optical infinity)  
Distance Optics are afocal (parallel rays in, parallel rays out)



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## Near - Beware Snellen, Consider M-size

- Snellen is aligned around a reading distance of 40 cm
- Using M-size gives us flexibility to allow patient to CHOOSE their reading distance
- 1M ~ 8 point font



With a reading card, what size CAN they see? (M size)  
 How far away are they from their material? (meters)  
 What size do they WANT to see? (M size)

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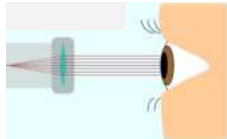
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## Near Device Calculation - Not X, Diopters

- Near Devices are **focal** (focused for a specific working distance)
- Magnification changes based on device location relative to work
- **Focal length doesn't change**
- X values on near devices are almost always wrong




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## Calculating Diopters Equivalent


 Smallest Size  $\frac{4}{0.4} = 10$   
 4M size  
 Reading Distance 0.4 meters  
 $\frac{10}{2} = 5$  Diopters


 2M  
 $\frac{10}{1} = 10$  Diopters  

 1M

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## M-Sizes of Common Reading Materials

- Newspaper print: .8M – 1M
- Large print bible: 1.25-2M
- Medication bottles: .4M-.8M
- Common Target is 1M



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## Summary

- Low vision is nothing like it looks in pictures and on reports
- We can't help with the impairment. We can help with the disability
- Disability = Someone can't do something they want to do
- How we help:
  - Make it brighter
  - Make it bigger (without field reduction)
  - Use another sense
  - Make it less bright
  - Make it bigger (with field reduction)

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## Additional Resources

- Amazing eBook - \$12 (doesn't go to me)
  - Written by a dream team of low vision doctors
  - Low Vision Educators from all of the optometry schools nationwide
  
- Beware education from companies that sell the stuff that they're educating you about...they're probably not going to recommend a hat.



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## Charlie's Dream World



Hey doc, I'm having trouble reading small print.



You have macular degeneration. While there's no cure, it can be a slow process, and there are many tools that can help you keep doing your favorite things. We'll get you set up with a low vision specialist who can show you the ropes.

Until Then...

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**On behalf of Vision Expo, we sincerely thank you for being with us this year.**

### **Vision Expo Has Gone Green!**

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE Letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.



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