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- University of California Berkeley | Associate Professor of Health Sciences
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### **Disclosures**

- The content of this course was developed independently without commercial bias or influence
- Consulting
  - o Visionix
  - o Essilor Instruments, USA
  - o Topcon

## Our Learning Journey

- Technology Timeline
- Trends and Demographics
- Ergonomics
- Lens Analysis and Contour Plots
- Task Specific Lens Solutions
- Understanding Near Task Specific Lens Designs
  - Near Variable Focus (Computer, Occupational)
    - Full Range
    - Intermediate/Near
  - o Powerboost
- Product Portfolios
- Case Presentations



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# **Technology Timeline**

1920's + 1930's - Radio 1940's + 1950's - Television



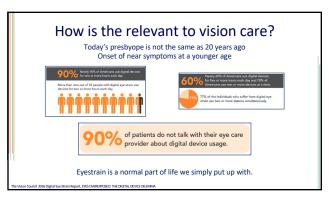


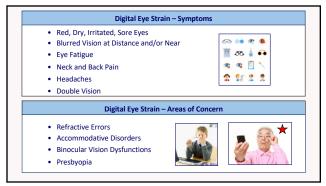


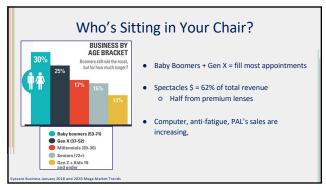
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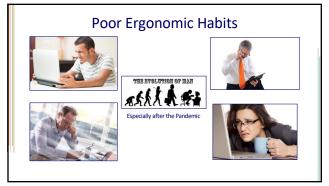


