WORKING WITH PEDIATRICS

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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 both 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

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- Full Frame

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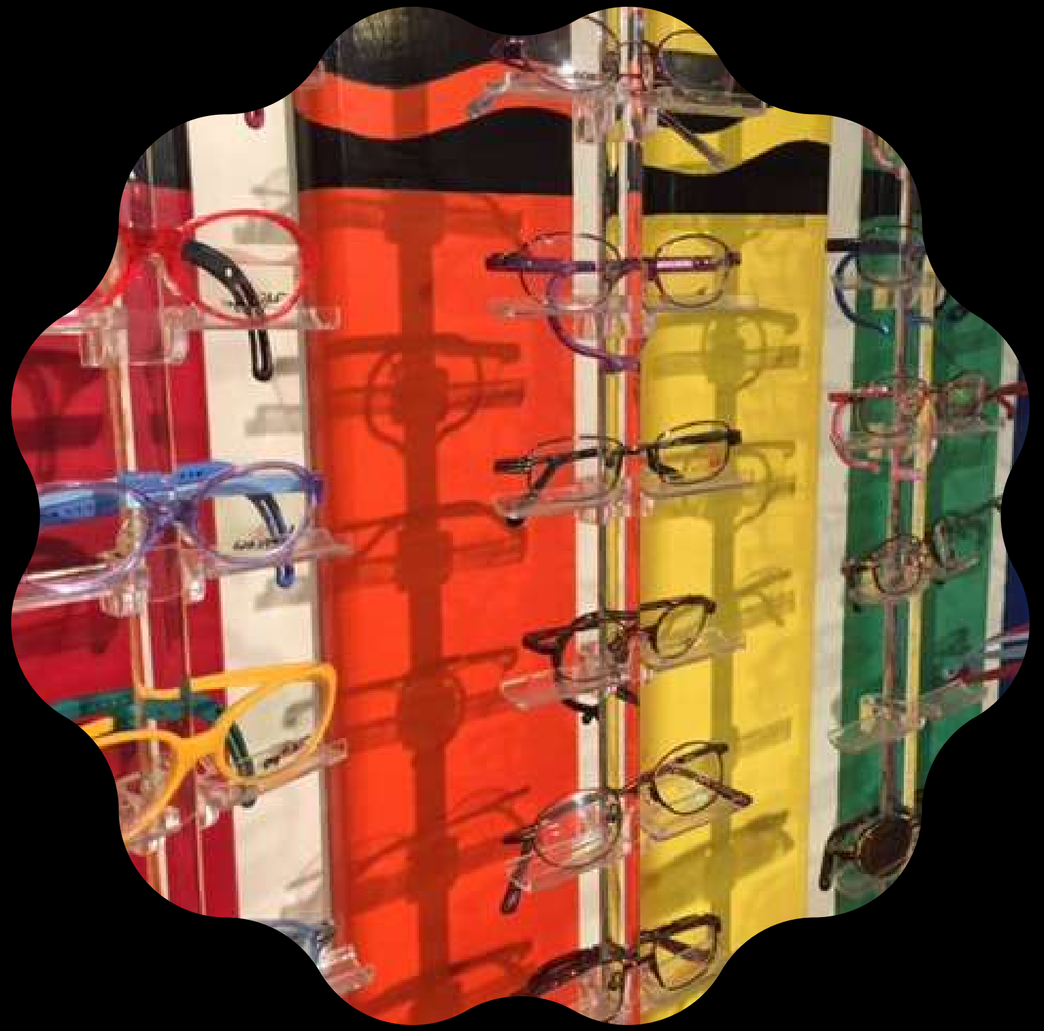
- Spring hinge....maybe

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

Things to look for

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- Larger splay angle
- Narrow bridge size with larg
- Lower crest height

The Bridge

Larger splay angle

Splay angle is the angle of the pad or pad arm on the horizontal plane

The Bridge

Narrow bridge size with a larger frontal angle

The frontal angle is the angle of the bridge or pad on the vertical plane

The Bridge

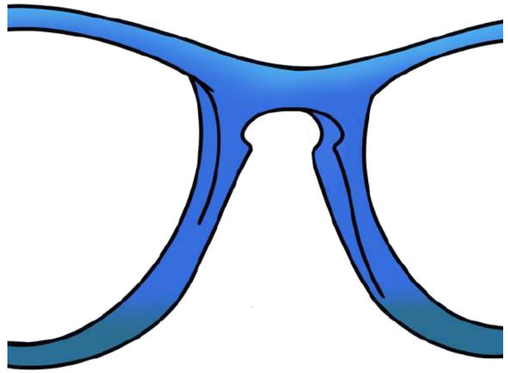
Lower crest height, which is the distance between the lower eyelid and the nasal crest.

