

# **WORKING WITH PEDIATRICS**

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

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## **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.



# Financial Disclosure

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**Carrie Wilson has no financial interests to disclose.**

By the end of this course you should be able to:

- Identify the unique fitting requirements for children's frames
- Make adjustments to optical measurements to accommodate the needs of a child
- Make appropriate lens design adjustments based on the Rx
- Care for children with unique fitting challenges
- Work with children and parents to design eyewear that meets the needs of both groups

# Kids are special

- Duality of working with the child AND parent as “one patient.”
- Special visual needs and considerations
- An interaction level adjustment must occur to meet the needs of the child

**ONE OF THE BIGGEST MISTAKES IS THINKING THAT A CHILDREN'S FRAME IS LIKE AN ADULT'S FRAME, ONLY SMALLER.**

# The frame

## Facial Considerations:

- Nasal bridge is not fully developed
- Soft, delicate skin
- Higher, flatter cheekbones

# Safer Features in Kids' Dresswear

- Deep groove in the eyewire
- Full Frame
- Spring hinge....maybe
- Silicone-based rubber



# Materials

- Higher quality metal and acetate
- Silicone or rubber without metal for babies and toddlers
- Be aware of potential sensitivity issues
- Bendable titanium should not be used with high power, particularly cylinder, prism, or multifocal lenses

# The Bridge

Critical due to weight dispersion

Things to look for

- Larger splay angle
- Narrow bridge size with a larger frontal angle
- Lower crest height

# Poorly fitting bridge

- The weight of the spectacles is not carried proportionally
  - Too much on the crest = too wide
  - Too much on the side = too narrow
- Child complains of pain
- May cause a permanent ridge on the nose
- Glasses are more likely to slip

# Adjusting the bridge

- Bridge should have as much evenly distributed contact a
- Saddle is usually best if it is full
- Keyhole works well with older children
- With nose pads, consider
  - More support at the bottom of nose pad
  - Larger splay angle
  - Larger pad surface
  - Strap bridge

# The Temples

## Things to look for

- Smaller frontal width
- Temple placement close to the center of outer eyewire
- Smaller angle
- Shorter length to bend

# Temple types and fit

## Skull or Convertible

- Bends around the top of the ear
- Should end approximately mid-ear and hug the skull

## Comfort Cable

- Harder to remove

# The Frame Font

## Things to look for

- Better horizontal decentration
- Smaller Effective Diameter
- Shorter back vertex distance

# The Frame Front

Do not fall into the “grow into it trap.”

The facial size of the child emphasizes size errors.

Eye size must be slightly smaller than what you would fit on an adult due to pupillary distance.

Minimize how high it comes up over the brow or how low it fits on the bridge.



# Lens selection

Remember, proper frame fit effects  
the outcome of lens thickness more  
than material or asphericity

# Lens selection

## Things to look for

- Optical Clarity
- Impact Resistance
- UV Protection
- Light and comfortable

# Lens selection

CR39, Poly, Trivex, and High Index are all Impact Resistant Materials and are safe to place into children's eyewear. The Rx and optical clarity are factors in deciding which material to select.

CR – 39 aka Plastic	
Pros	Cons
Impact Resistant	Needs a scratch resistant coating
High Abbe Value	No inherent UV protection
Responds well to temperature fluctuations	Thickest of the non-glass materials
Less internal reflections	

\* Duty to Warn

## Lens selection

Polycarbonate	
Pros	Cons
High Impact Resistance	Low Abbe
Thinner than CR-39	Very soft when you get past the hardcoat
Inherent UV Protection	Requires Scratch Resistant Coating
Lightweight	Poly is not tintable but some coating may be applied

Lens selection

Trivex®, HiVex, MR7	
Pros	Cons
High Impact Resistant	May be thicker than Poly
Thinner than Plastic	More expensive
Lightest material on market	Some coatings may affect impact resistance
Inherent UV protection	Susceptible to scratching if left without scratch coat
Higher Abbe value	

Lens selection

High Index Plastic	
Pros	Cons
Less Impact Resistant than Poly or Trivex	Ranges in weight and Abbe Value
Thinnest material	More expensive
Lightweight	Internal reflections, particularly in higher powers
Inherent UV protection	Anti-reflective coating is highly recommended
	Scratches easily

Lens selection

# Lens selection

## Aspherics

- Are flatter
- Use multiple curves to reduce unintended power changes the farther away from the major reference point.
- Require AR coating to limit reflections off of a flatter surface.



# Measurements

## **Pupillary Distance**

- Mono PDs - Children may develop disproportionately
- Pupilometer or another accurate digital measuring system preferred for older kids
- PD ruler may be necessary for younger kids
- Extremely young or strabismic cases measure inner canthus to outer canthus

# Measurements

## **Segmented Bifocal**

- To minimize the prismatic effect, Round or FT35/45 is best
- Height should bisect pupil unless otherwise stated
- Below the visual axis
- At lower limbus
- Should still utilize monocular PDs if possible

# Measurements

## Progressive

- Unless noted by the prescriber, add the drop to fitting height so that the MRP is pupil center.
- The doctor may give different instructions based on visual therapy needs.

## Specialty Lenses

- Fit as directed by the lens manufacturer .

# Measurements

## SV Fitting Height

- Traditional lenses use Martin's Formula for Tilt
  - Measure Pupil Height
  - Measure pantoscopic tilt
  - Lower 1mm for every 2 degrees of tilt

Height adjustment should be minimal since children's frames fit at a flatter angle.

# Special Fit

Some children require special consideration when selecting eyewear.

- Aphakia
- Lenticular
- Down's Syndrome
- Albinism
- Conditions with facial anomalies

# Special Fit Aphakia and Minus Lenticular

## **Frame**

- Smaller eye size but large enough for the carrier
- Rounded shape is not necessary because of the carrier
- Minimal decentration
- Adjustable nose pads or excellent bridge fit
- Minimal vertex
- Cable or secure temples
- Thicker frames

# Special Fit Down's Syndrome



## Frame selection

### Avoid

- Glasses perched on the edge of the nose
- High crests at the bridge
- Short length to bend

### Look for

- Adjustable nose pads
- Cable or strap temples
- Low crests
- Elongated turnback end
- Erin's World by Specs4Us

# Special Fit Albinism

## Lenses

- Should treat extreme photophobia
- Tinted
- Polarized sunwear
- Mirror coating

## Frames

- Hypoallergenic
- Skin is usually sensitive



# Special Fit Facial Anomalies

## Ptosis

Kids with Ptosis may not be eligible for surgery, so a ptosis crutch is necessary.

## Crouzon's Syndrome

Eye protrusion should be considered, and vertex distance should be modified.

## Collin's Syndrome

Underdeveloped and uneven ears make temple fitting difficult. Headbands work .

# Dispensing

## Things to Remember

- A child will have much easier access to soap and water than a special lens cleaner
- Demonstrations make a large impression on a child
  - Cloth vs. paper towels
  - Scratched lenses
- Use simple terminology

# Dispensing

## Safety Reminder

- It is not recommended that dress eyewear be worn during sports activities.
- Even if the lens material is impact resistant, the frame cannot withstand a substantial impact.
- Sportswear with high-impact rated lenses is recommended for physical activities