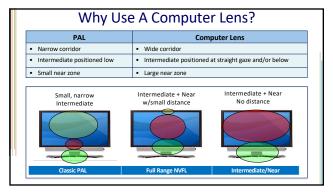


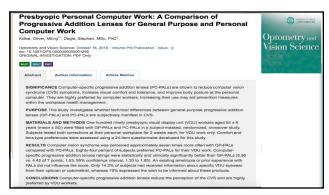


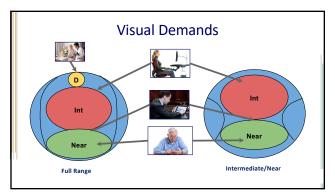




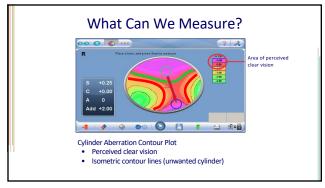


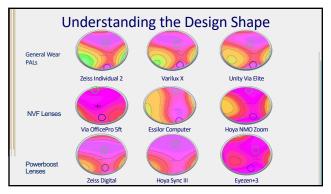


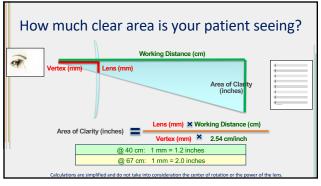


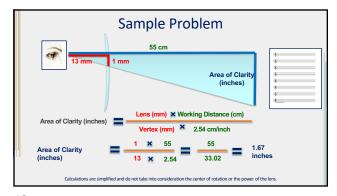


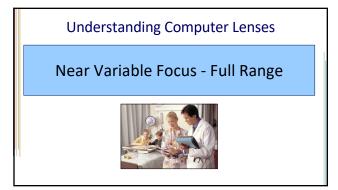


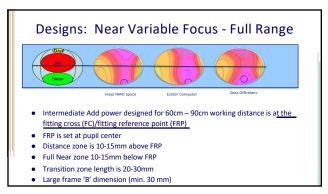


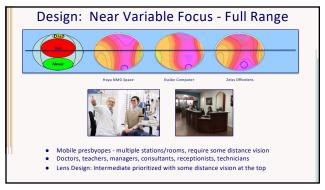




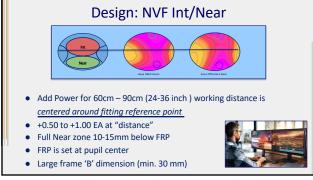


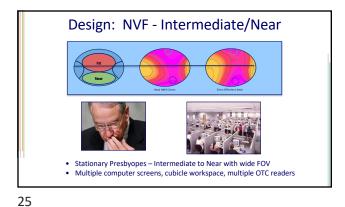












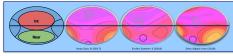
Powerboost as Intermediate/Near

**Understanding Computer Lenses** 

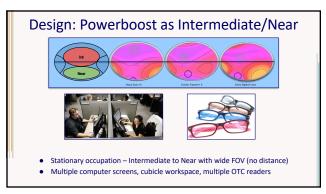


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Design: Powerboost as Intermediate/Near

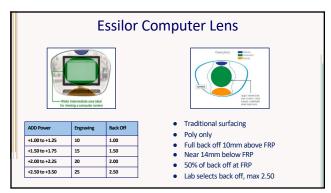


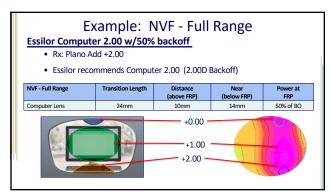
- "Powerboost": designed and marketed to pre-presbyopes
- Intermediate/near use for presbyopes
- Wide, stable "top" portion of lens
   Minimal peripheral aberration
  - o edge-to-edge clarity at FRP
- Transition zone is 3-4 mm below FRP
- Corridor to full near 9-10 mm
- Can use smaller frame 'B' dimension (min. 20mm)

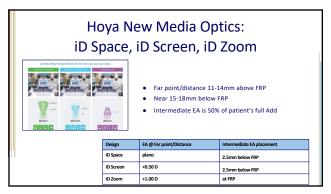


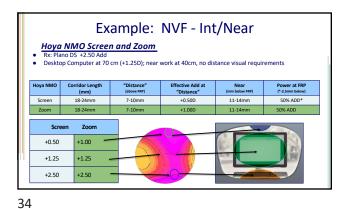
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NAME ADDRE	Fre	d		DATE			.	ocicet acoign
Ŗ		SPHERICAL	PHERICAL CYLINDRICAL AXIS		PRISM	BASE	O Int Add	
D.V.	0.0.	Plano	DS					o Visual Needs
	0.5.	Plano	DS					
nл	0.0.	+2.50					- III •	Dist. Mono PDs
	0.5.	+2.50					- III •	VFH to pupil center
Rema DR.	rks _Int	termediate =	+1.25, Unity Off	icePro 10 ft.		FM-1076		

Eff. ADD @ FRP	Eff. ADD @ Lens Top
Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)
Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67
Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75
50% of the ADD or max of -2.25	Add reduction up to max -2.25
	Room +0.50 Desk +0.75 Book +1.25 S0% of the Baschoff Power  Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add range of vision for: 10ft @110cm 5ft @80cm  Workspace: 50% of Add Computer: 50% of Add plus +0.25D









Shamir
WorkSpace, Computer

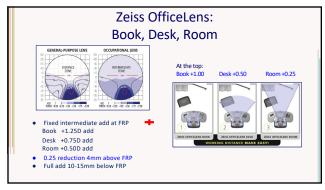
WorkSpace

• Dynamic Back off Power to +0.25 EA
• EA at FRP is 50% of add
Computer

• Dynamic Back off Power to +0.75 EA
• EA at FRP = 50% Add plus +0.25D

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	Power Boost Le	enses	Boost at the Bottom
	Zeiss Digital Lens	Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50 +0.75 +1.00 +1.25
Powerboost Lenses	Eyezen	Eyezen +1 Eyezen +2 Eyezen +3 Eyezen +4	+0.40 +0.60 +0.85 +1.10
Product Portfolio	Hoya Sync III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57 +0.95 +1.32
	Unity Relieve	Relieve 50 Relieve 70	+0.50 +0.70
11	Shamir Relax	Relax 50 Relax 65 Relax 80	+0.50 +0.65 +0.80

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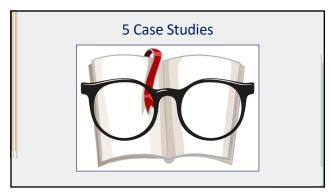
# How to Design a Powerboost as Intermediate/Near