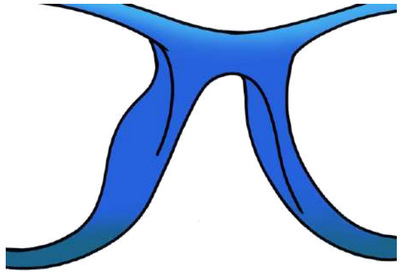
Poorly fitting bridge

- 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 as possible
- Saddle is usually best if it is full
- Keyhole works well with older children
- With nosepads, consider
  - More support at bottom of nosepad
  - Larger splay angle
  - Larger pad surface
  - Strap bridge





The Temples

Things to look for

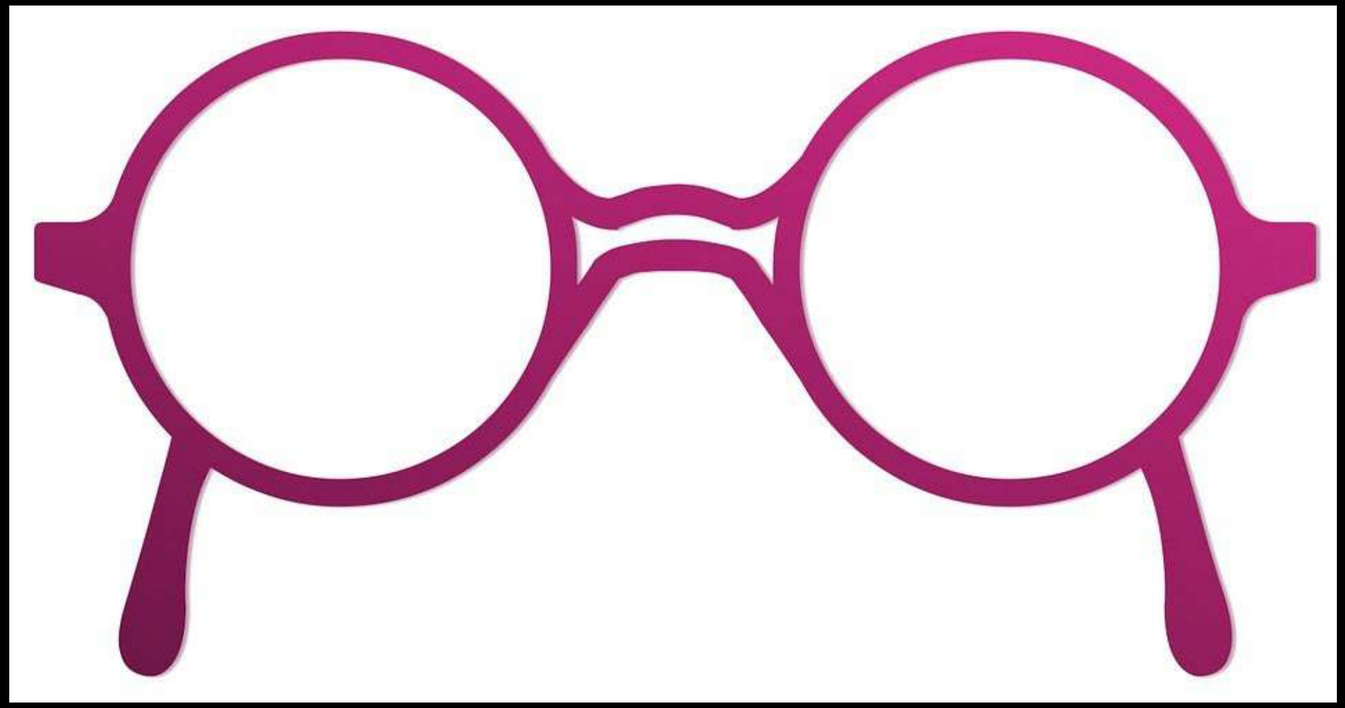
- Smaller frontal width
- Temple placement close to the center of outer eyewire
- Smaller angle
- Shorter length to bend

The Temples

Smaller front width allows for greater peripheral vision

The Temples

Temple placement closer to the center of the eyewire prevents glasses from slipping.

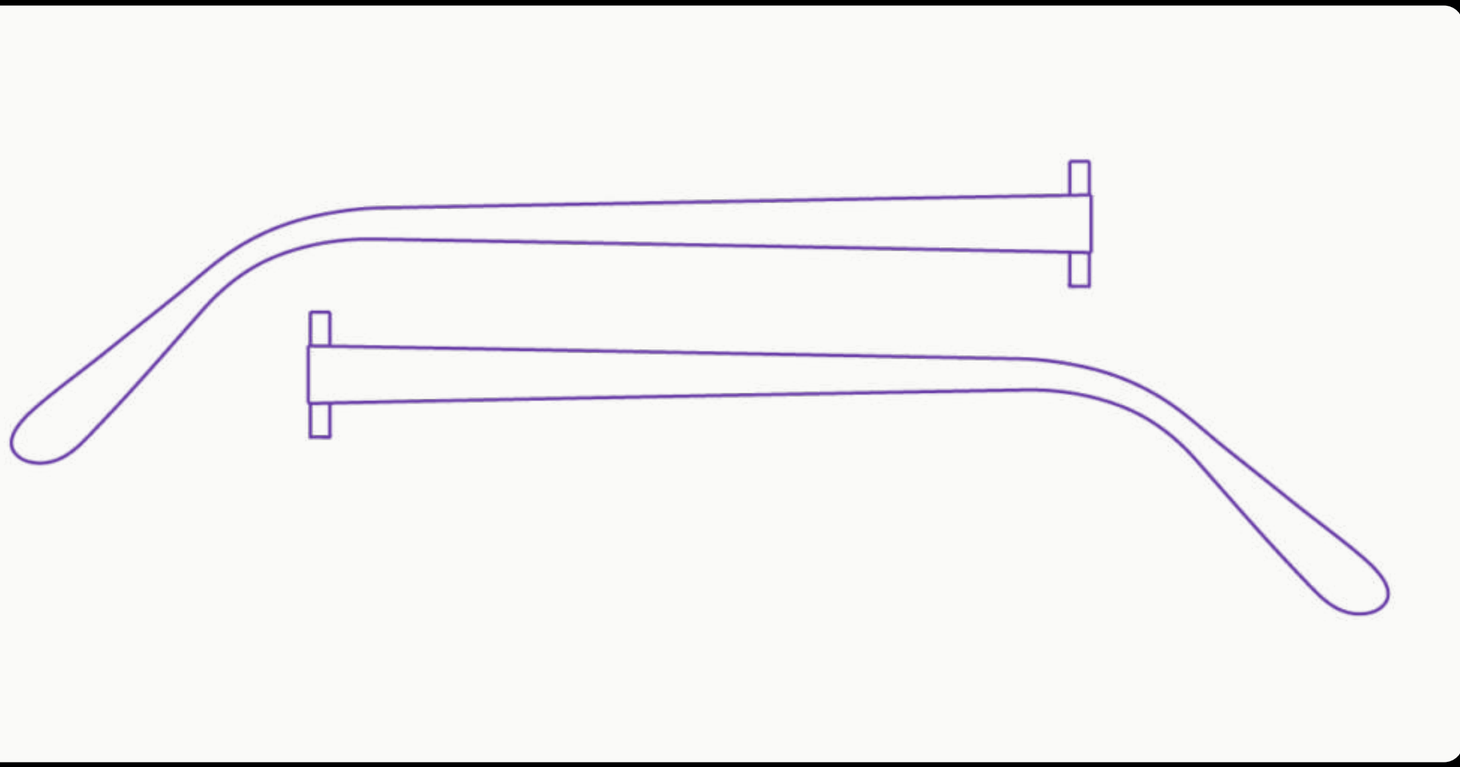


The Temples

Smaller temple angle allows flatter frame front fit to allow for easier bridge fit

The Temples

A shorter length to bend prevents the frame from slipping.