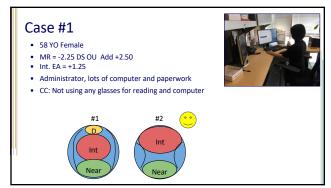
### EXAMPLE:

Plano with +2.25, Intermediate effective ADD is +1.25

- Determine the EA at intermediate distance
- Select the appropriate Powerboost lens design

Powerboost Lens	Boost	Fit	EA Int/Near
Sync5/Sync9/Sync13	0.55 / <mark>0.95</mark> 1.32	Pupil	+1.25 / +1.80 +1.25 / +2.20 +1.25 / +2.57
Zeiss Digital Lens	0.50 / 0.75 1.00 / 1.25	Pupil	+1.25 / +1.75 +1.25 / +2.00 +1.25 / +2.25 +1.25 / +2.50
Eyezen+ 1/2/3/4	0.40 / 0.60 / 0.85 / 1.10	Pupil	+1.25 / +1.65 +1.25 / +1.85 +1.25 / +2.10 +1.25 / +2.35
Unity Relieve 50, 70	0.50 / 0.70	Pupil	+1.25 / +1.75





NVF Lens Design	Eff. ADD @ FRP	Eff. ADD @ Lens Top	
Zeiss OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00	
Essilor Computer Lens	50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)	
Hoya New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00	
Unity Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67	
Shamir Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75	
Shamir Autograph II Office	50% of the ADD or max of -2.25	Add reduction up to max -2.25	

	Power Boost Le	enses	Boost at the Bottom
	Zeiss Digital Lens	Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50 +0.75 +1.00 +1.25
Powerboost Lenses	Lenses Product	Eyezen +1 Eyezen +2 Eyezen +3 Eyezen +4	+0.40 +0.60 +0.85 +1.10
Product Portfolio		Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57 +0.95 +1.32
Diff. b/w Int & Add = 1.25 D	Unity Relieve	Relieve 50 Relieve 70	+0.50 +0.70
11	Shamir Relax	Relax 50 Relax 65 Relax 80	+0.50 +0.65 +0.80

Case #2  • 55 YO Male, Receptionist  • moderate computer work  • Vis. Reqmnts: Dist/Int/Near  • CC: GW PAL is not working  - Tilts head up = neck pain  - Small FOV  • MR = +1.00 DS OU Add +2.00	
Intermediate add +1.00  #  Nea  Intermediate add +1.00  #  Nea  Intermediate add +1.00	int

NVF Lens Design	Eff. ADD @ FRP	Eff. ADD @ Lens Top	
Zeiss OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00	
Essilor Computer Lens	50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)	
Hoya New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00	
Unity Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67	
Shamir Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75	
Shamir Autograph II Office	50% of the ADD or max of -2.25	Add reduction up to max -2.25	

## Case #2

- 55 YO Male
- MR = +1.00 DS OU Add +2.00
- Intermediate add +1.00
- Receptionist; moderate computer work
- CC: GW PAL is not working

  - Upward head tilt creates neck pain
     Small horizontal and vertical field of view







Lens Design	EA @ Distance	
Essilor Computer	0.00	
Hoya NMO iD Space	0.00	
Shamir Autograph II Office	0.00	
Shamir Workspace	+0.25	
Unity Via OfficePro 10ft	+0.33	

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### Case #3

- 48 YO Female
- Homemaker
- MR = Plano with +1.75ADD
- Uses +0.75 OTC at computer = intermediate add
- +1.00 OTC at near on top of computer readers
- CC: Wants to combine the two pairs of OTCs into a single pair of glasses





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NVF Lens Design	Eff. ADD @ FRP	Eff. ADD @ Lens Top	
Zeiss OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00	
Essilor Computer Lens	50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)	
Hoya New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00	
Unity Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67	
Shamir Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	Workspace +0.25 Computer +0.75	
Shamir Autograph II Office	50% of the ADD or max of -2.25	Add reduction up to max -2.25	