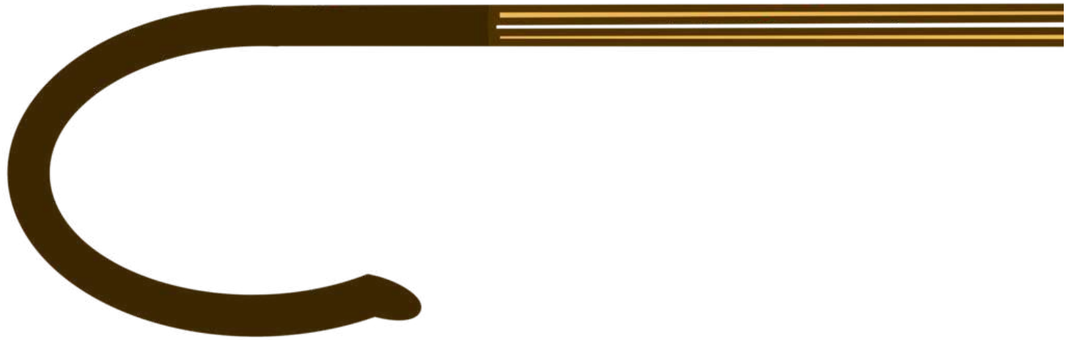
Temple types and fit

Skull or Convertible

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

Comfort Cable

- Harder to remove
- Curves around the ears



Temple types and fit

Skull temples should run parallel to the skull, or be slightly bowed if designed that way, so no pressure points are created

Temple types and fit

Adjusting Riding Bow and Cable Temples

- Curl should sit along the back of the ear and must stop just short of the ear lobe.
- Should be covered in silicone or rubber to help with durability and comfort.
- If ordered add at least 15 mm to the length of the skull temple that is suitable for the child
- You can add cable temple extensions to adapt existing skull temples
- Both temple types should not press along the side of the head and should touch just before the ear bend.

The Frame Font

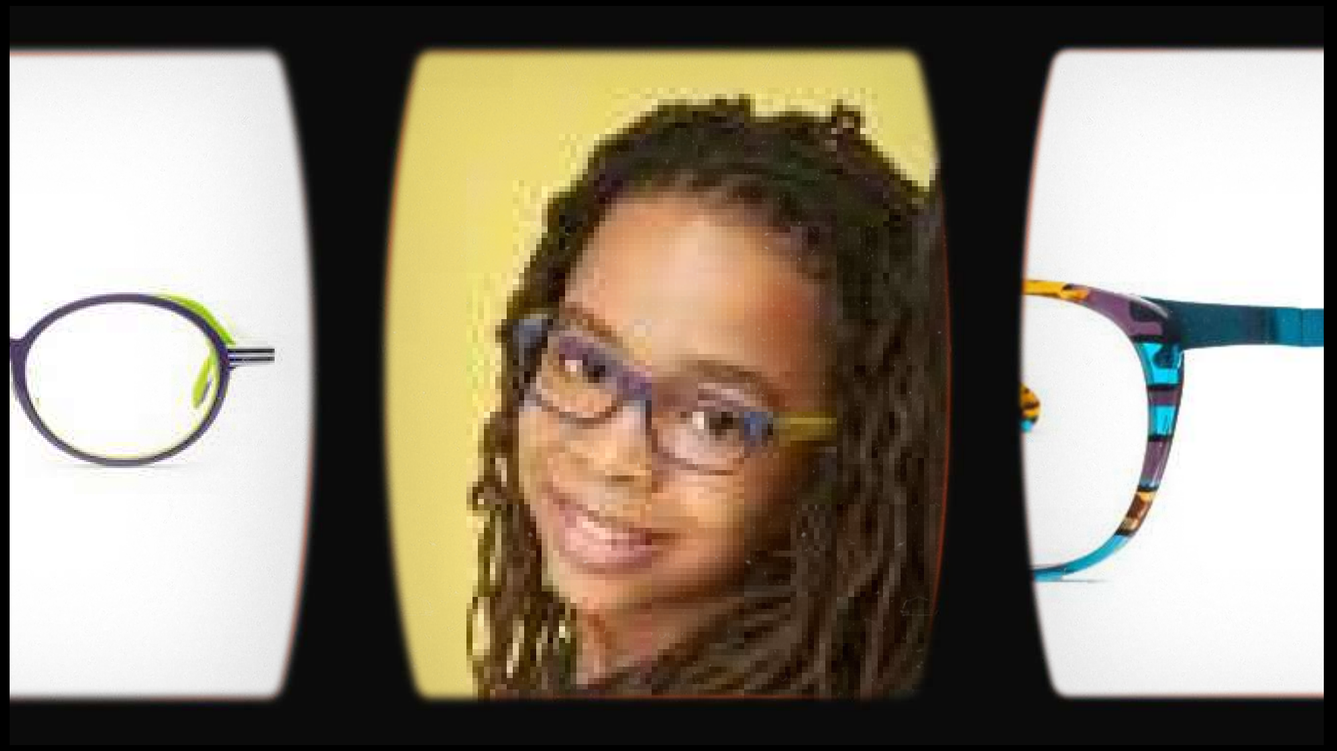
Things to look for

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

The Frame Front

Better horizontal decentration and proper width

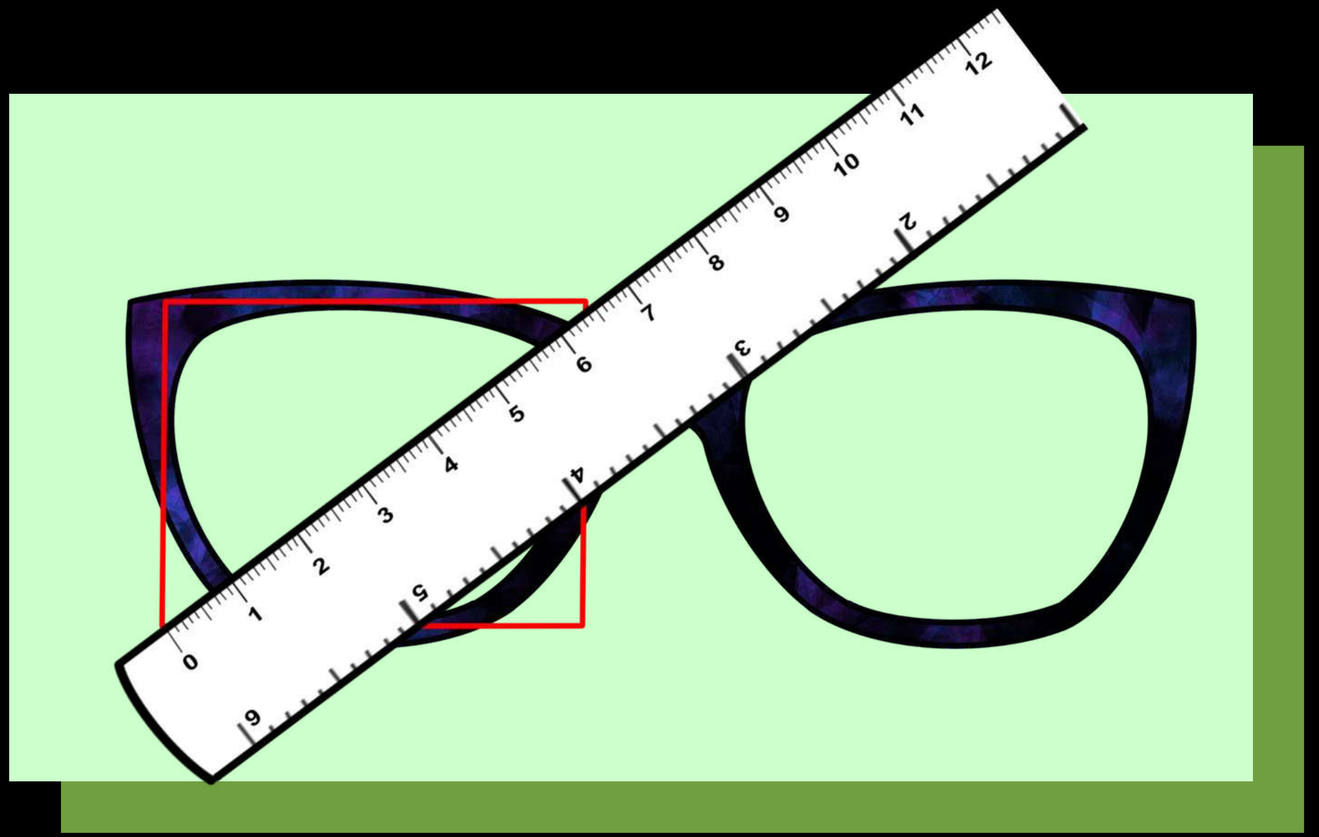
- Too wide frames fall off
- Too narrow frames harm delicate skin
- Minimizes thickness variances
- Increases adjustability
- Look for edge extender and turnbacks