	Power Boost Le	enses	Boost at the Bottom
	Zeiss Digital Lens	Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50 +0.75 +1.00 +1.25
Powerboost Lenses	Eyezen	Eyezen +1 Eyezen +2 Eyezen +3 Eyezen +4	+0.40 +0.60 +0.85 +1.10
Product Portfolio	Hoya Sync III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57 +0.95 +1.32
	Unity Relieve	Relieve 50 Relieve 70	+0.50 +0.70
II	Shamir Relax	Relax 50 Relax 65 Relax 80	+0.50 +0.65 +0.80

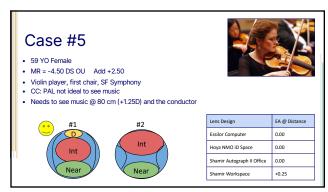
Case #4	
52 YO Male     Daytrader – 4 screens at 75cm	
CC: Blurry reading and paperwork at near Currently using -5.00DS OU SVN Rx Computer screens are clear MR = -6.25 DS OU Add +2.00	
Intermediate add +1.25 #1  Int  Near  Near	#2 Int

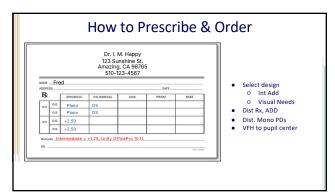
NVF Lens Design	Eff. ADD @ FRP	Eff. ADD @ Lens Top
Zeiss OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
Essilor Computer Lens	50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)
Hoya New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
Unity Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67
Shamir Workspace/Computer	Workspace: 50% of Add Computer: 50% of Add plus +0.25D	
Shamir Autograph II Office	50% of the ADD or max of -2.25	Add reduction up to max -2.25

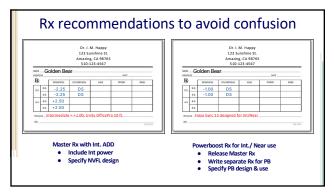
	Power Boost Le	enses	Boost at the Bottom
	Zeiss Digital Lens	Digital 500 Digital 750 Digital 1000 Digital 1250	+0.50 +0.75 +1.00 +1.25
Powerboost Lenses Product Portfolio	Eyezen	Eyezen +1 Eyezen +2 Eyezen +3 Eyezen +4	+0.40 +0.60 +0.85 +1.10
	Hoya Sync III	Hoya Sync 5 Hoya Sync 9 Hoya Sync 13	+0.57 +0.95 +1.32
	Unity Relieve	Relieve 50 Relieve 70	+0.50 +0.70
11	Shamir Relax	Relax 50 Relax 65 Relax 80	+0.50 +0.65 +0.80

Case #5  • 59 YO Female  • Violin player, first chair, SF Symphony  • CC: PAL not ideal to see music  • Needs to see music @ 80 cm (+1.25D) and the
conductor  • MR = -4.50 DS OU Add +2.50
#1 #2   #2   Int   Near   Near

NVF Lens Design	Eff. ADD @ FRP	Eff. ADD @ Lens Top
Zeiss OfficeLens: Room, Desk, Book	Room +0.50 Desk +0.75 Book +1.25	Room +0.25 Desk +0.50 Book +1.00
Essilor Computer Lens	50% of the Backoff Power	0.00 to +0.25 (max back off -2.50)
Hoya New Media Optics: Space, Screen, Zoom	Space/Screen: 50% add @2.5mm below FRP Zoom: 50% of Add	Space +0.00 Screen +0.50 Zoom +1.00
Unity Via OfficePro: 10ft., 5 ft.	range of vision for: 10ft @110cm 5ft @80cm	10ft +0.33 5ft +0.67
Shamir Workspace/Computer  Workspace: 50% of Add Computer: 50% of Add plus +0.25D		Workspace +0.25 Computer +0.75
Shamir Autograph II Office	50% of the ADD or max of -2.25	Add reduction up to max -2.25







### At the End of the Day



- Did I address the chief concern with the appropriate recommendations?
- Is it an improvement over what they are used to?

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On behalf of Vision Expo, I sincerely thank you for being here 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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