The Frame Front

Smaller Effective Diameter

- Minimizing ED reduces weight and thickness
- May keep frame off of the cheeks



The Frame Front

Shorter back vertex distance

- Decreases magnification and minification differences
- Reduces aberrations
- Increases effectiveness of measurements
- Optimizes the Rx

The Frame Front

Do not fall into the “grow into it trap”

The facial size of the child emphasizes size errors

Eye size needs to 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	

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

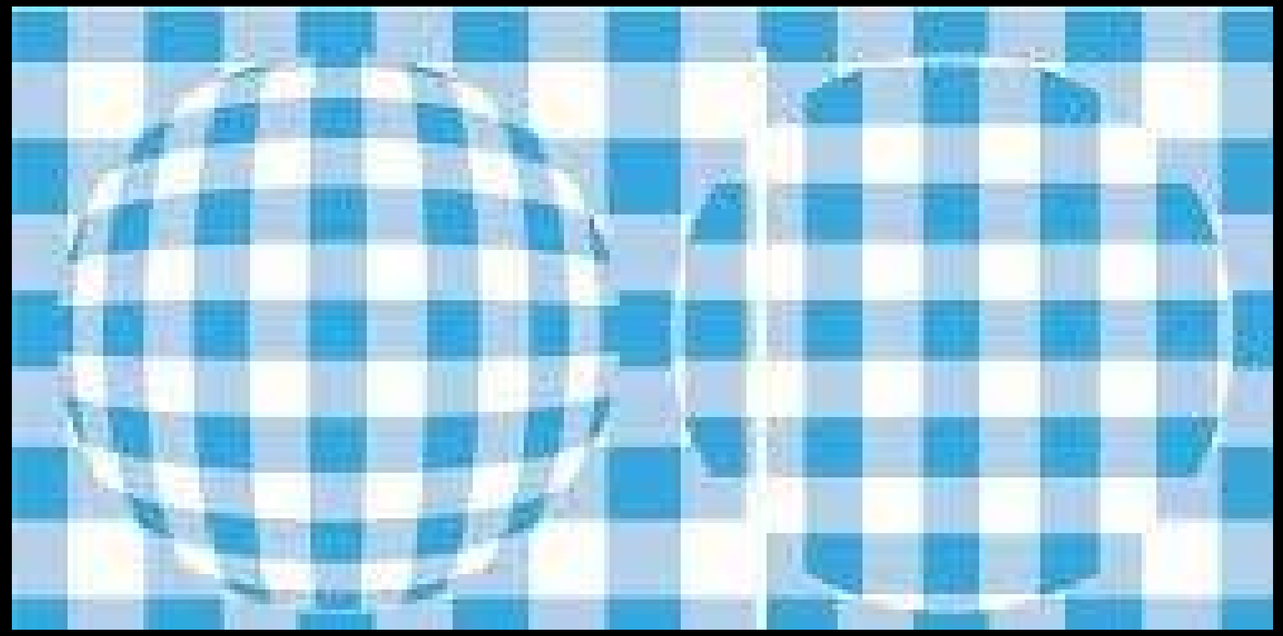
Lens selection

Duty to Warn

Lens selection

Aspherics

- Flatter
- Uses multiple curves to reduce unintended power changes further away from the major reference point
- Requires 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 visual axis
- At lower limbus
- Should still utilize monocular PDs if possible

Measurements

Progressive

- Unless noted by prescriber, add drop to fitting height so that the MRP is pupil center
- Different instructions may be given by the doctor based based on visual therapy needs

Specialty Lenses

- Fit as directed by lens designer

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

Adjustment to height should be minimal since children's frames are 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 eyesize but large enough for the carrier
- Rounded shape is not necessary because of the carrier
- Minimal decentration
- Adjustable nosepads or excellent bridge fit
- Minimal vertex
- Cable or secure temples
- Thicker frames

Special Fit
Down's Syndrome

Frame selection

Avoid

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

Look for

- Adjustable nosepads
- Cable or strap temples
- Low crests
- Elongated turnback endpieces
- 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

Special Fit Facial Anomalies

Ptosis

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

Special Fit Facial Anomalies

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Crouzon's Syndrome

Eye protrusion should be considered and vertex distance modified

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 modified

Collin’s Syndrome

Underdeveloped and uneven ears make temple fitting difficult, headbands work better

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 are recommended for physical activities

Pediatric Dispensing

Pediatric Dispensing is a joy and a challenge. There is nothing like helping a child to see. By keeping the uniqueness of a child in mind, this experience can be a joy for all

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.